Symposium

17th Japan-Taiwan Conference on Otolaryngology-Head and Neck Surgery

Symposium 1 Otology 1

SY1-1

Application of a Dexamethasone-Eluting FLEX28 Electrode in an Etiology-Defined Candidate for Electric–Acoustic Stimulation

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Background:
Electric–acoustic stimulation (EAS) has become an established treatment option for patients with ski slope-type hearing loss, enabling the combination of low-frequency acoustic amplification and high-frequency electrical stimulation. However, residual hearing preservation and prevention of post-operative fibrosis remain major challenges. Steroids are usually administered during and after surgery to suppress inflammation, but their effect is short-lived. To provide a sustained effect, a novel dexamethasone (DEX)-eluting cochlear implant electrode (FLEX28 DEX, MED-EL) has recently been developed.
Methods:
We report a clinical case performed at Shinshu University in February 2024, in which a FLEX28 DEX electrode was implanted in a 53-year-old female presenting with progressive high-frequency hearing loss due to a mitochondrial m.1555A>G variant. Genetic testing confirmed the etiology, aligning with prior findings that such patients, often with preserved low-frequency hearing, are good candidates for EAS. Surgery employed a round window approach with intraoperative cochlear microphonic monitoring to optimize electrode positioning and preserve cochlear function. Postoperative outcomes were compared against historical controls receiving conventional FLEX28 electrodes without DEX.
Results:
Residual hearing was well preserved, with hearing preservation classified as partial (58.6%). Audiometric thresholds demonstrated acoustic hearing maintained up to one year postoperatively, with aided EAS performance at 25–35 dB. Speech perception improved markedly: 72% in monosyllable recognition (quiet, 65 dB SPL) and 92% in word recognition (S/N +10 dB). Impedance field telemetry (IFT) revealed exceptionally low and stable values across all channels, in contrast with fluctuating impedances observed in non-DEX controls. Given that impedance is considered a surrogate marker for post-operative fibrosis, these findings suggest that intracochlear steroid release minimized fibrotic reactions around the electrode array.
Discussion:
This is the first report of a DEX-eluting electrode applied in an EAS candidate with genetically defined hearing loss. The case illustrates several key implications: (1) genetic diagnosis informs candidacy and prognosis, particularly for patients with progressive, irreversible variants such as m.1555A>G; (2) the FLEX28 DEX electrode effectively stabilizes impedance and reduces the risk of fibrosis, potentially enhancing long-term cochlear health; and (3) combining minimally invasive surgical techniques with pharmacologically active electrodes expands therapeutic options for preserving cochlear structures, which is critical for future interventions such as gene or regenerative therapies.
Conclusion:
The FLEX28 DEX electrode demonstrated clinical utility in maintaining residual hearing and sustaining low postoperative impedance in an etiology-defined EAS patient. These findings highlight the potential for broader application of DEX-eluting electrodes in cochlear implantation, offering a pathway toward improved structure preservation and long-term auditory outcomes.

SY1-2

Age at which individuals with maintained good hearing exceed the cut-off value in the survey of the community-based study

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Background:
As evidence accumulates on the disadvantages arising from unaddressed hearing loss, early detection and intervention for hearing impairment offer benefits to both individuals and society from various perspectives, including improved quality of life and reduced healthcare costs. Despite the perceived cost-effectiveness of hearing screening for middle-aged and older adults, regular hearing screening is not implemented for groups other than school-age children and corporate employees.

Aim:
To estimate the age at which hearing loss exceeds the cutoff value and the trajectory of hearing ability based on an observational study that followed the same Japanese individuals over a long period in randomly selected regional populations.

Methods:
Data of the participants in the present analyses were collected from the National Institute for Longevity Sciences, Longitudinal Study of Aging (NILS-LSA). The absence of hearing impairment is audiometrically defined by the WHO conventional classification, in which hearing level for the better ear of averaged hearing threshold over frequencies 0.5, 1, 2 and 4kHz is 25 dB or better. The analysis included 961 individuals who evaluated “no hearing impairment” at baseline (2000-2002) and also participated in the seventh survey (2010–2012). The proportion of individuals who transitioned from “no hearing impairment” at the baseline to “hearing impairment” was calculated by age group at the seventh survey (10 years later).

Results:
The rates of individuals who transitioned to “hearing impairment” were 9.3, 14.6, 32.6, 26.9, 51.2, 61.3, and 69.2 % in their 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, and 80 years or older, respectively. Additionally, during the symposium presentation, we will show the trajectory of hearing levels by frequency.
The rate of individuals aged 60–64 who developed hearing impairment exceeded 30 %. This analysis indicated that more than one in four individuals who maintained good hearing ten years ago deviate from the “no hearing impairment” category during the decade transitioning from their 50s to 60s.

Conclusion:
Hearing screening for early detection and intervention is desirable for individuals in their 50s and older.

SY1-3

Precision medicine for syndromic hearing loss

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Approximately 50% of hearing loss in children is attributable to genetic causes, and about 30% of these cases are classified as syndromic hearing loss, in which hearing impairment is accompanied by other symptoms. To date, over 300 distinct syndromes associated with hearing loss have been identified, many of which involve multiple causative genes. Furthermore, there are numerous types of syndromic hearing loss that occur in adulthood. Because of such diverse heterogeneity, the prevalence of diseases and causative genes for syndromic hearing loss remain have not been fully characterized. Accurate epidemiological data are essential to establish the best clinical practice and health policy related to syndromic hearing loss. So, the primary objective of this presentation was to elucidate the clinical and genetic characteristics of syndromic hearing loss in the Japanese population, based on our accumulated data from genetic diagnoses of hearing impairment.

Genetic testing plays a pivotal role in achieving accurate diagnoses for syndromic hearing loss. The second purpose of this presentation is to discuss the improvement of the practical utility of genetic data in the following contexts. Early genetic diagnosis enables pre-symptomatic prediction or timely detection of severe complications. Even for conditions with mild to moderate symptoms, early identification of the genetic causes facilitates timely therapeutic interventions, developmental support, and psychosocial counseling, thereby improving quality of life and reducing psychological stress. A clear understanding of the underlying pathophysiology by genetic diagnosis also aids clinicians in selecting optimal treatments and empowers patients to engage more positively with ongoing care. Accurate determination of recurrence risks depending on the identified genetic causes supports family planning through genetic counseling. Furthermore, recent advances in novel medicine have been increasingly highlighting the significance of precise genetic diagnosis in the management of syndromic hearing loss.

Currently, comprehensive genetic testing such as next-generation sequencing (NGS) is widely used in clinical practice, which requires vast amount of genetic data. In the context of syndromic hearing loss, even whole genome or whole exome sequencing may be necessary in some cases, further increasing the data volume. In recent years, computer programs associated with database and artificial intelligence (AI)-based approaches have become more valuable in supporting the interpretation and use of genetic data. The third purpose of this presentation is to introduce our recent approaches to use genetic data for precision medicine in the field of syndromic hearing loss with such new resources and tools.

SY1-4

Withdrawn

SY1-5

Risk Factors and Predictors of Middle-Ear Effusion in Children with Cleft Lip and Palate Before and After Palatal Repair: A Retrospective Analysis

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Background: Previous studies have primarily evaluated postoperative middle-ear outcomes following palatoplasty and ventilation tube insertion (VTI), with a focus on patient age and cleft severity. However, few have investigated the influence of cleft sidedness and variations in Furlow-based palatoplasty techniques. This study aimed to assess the presence of otitis media with effusion (OME) before and after palatoplasty, with or without VTI, and to identify factors associated with OME, including baseline patient characteristics, cleft sidedness, and surgical approach.
Method: We retrospectively analyzed 86 children with cleft palate or cleft lip and palate who underwent palatoplasty at our hospital from October 2017 to December 2021, with at least 2 years of follow-up evaluating middle-ear outcomes.
Results: Age on palatoplasty date, sex, congenital anomalies, and cleft severity were not significantly associated with preoperative OME. Complete clefts showed a higher OME incidence than incomplete cleft palate in univariable analysis, but not in multivariable analysis. The utilization rate of Furlow palatoplasty combined with hard palate repair increased with increasing cleft severity. Neither the choice of palatoplasty technique nor cleft sidedness was significantly associated with the presence of OME before palatoplasty or with the development of OME after palatoplasty. Postoperative OME rates were similar between children with OME undergoing VTI and those without OME treated by palatoplasty alone.
Conclusions: Cleft sidedness and surgical technique did not influence OME before and after palatoplasty. Ventilation tube insertion is beneficial for patients with OME but may be unnecessary in those without prior effusion.

Symposium 2 Otology 2

SY2-1

Surgical Strategies for Congenital Auricular Deformities

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Microtia is a congenital anomaly characterized by a small or absent external ear, with an estimated incidence in Japan of 6,000–10,000 individuals. It is more frequent in males, predominantly on the right side, and occurs unilaterally in 90% of cases. While usually non-hereditary, the deformity is evident at birth and typically first recognized by obstetricians. Although referrals to plastic surgeons have increased, otolaryngologists remain central in ongoing auditory evaluation, early detection of cholesteatoma, and consideration of surgical indications for hearing restoration.

Auricular reconstruction is usually performed after nine years of age, when ear growth stabilizes. At our hospital, plastic surgeons reconstruct the auricle using rib cartilage. The initial stage involves repositioning the earlobe, removing residual cartilage, and inserting a carved cartilage framework into a subcutaneous pocket, followed by ear elevation six months later. Because microtia often coexists with external auditory canal (EAC) atresia or stenosis, close monitoring is required. EAC cholesteatoma, sometimes discovered after reconstruction, can cause severe infections necessitating removal of the reconstructed ear. Therefore, otologic surgery must be carefully planned in coordination with future auricular reconstruction.

Recent progress in hearing rehabilitation has broadened treatment options. Cartilage conduction hearing aids, developed in Japan, are compact, lightweight, and suitable even in EAC atresia, offering good sound quality with simple fixation. Similarly, ADHEAR® provides a cosmetically acceptable, adhesive-based solution, though with limited output. In addition, bone conduction and implantable devices such as BAHA®, Osia®, and VSB® are increasingly available, giving patients greater choice.

Nevertheless, when surgical improvement of hearing is feasible, device dependence may be reduced. In microtia cases, middle ear anomalies such as a Malleus bar are often present. Endoscopic approaches may allow access to the middle ear if the EAC is preserved, though significant anomalies can limit outcomes. In some cases, EAC reconstruction is technically difficult, requiring individualized judgment. Importantly, incision placement during otologic procedures must be planned to avoid compromising subsequent auricular reconstruction.

In summary, surgical strategies for congenital auricular deformities demand close collaboration between otologists and plastic surgeons, balancing functional hearing restoration with successful auricular reconstruction.

SY2-2

Cochlear implantation in patients with aberrant cochlear aperture

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The cochlear aperture is the bony opening at the base of the modiolus where nerve fibers and blood vessels penetrate from the cochlea to the internal auditory canal. It may occur alone, or may develop in combination with various inner ear malformations, such as incomplete partition type I (IP-I), incomplete partition type III (IP-III), and cochlear hypoplasia. In a broader sense, common cavity also represents another type of inner ear malformation with defected separation between the inner ear and the internal auditory canal. Cochlear implantation in patients with these inner ear malformations constitutes a surgical challenge because of a higher rate of complications, particularly CSF gusher. In addition, special considerations should be given to the selection of electrodes. In this talk, I will present my experience regarding how I evaluate, counsel and perform surgeries in these patients.

SY2-3

Acupuncture in Inner Ear Disorders: The 3-M Bridge — Mechanisms, Models, Medicine—From Neuroplasticity and Clinical Relief

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Background: Inner ear disorders such as tinnitus or deafness—possibly arising from diverse etiologies including noise trauma or specific conditions such as sudden sensorineural hearing loss (SSNHL)—are prevalent worldwide and impose substantial burdens on quality of life and healthcare systems. Current management strategies, ranging from multiple pharmacological treatments, different psychological interventions to variable rehabilitative approaches, often yield inconsistent outcomes, leaving many patients with persistent symptoms. These limitations have stimulated interest in complementary approaches such as acupuncture, which has been widely practiced in East Asia for ear-related disorders.
Rationale: Acupuncture may confer therapeutic benefit through autonomic modulation, enhancement of cochlear microcirculation, and anti-inflammatory or antioxidant effects. Preclinical evidence supports neuromodulatory and otoprotective properties, providing a biological rationale for clinical application.
Methods: At China Medical University Hospital, translational investigations were conducted in both animal models and randomized controlled trials (RCTs). In animal studies, electroacupuncture (EA) was applied at acupoints including Zhongzhu (TE3) and Ermen (TE21). Serial auditory evoked potentials (AEP) were recorded to assess the auditory neuroplasticity, while noise-induced hearing loss (NIHL) models were used to examine the role EA by auditory brainstem responses (ABR), cochlear hair cell survival, oxidative stress markers, and apoptotic signaling. In clinical trials, patients with chronic tinnitus or SSNHL were randomized to genuine or sham acupuncture for 12 weeks (24 sessions). In the SSNHL RCT, patients received either standard steroid therapy alone or steroids plus adjunctive acupuncture, allowing evaluation of acupuncture as an add-on treatment.
Results: In animal experiments, EA induced early prolongation of AEP latencies, suggesting transient central auditory modulation, with partial reversibility over days. In NIHL models, EA attenuated ABR threshold shifts, reduced oxidative stress, and preserved cochlear hair cells. In the tinnitus RCT, EA reduced subjective tinnitus loudness but showed no significant improvement in psychological indices; dropout was higher in the sham group. In the SSNHL RCT, adjunctive acupuncture did not improve hearing thresholds beyond steroids but was associated with significant improvements in dizziness and tinnitus perception.
Conclusions: From bench to bedside, acupuncture demonstrated neuromodulatory effects and symptomatic benefits in inner ear disorders, particularly tinnitus and dizziness. Although objective hearing recovery in SSNHL was not achieved, its role as an adjunctive therapy to steroids suggests potential value in comprehensive patient management. Larger multicenter RCTs are warranted to confirm efficacy and refine patient selection.

SY2-4

Prognostic Value of Initial Hearing Severity in Otitis Media with ANCA-Associated Vasculitis: A Retrospective Cohort Study

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Objective: Otitis media with antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (OMAAV) frequently causes progressive and irreversible hearing loss, yet prognostic factors remain unclear. This study aimed to identify clinical and laboratory parameters predictive of hearing outcomes, with particular attention to pre-treatment hearing level.
Methods: We retrospectively analyzed 45 ears from 24 patients with OMAAV treated at a tertiary referral center between 2011 and 2020. All patients were followed for more than 1 year. Standard treatment consisted of corticosteroids with or without immunosuppressive agents. Pure-tone audiometry results were collected at diagnosis and final follow-up. Final hearing was categorized as good (≤30 dB) or poor (>30 dB) based on the average air-conduction threshold. Potential prognostic factors were evaluated using receiver operating characteristic (ROC) analysis and multivariate logistic regression.
Results: The mean pre-treatment hearing level was 62.5 dB. Twelve ears (26.7%) achieved a final hearing level of ≤30 dB. Patients with good outcomes were significantly younger and had lower C-reactive protein (CRP) levels and better pre-treatment hearing. ROC analysis demonstrated excellent predictive accuracy of pre-treatment air-conduction thresholds (AUC 0.946). A cutoff value of 50 dB provided optimal sensitivity (91.7%) and specificity (84.8%) for predicting favorable outcomes. Univariate logistic regression identified pre-treatment hearing ≤50 dB, CRP ≤1.4 mg/dL, and age ≤68 years as significant predictors. In multivariate analysis, only pre-treatment hearing ≤50 dB remained independently associated with prognosis (OR = 33.6, $p < 0.01$). Other factors, including ANCA status, systemic involvement, treatment intensity, and time to therapy, showed no significant associations.
Discussion & Conclusions: Pre-treatment hearing severity is the most powerful predictor of long-term auditory outcomes in OMAAV. These findings highlight the importance of early recognition and prompt treatment before progression to profound hearing loss. Notably, systemic involvement or treatment regimen did not significantly affect prognosis, suggesting that stratification of therapeutic intensity should be based primarily on initial hearing level rather than systemic disease activity. Given that OMAAV often progresses rapidly, careful evaluation of persistent otitis media with effusion or unexplained hearing loss is essential. Prospective multicenter studies are warranted to confirm whether more intensive immunosuppressive therapy in patients with severe hearing impairment can improve outcomes.

SY2-5

The 2023 clinical practice guidelines for Bell's palsy and Hunt syndrome in Japan

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Intrduction

In 2011, the Japan Society for Facial Nerve Research (JSFNR) published a clinical practice guide for Bell's palsy and Hunt syndrome, which had been used throughout Japan. Now, twelve years later, with an increase in the number of clinical articles, the JSFNR conducted a systematic review of these articles, acquiring new evidence. Based on this review, they published updated clinical practice guidelines in 2023. Here, we show a summary of these new guidelines.

Summary of the Guidelines

1. Administration of systemic standard dose steroid (PSL 1mg / kg)
 ・Bell's palsy: strongly recommended.
 ・Hunt syndrome: weakly recommended.
2. Intratympanic steroid administration after systemic steroid administration for cases of severe palsy.
 ・Bell's palsy and Hunt syndrome: weakly recommended.
3. Antivirals
 ・Bell's palsy: weakly recommended.
 ・Hunt syndrome: strongly recommended.
4. Facial nerve decompression surgery for cases of severe palsy.
 ・Bell's palsy and Hunt syndrome: weakly recommended.
5. Rehabilitation
 ・Bell's palsy and Hunt syndrome: weakly recommended.
6. Acupuncture
 ・Bell's palsy and Hunt syndrome: weakly recommended.

Discussion

This systematic review has yielded several new pieces of evidence. In particular, it should be noted that, although weak, there is evidence on intratympanic steroid administration, rehabilitation and acupuncture for the first time in the global guidelines. However, systematic reviews must be updated regularly.

SY2-6

The auditory working memory performance of preschool children with hearing impairment

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Purpose:

This study investigates how the degree of bilateral hearing loss and various early intervention strategies affect auditory working memory performance in preschool children with hearing impairment.

Method:

Participants were preschool-aged children with hearing impairment. Parents completed the *Listening Experience and Early Intervention Survey for Preschool Children with Hearing Loss*, providing data on daily listening experiences, use of hearing devices, and early intervention services. A retrospective analysis was conducted using audiological reports and auditory working memory assessments from an auditory-verbal therapy program. The data were analyzed to explore associations among the studied variables.

Results:

Fifty-eight children (29 boys, 29 girls; mean age = 4.72 ± 1.13 years, range: 3–6 years) participated. Hearing loss ranged from mild to profound. A significant negative correlation was found between the degree of bilateral hearing loss and auditory working memory performance ($r = –.519$, $p < .001$), indicating that greater hearing loss was associated with poorer memory outcomes. Among early intervention variables, only the average number of therapy hours per week showed significant predictive power ($r = –.291$, $p = .027$), suggesting that excessive intervention may contribute to learning fatigue. Children with more severe hearing loss tended to receive more therapy hours, indicating a possible interaction between hearing loss severity and intervention intensity.

Conclusion:

Quantitative measures alone are insufficient to explain auditory working memory outcomes in children with hearing loss. Clinical interventions should be tailored to each child's hearing profile and assessment results, with attention to the effectiveness of hearing devices and the quality of auditory input to optimize memory development.

Symposium 3 Head and Neck 1 (TORS TOVS)

SY3-1

Endoscopic Laryngo-Pharyngeal Surgery

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Early detection of the laryngo-pharyngeal cancer is important because it not only improves survival rate but also minimizes functional loss of swallowing and speech. We have reported that narrow band imaging (NBI) combined with magnifying endoscopy is useful in detecting early superficial pharyngeal cancers, which are difficult to detect with a standard endoscopy. For such cases, we are performing endoscopic laryngo-pharyngeal surgery applying endoscopic submucosal dissection technique which is increasingly used for early esophageal cancer. Endoscopic laryngo-pharyngeal surgery for early pharyngeal cancer allows excellent survival and the preservation of swallowing and voice functions. The detail of the pre-operative evaluation, operative procedure, and functional outcome of the treatment will be presented.

SY3-2

Indications and Limitations of Transoral Videolaryngoscopic Surgery for Pharyngeal and Laryngeal Cancers

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In Japan, it has become widely recognized that genetic polymorphisms of alcohol-metabolizing enzymes underlie field cancerization, leading to multiple lesions of esophageal and laryngopharyngeal squamous cell carcinomas. In oropharyngeal cancer, there has been an increasing trend of human papillomavirus (HPV)-positive cases. According to the Head and Neck Cancer Registry of Japan, the proportion of early-stage (≤T2) hypopharyngeal cancers increased from 47.0% in 2011 to 59.0% in 2021, while the proportion of transoral surgeries rose from 23.4% to 40.0%. The growing number of early cancers, in which laryngopharyngeal function preservation is increasingly expected, provides an important background for the development of transoral surgeries unique to Japan.

Transoral videolaryngoscopic surgery (TOVS), developed by Shiotani et al., employs a laparoscopic surgical system and a distending laryngoscope. This approach allows en bloc resection of primary lesions under excellent visualization with a videoendoscope in the structurally complex laryngopharynx. The main indications are Tis–T2 and selected T3 lesions of oropharyngeal, hypopharyngeal, and supraglottic laryngeal cancers, as well as resectable rT1–rT2 radiation failure cases and selected T3–4 after induction chemotherapy. Patients with resectable lymph node metastases undergo neck dissection, whereas major contraindications include cricoarytenoid fixation, extensive circumferential invasion, bilateral arytenoid involvement, and cartilage or deep muscle invasion.

The 5-year disease-specific survival and larynx preservation rates were 92.4% and 91.4% in de novo hypopharyngeal cancer, 95.0% and 94.7% in supraglottic cancer, and 78.5% and 82.5% in salvage cases. In elderly patients ≥75 years, both disease-specific survival and larynx preservation reached 100%, demonstrating favorable outcomes even in this population.

Postoperative complications included bleeding (6.0%) and emergency tracheostomy (3.4%), while swallowing function was preserved in 92.9% of patients.

TOVS offers specific advantages, particularly in hypopharyngeal cancer, including smaller instruments, preservation of tactile sensation, and reduced invasiveness by avoiding tracheostomy. Favorable long-term oncological and functional outcomes have been reported, with the added benefits of sparing radiation therapy and safe use in elderly patients. Thus, TOVS represents an effective and minimally invasive treatment option for early laryngeal and pharyngeal cancers in Japan.

SY3-3

Transoral Robotic Surgery and Neck Dissection for Hypopharyngeal Cancer: Long-Term Prognostic Factors and Survival Outcomes

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Background: Transoral robotic surgery (TORS) with neck dissection has emerged as an organ-preserving treatment for hypopharyngeal cancer since a decade ago. This study analyzes long-term prognostic factors to improve management.
Material and Methods: From October 2010 to August 2023, 48 patients with T1-T3 hypopharyngeal cancer, without prior upper aerodigestive tract cancer or irradiation, underwent TORS and neck dissection with/without adjuvant chemoradiation. Perioperative parameters, pathology, adjuvant therapy rates, and survival outcomes were retrospectively analyzed.
Results: Among 48 patients, 37.5% had T1, 45.8% had T2, and 16.7% had T3 tumors. Complete tumor resection was achieved in all cases. Pathologic staging showed 50% had early-stage (I/II) and 50% had late-stage (III/IV) disease. Radiotherapy was spared in 47.92% of cases. After a mean follow-up of 5.9 ± 3.5 years, 5-year overall survival and disease-specific survival rates were both 77%, with a recurrence-free survival rate of 69%. Recurrence was significantly associated with pathologic stage, N stage, and extra-nodal extension ($p<0.05$). Fifteen patients died, with only two (13.3%) due to local recurrence, one (6.7%) from unrelated causes (Flu), seven (46.7%) from distant metastases, and five (33.3%) from secondary primary cancers.
Conclusion: TORS with neck dissection had low primary recurrence, achieving a 5-year overall survival of 77%. Distant metastases and secondary malignancies remain major causes of mortality.
Keywords: hypopharyngeal cancer; organ preservation; survival rate; transoral robotic surgery; extra-nodal extension

SY3-4

Swallowing outcomes in head and neck cancer patients treated with neoadjuvant chemotherapy followed by TOS or TOVS in head and neck cancer

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With advances in therapy, the survival rate of head and neck cancer has improved. However, quality of life—particularly swallowing function—has become increasingly important. To optimize both survival and functional outcomes, a new treatment paradigm is needed. Recently, the role of induction or neoadjvuant chemotherapy followed by surgery, with or without adjuvant treatment, has been actively explored. Since 2018, our department has incorporated induction chemotherapy into the treatment strategy for selected head and neck cancer patients. We have observed that patients receiving induction chemotherapy followed by conservative surgery, like TOS or TOVS are more likely to achieve better swallowing function and overall quality of life.
Nevertheless, induction chemotherapy is not yet widely recognized or accepted as a standard treatment for head and neck cancer. Based on our experience, it could be considered as part of a new treatment paradigm, aiming not only to improve survival but also to preserve functional outcomes and enhance patients' quality of life.

SY3-5

The Impact of Neoadjuvant Chemotherapy in Patients of Hypopharyngeal Cancer Undergoing Transoral Laser Microsurgery

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Traditionally, total laryngectomy has been the standard treatment approach for advanced hypopharyngeal cancers. However, this method results in the loss of the larynx, leading to a deterioration in the quality of life for patients. Over the past two decades, a combination of chemotherapy and radiotherapy (CRT) has become more popular, but high severe late toxicities have been reported, including laryngeal and pharyngeal dysfunction.

Transoral laser microsurgery (TLM) has emerged as an alternative organ-preserving treatment method for several decades. Initially applied primarily to early-stage cancers, with the introduction of the concept of neoadjuvant chemotherapy (NACT), TLM is now being utilized for advanced-stage hypopharyngeal cancers. The main purpose of using NACT is to induce tumor shrinkage, followed by TLM to excise the tumor with margins adjusted according to the extent of the shrunken tumor. This approach may reduce the need for postoperative radiotherapy (RT) or decrease the RT dosage if necessary, potentially enhancing the quality of life after treatment.

Since 2016, two cycles of NACT with the docetaxel, cisplatin, and 5-fluorouracil (TPF) regimen has been administered for bulky laryngeal and pharyngeal tumors. The clinical response rate of primary tumors can achieve up to 89% (16/18), including a 33% complete response and a 56% partial response rate. However, patients receiving NACT with TPF regimens require hospitalization for at least 5 days. Furthermore, 66% of the patients experienced severe neutropenia (grade 3 and 4).

In recent years, the NACT regimen has shifted from the TPF regimen to the DCU regimen (docetaxel, cisplatin, and Ufur) for two cycles. The advantages of the DCU regimen include outpatient department (OPD) treatment, no need for port-A insertion, comparable tumor response (95%), and a lower rate of severe neutropenia (18%). Most of the tumors can be excised with en bloc resection under TLM after NACT.

This presentation will share our experiences with NACT followed by TLM for hypopharyngeal cancers.

SY3-6

New concepts of TORS in Head and Neck Cancer

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Transoral robotic surgery (TORS) has emerged as one of the most significant innovations in head and neck surgery over the past two decades. Compared with conventional laryngeal microsurgery, the Da Vinci robotic system provides a superior surgical field, enables precise suturing and resections in anatomically challenging areas, and allows true bimanual manipulation that more closely matches the surgeon's intent.

Since its approval by the U.S. Food and Drug Administration in 2009, the clinical indications for TORS have steadily expanded—from oropharyngeal cancer to selected lesions of the larynx, hypopharynx, and parapharyngeal space. This expansion, however, must be supported by high-quality evidence to ensure that oncologic and functional outcomes remain comparable to, or better than, traditional open or endoscopic approaches. Our hospital introduced the Da Vinci system in 2017, initially performing only four cases per year. After eight years of continuous development, the program now handles nearly 160 cases annually, including resections of diverse head and neck tumors as well as sleep surgery procedures.

Looking ahead, we anticipate that TORS will further shape the future of head and neck oncology in Taiwan, not only by improving survival but also by enhancing postoperative quality of life. With continued technological refinement and broader clinical adoption, TORS may shift from an innovative option to a standard component of comprehensive cancer care. Our study suggests that TORS provides similar oncologic outcomes to definitive CCRT in oropharyngeal cancer patients. Additionally, the lower radiation dose after TORS may help reduce treatment-related side effects. These results may serve as a valuable reference for future treatment guidelines in oropharyngeal cancer. Although robotic surgery is not currently covered by Taiwan's national health insurance and involves significant out-of-pocket costs, this has not diminished patients' willingness to undergo the procedure.

Symposium 4 Rhinology 1 (Allegy, Rhinositis, NPs)

SY4-1

Assessment of patient satisfaction with dupilumab for chronic rhinosinusitis with nasal polyps

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Dupilumab, an anti-interleukin-4/interleukin-13 receptor-alpha monoclonal antibody, is effective for severe and recurrent chronic rhinosinusitis with nasal polyps (CRSwNP). However, patient satisfaction with dupilumab has not been sufficiently investigated. We performed a multi-center, cross-sectional study of patients with CRSwNP treated with dupilumab who were recruited from March 2022 to April 2023 in Japan. Patients were requested to complete the Treatment Satisfaction Questionnaire for Medication-9 (TSQM-9) form, a generic clinical outcome measure for assessing patient satisfaction with medications [2]. Three TSQM-9 domains (effectiveness, convenience, and global satisfaction) were assessed; each domain was scored from 0–100 with higher scores representing higher satisfaction.

In total, 123 patients were included. The median score (interquartile range) was 83.3 (72.2–94.4), 72.2 (66.7–83.3), and 85.7 (71.4–92.9) for the effectiveness, convenience, and global satisfaction domains, respectively. The visit interval (8 vs. 4 weeks, P=0.023) and injection interval (4 vs. 2 weeks, P=0.016) were positively associated with the effectiveness and convenience domain scores, respectively. A higher blood eosinophil rate (P=0.018) and older age (P=0.038) were positively and negatively, respectively, associated with the global satisfaction domain. Olfactory disturbance (visual analogue scale) significantly affected the effectiveness (P=0.010) and global satisfaction (P<0.001). The ratio of patients who needed medications, including systemic corticosteroid (SCS), for CRSwNP symptoms was significantly reduced after dupilumab treatment (P<0.001 for all), and 73 of 123 patients (59.3%) did not require other medications for CRSwNP after dupilumab treatment.

Before the approval of dupilumab for treating CRSwNP, we reported on the drug treatment satisfaction in 300 Japanese CRSwNP patients who were treated with other drugs such as anti-leukotrienes and macrolides (Okano M, Kondo K, et al. Allergol Int. 2021). In that survey, the mean score±standard deviation was 54.2±16.0 for the effectiveness domain, 62.9±15.7 for the convenience domain, and 57.5±15.4 for the global satisfaction domain; all of these scores were significantly lower than the scores in the present study.

In conclusion, these results suggest that patient satisfaction with dupilumab for CRSwNP is high, especially among younger patients with a higher blood eosinophil rate. Since the effectiveness and convenience domain scores were higher in patients with a longer injection interval, it appears clinicians can reduce the frequency of injection for patients with a stable condition.

SY4-2

Combined Use of Biologic Agents and Macrolides as Personalized Postoperative Therapy for Mixed-Type Chronic Rhinosinusitis with Nasal Polyps in Taiwanese Patients

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Chronic rhinosinusitis with nasal polyps (CRSwNP) is a heterogeneous disease with distinct inflammatory endotypes and often imposes a significant burden on quality of life. Conventional therapies usually offer limited long-term control in patients with severe disease, particularly those with marked eosinophilic inflammation. The advent of biologic agents targeting type 2 inflammation has provided a powerful tool for disease management. Although biologics have demonstrated efficacy in both randomized controlled trials and real-world studies, their high cost has limited widespread use in Taiwan.

In our previous prospective study, 58.6% of CRSwNP patients (n = 58) were classified as the eosinophilic type (defined as ≥10 eosinophils per high-power field). However, immunohistochemical staining of surgical specimens for CCL-26, tryptase, IFN-γ, TSLP, IL-4, and IL-17A revealed a broad spectrum of cytokine expression, highlighting the predominance of mixed-type inflammation in Taiwanese patients with CRSwNP. For some of these patients, we prescribed a short course of postoperative biologics targeting type 2 inflammation in combination with long-term, low-dose macrolides to address the neutrophilic component. This combined therapy was associated with improved symptoms, reduced endoscopic polyp burden, and lower recurrence rates. The addition of macrolides appeared to provide better control of neutrophilic inflammation, resulting in more balanced postoperative outcomes. Adverse effects were minimal and manageable.

For Taiwanese patients with mixed-type CRSwNP, the combined use of biologic agents and macrolides postoperatively may represent an effective personalized postoperative strategy that targets both eosinophilic and neutrophilic inflammation. This integrative approach has the potential to reduce recurrence and improve quality of life, underscoring the need for future prospective trials to confirm its long-term efficacy and safety.

SY4-3

A New Era of Upper Airway Inflammation Control: Biologics-based Strategies for Refractory Chronic Rhinosinusitis

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Chronic rhinosinusitis is a multifactorial inflammatory disease of the sinonasal mucosa, arising from complex interactions between internal and external factors. Evaluation of the patient's underlying molecular pathophysiology, including the endotype, is essential in guiding optimal treatment strategies. Among these, a predominance of type 2 inflammation is strongly associated with disease refractoriness. Eosinophilic chronic rhinosinusitis, as defined by the Japanese Epidemiological Survey of Refractory Eosinophilic Chronic Rhinosinusitis (JESREC study), represents a subtype of refractory chronic rhinosinusitis characterized by dominant type 2 inflammation. In recent years, biologic agents targeting type 2 inflammation have emerged as promising therapeutic options for uncontrolled chronic rhinosinusitis with nasal polyps, with accumulating evidence supporting their clinical efficacy. In Japan, dupilumab, an anti–interleukin-4 receptor alpha monoclonal antibody, and mepolizumab, an anti–interleukin-5 monoclonal antibody, have been approved for patients with chronic rhinosinusitis with nasal polyps who are refractory to conventional treatment. We have previously reported, based on real-world clinical data, the high efficacy of dupilumab in patients with eosinophilic chronic rhinosinusitis who experienced postoperative recurrence. Furthermore, we demonstrated that dupilumab suppresses eosinophilic inflammation by inhibiting eosinophil recruitment at the lesion site and reducing the inflammatory burden within both the sinonasal tissue and the airway lumen.

In this presentation, I will provide an overview of the current status of biologic therapies for intractable chronic rhinosinusitis, including eosinophilic chronic rhinosinusitis, in Japanese clinical practice, and discuss their efficacy and future perspectives for management, drawing on real-world clinical evidence.

SY4-4

Functional and Aesthetic Rhinoplasty

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The fact that functional and aesthetic disorders of the nose almost always coincide makes functional-esthetic rhinoplasty become the most demanding procedures in facial plastic surgery.

Incomplete preoperative analyses, improper planning and undue surgical procedures will cause airway problems after septorhinoplasty. Altered airway resistance, residual septal deformities, synechiae and webs, collapsing valve, intrusion by the lateral crura of the lower lateral cartilage, or excessive alar base narrowing.

In order to success in functional-aesthetic rhinoplasty, a facial plastic surgeon should start with a detailed analysis of the presenting anatomical and physiological problems, taking into account fundamental factors like the age, gender, skin and connective tissue status of the patient. Furthermore, the surgical approaches should be as minimal invasive as possible and any unnecessary tissue trauma should be prevented.

Surgeons ought to address themselves to the effects of the septal cartilage on the shape of the external nose. Deformed septal. cartilage causes crooked nose, tension nose, saddle nose, tip and columellar deformities.

Several physiological considerations in functional-aesthetic rhinoplasty are worthy of remark:

a. Preservation and reconstruction of a nasolabial angle between 90° to 100° can guide the inspired air equally into the functional area in the nasal cavity.
   Over-expansion of the ostium internum will reduce the nozzle effect of nasal vestibule and cause turbulent flow. Thus proper expansion in surgery of the ostium internum should be planned.
   Since the caudal margin lower lateral cartilage construct the upper area of the inner nostril, the concave shape of the ostium internum should be maintained while making caudal resections at the lower lateral cartilage.

SY4-5

Epithelial contribution to the disease mechanism of eosinophilic chronic rhinosinusitis

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Eosinophilic chronic rhinosinusitis (ECRS) is a refractory rhinosinusitis that often results in the recurrence of nasal polyps even after appropriate surgical intervention. Histopathologically, it is characterized by marked eosinophilic infiltration within the nasal polyps. However, its underlying pathophysiology remains incompletely understood. Traditionally, epithelial cells have been classified into ciliated, secretory, and basal cells, but recent advances in single-cell RNA sequencing have revealed the presence of various epithelial subpopulations. Among these, basal cells have been reported to play a pivotal role in the pathogenesis of ECRS. In this presentation, we explore the pathophysiology of ECRS from the perspective of epithelial cells, with a particular focus on basal cells.

SY4-6

Post-Radiotherapy Sinonasal Dysfunction in Patients with Nasopharyngeal Carcinoma

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Nasopharyngeal carcinoma (NPC) is highly prevalent in East and Southeast Asia, with radiotherapy being the cornerstone of treatment. As survival rates continue to improve, increasing attention is being paid to long-term functional complications affecting the upper airway. This presentation focuses on sinonasal dysfunction in NPC patients following radiotherapy.

Importantly, we also compare the differential impacts of proton versus photon therapy on sinonasal function, based on recent clinical observations and emerging evidence. Proton therapy's dose-sparing effect may potentially reduce long-term mucosal toxicity, but challenges remain in post-treatment surveillance and functional preservation. Clinical findings, endoscopic observations, and management strategies are reviewed, along with considerations for optimizing patient quality of life. This presentation highlights the need for comprehensive, multidisciplinary follow-up in NPC survivorship care.

Symposium 5 Innovation

SY5-1

Designing Tech Solutions for People with Hearing Loss

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Communication in society is primarily conducted through spoken language. For people with hearing loss, this creates persistent disadvantages in many situations. Even with hearing aids or cochlear implants, they often remain at risk of missing essential information, highlighting the need for complementary solutions that ensure equal access.

To address this challenge, we developed D-HELO (Device for HEaring LOss) in collaboration with Technological Development of Information-processing, Co., Ltd. (TDI) and Fujitsu Limited, supported by the Japan Agency for Medical Research and Development (AMED, 2022–2024). D-HELO is implemented as an Apple Watch application that utilizes the built-in microphone to detect siren acoustic patterns in real time and convert them into a vibration alert and its display on the panel. Development incorporated continuous feedback from people with hearing loss and their supporters, resulting in a design that was both technically effective and socially acceptable. Following these efforts, the application has been released for public download, offering a concrete model of inclusive emergency preparedness.

Building on the recognition achieved through this development and its social implementation, we are now conducting a new project collaborating with Magnolia Unitas: a standalone speech-to-text display panel. Unlike D-HELO, this system is designed for use in a variety of everyday situations and provides real-time transcription of spoken announcements. That can extend its relevance and impact.

Our experience demonstrates that the essence of accessibility lies not only in device development but also in social design. Technologies must be designed for ease of adoption, seamless integration into existing infrastructures, and acceptance through social co-creation. By engaging users, communities, industry partners, and policymakers, such solutions can move beyond isolated innovations to become sustainable parts of society.

In conclusion, inclusive technology for people with hearing loss should be pursued as both engineering innovation and social integration. Through co-creation and societal embedding, these solutions can bridge the gap between emergency safety and everyday communication, ensuring that no one is left behind.

SY5-2

Novel Approaches for High-Resolution Cochlear Imaging: Intracochlear Probes (Optical Frequency Domain Imaging and Intravascular Ultrasound) and Terahertz Waves

Takeshi Fujita

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Observing the internal structure of the living cochlea remains extremely challenging due to its deep location within the temporal bone and the delicacy of its microanatomy. To overcome these limitations, we are developing novel imaging technologies and introduce two distinct and innovative approaches. The first approach explores the feasibility of minimally invasive intracochlear imaging using probes originally developed for cardiovascular applications: Optical Frequency Domain Imaging (OFDI) and Intravascular Ultrasound (IVUS). In a human cadaveric study, these probes were inserted through the round window into the scala tympani. OFDI provided superior spatial resolution (≤20 μm), enabling clear visualization of microstructures like the basilar membrane, Reissner's membrane, and the organ of Corti. In contrast, IVUS offered greater tissue penetration and a wider field of view at a lower resolution. Crucially, both modalities successfully identified basilar membrane disruptions, demonstrating their potential for intraoperative monitoring during procedures such as cochlear implantation. The second approach is a non-destructive, high-resolution three-dimensional (3D) imaging technique using terahertz (THz) waves. THz radiation, which occupies the electromagnetic spectrum between 0.1 and 10 THz , is non-ionizing due to its low photon energy and is highly sensitive to the hydration levels and cellular-scale structures of biological tissues. This method successfully visualized the internal structure of a mouse cochlea with micrometer-level spatial resolution (~20 μm), overcoming the diffraction limit of THz waves. By combining 2D THz time-domain images acquired via the Time-of-Flight (ToF) method with an unsupervised learning algorithm (k-means clustering) for structural information extraction, we achieved a high-fidelity 3D reconstruction of the cochlear anatomy.

SY5-3

Unraveling the genetics of auditory neuropathy: From diagnosis to gene therapy

Chen-Chi Wu

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Auditory neuropathy (AN) is a complex and heterogeneous disorder affecting approximately 10% of children with sensorineural hearing impairment. Its diverse pathogenesis results in variable outcomes with conventional treatments such as hearing aids and cochlear implants. This presentation will highlight two critical aspects of our work: (1) the application of advanced sequencing technologies to improve the diagnosis of AN and (2) the development of gene therapy strategies for treatment. We will demonstrate how comprehensive diagnostic approaches, integrating short-read and long-read sequencing with detailed medical history, audiological examination, and imaging, have significantly enhanced the identification of underlying genetic etiologies, leading to more effective clinical management. Furthermore, we will present our progress in gene therapy targeting specific genetic subtypes of AN, including those associated with PJVK , OPA1 , WFS1 , and OTOF mutations, in both experimental models and clinical trials.

SY5-4

Surgical management of primary/ recurrent tumor and post-treatment complications nasopharyngeal carcinoma

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Nasopharyngeal carcinoma (NPC) is one of the common head and neck cancers in Taiwan. Although NPC is a very radiosensitive tumor and 5-year overall survival rates up to 80% can be obtained using contemporary concurrent chemoradiotherapy. Unfortunately, some patients may still suffer from some post-teated complications such as otitis media, chronic sinusitis, or osteoradionecrosis or even develop locoregional recurrence. Salvage surgery locoregionally, surgical treatments for otitis media with effusion or chronic sinusitis, or endoscopic debridement in the skull base may be required for managing these post-treated sequelae. For these reasons, the development of more tailored treatment can ultimately improve clinical outcomes or quality of life for these unfortunate patients. In this presentation, I will demonstrate the surgical experience in our center and review the contemporary state-of-art approaches in the surgical management for several diseases such as the nasopharyngeal recurrence, cervical relapse, post-choanal atrea, and skull base osteoradionecrosis following the initial NPC primary treatments.

Due to the recognition of the importance of Epstein-Barr virus (EBV) in the pathogenesis of NPC, EBV-derived biomarkers have been discovered for NPC-related management. For instance, EBER has been widely used in the detection of EBV genome and NPC existence in the nasopharynx or neck metastasis. Furthermore, the utility of cell-free EBV DNA load may not only serve for detection of NPC but may also have value for prediction of prognosis before treatment or monitoring tumor relapse in the post-treated routine follow-up. In this presentation, I'll also briefly share our experience to use EBV-related blood markers in the disease screening and treatment stratification for NPC.

SY5-5

Photoimmunotherapy for cancer: Mechanisms and Clinical Applications

Ryuhei Okada

Department of Head and Neck Surgery, Institute of Science Tokyo, Japan

Photoimmunotherapy (PIT) is an emerging cancer treatment modality that utilizes antibody-photoabsorber conjugates (APCs) activated by excitation light. The photoabsorber used is IRDye700DX (IR700), which is conjugated to monoclonal antibodies targeting specific tumor-associated antigens. Upon intravenous administration, APCs selectively bind to cancer cell surfaces. When exposed to excitation laser light, the IR700 moiety undergoes a physicochemical transformation from hydrophilic to hydrophobic, leading to rapid aggregation of APCs on the cell membrane. This process induces physical disruption of the membrane, resulting in an influx of extracellular water and subsequent necrotic cell death.
Importantly, this form of cell death is considered immunogenic. The damaged cancer cells release neoantigens along with damage-associated molecular patterns (DAMPs), such as heat shock proteins (HSPs) and calreticulin, which contribute to the activation and maturation of dendritic cells. These immunostimulatory effects facilitate the initiation and propagation of the cancer-immunity cycle, potentially enhancing systemic antitumor immune responses.
In Japan, PIT using cetuximab-IR700 has been approved and reimbursed under national health insurance since 2021 for patients with locally recurrent or locally advanced head and neck cancer. In addition to clinical applications, PIT is being actively investigated in preclinical studies. These include combination therapies with immune checkpoint inhibitors, which aim to potentiate antitumor immunity, as well as PIT strategies targeting immunosuppressive cells within the tumor microenvironment.
This presentation will review the fundamental mechanisms underlying PIT, its clinical development, and recent advances in preclinical research. Photoimmunotherapy represents a promising therapeutic approach for cancer.

SY5-6

Cell Therapy for Soft Tissue Fibrosis in the Head and Neck

Tsung-Lin Yang

National Taiwan University, Taiwan

Soft tissue fibrosis, the excessive buildup of fibrous connective tissue in the head and neck region, represents a serious clinical problem that often stems from uncontrolled inflammation and wound healing, leading to substantial morbidity and functional impairment such as oral submucous fibrosis, which severely limits jaw movement and affects eating and speaking abilities. Despite its significant impact, current treatments remain limited, highlighting the urgent need for new therapeutic approaches, which led this study to investigate the use of soft tissue progenitor cells as a promising cell-based therapy solution. These specialized cells, successfully isolated from human soft tissue samples across diverse donor populations, demonstrated dual therapeutic potential through their remarkable ability to enhance extracellular matrix remodeling via paracrine effects that coordinate the breakdown of damaged fibrous tissue and promote healthy tissue creation, while in vivo studies using animal models of oral submucous fibrosis confirmed that transplantation of these cells significantly suppressed fibrotic processes and reduced characteristic fibrous tissue buildup. The findings establish soft tissue progenitor cells as strong candidates for developing future cell therapies for head and neck fibrosis, as their dual capacity to regulate fibrosis and promote tissue regeneration simultaneously makes them a powerful and innovative therapeutic tool for treating patients with these debilitating disorders.

Symposium 6 Laryngology

SY6-1

Radiation-Associated Dysphagia in Head and Neck Cancer: Latest Findings and Future Direction

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The treatment approaches for head and neck cancer (HNC) include surgery, radiotherapy (RT), and chemotherapy. Although RT is effective against cancers, it can damage nearby normal tissues, resulting in radiation-associated dysphagia (RAD). Chemoradiotherapy can result in impaired coordination of swallowing phases due to reduced laryngeal elevation, delayed laryngeal closure, loss of tongue strength, loss of sensation in the pharynx and larynx and prolonged oral and pharyngeal time during swallowing. Our recent preliminary study demonstrated that shear wave elastography presented a significant increase in neck stiffness following radiotherapy. Moreover, a greater reduction in hyoid bone movement was associated with post-RT dysphagia, suggesting that impaired laryngeal elevation may contribute to RAD. Laryngeal elevation, supported by the thyrohyoid and stylohyoid strap muscles in the neck, plays a crucial role in protecting the airway from aspiration of during swallowing. Cervical radiation-induced fibrosis (RIF) can lead to strap muscle fibrosis, impairing laryngeal elevation and causing RAD in HNC survivors. Currently, the only effective treatment for RAD is rehabilitation. Moreover, no functional or histological assays are available for the evaluation of RIF of strap muscles. In the preliminary manner, we subjected mice to a single dose of irradiation to their necks, and evaluate the temporal changes in inflammation and fibrosis levels in strap muscles at three time points. By verifying the inflammation and fibrosis levels in cervical RIF model over the short term, an effective mouse model of RAD may be developed in the near future. Additionaly, we investigated whether a nerve injury mouse model involving unilateral transection of both the hypoglossal and vagus nerves would induce oropharyngeal dysphagia (OPD), as evidenced by aspiration detected using BALF analysis and scintigraphy. This preliminary study proved that micro-aspiration pneumonia due to OPD was detected following unilateral hypoglossal and vagus nerve transection in mice, suggesting validation of the oropharyngeal micro-aspiration mouse model with nerve transection. Currently, we are investigating whether mouse RAD due to OPD would be validated using this method of detecting the micro-aspiration with BALF analysis and scintigraphy. Interestingly, our preliminary data demonstrated that radiation induced fibrosis in the mouse strap muscle was attenuated with vagus nerve stimulation based on the immune-nuero interaction. Elucidation of this mechanism and application this concept to the RAD induced aspiration is currently ongoing. Hopefully we can apply these devices to the various radiation induced fibrosis in larynx and pharynx in the near future.

SY6-2

Phonosurgery for Elite Vocal Perfomer

Yusuke Watanabe

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Objectives: Vertical locations of vocal fold mucosal lesions (VFMLs) vary along the free edge. As the vertical contact area of vocal folds (VFs) depends on the vocal register, lesions may occur in the contact area of more frequently used vocal registers. This study investigated the cause of location variations by comparing the vertical sites of VFMLs in singers of both sexes with different music genres.

Results: Upper lesions were most common among F-classical singers (73.9%), whereas lower lesions were most common among M-classical (90.0%) and M-rock (60.6%) singers. Among lesions localized to a single site, lower lesions were most common among F-rock singers (37.0%). F-classical singers had significantly more upper lesions than the other groups ($P < .001$). M-classical singers had significantly more lower lesions than female singers of any genre ($P < .001$).

Conclusion: Upper lesions were most common among F-classical singers who mostly used the head voice. Lower lesions were most common among singers who mainly used the modal voice. This study suggests that sex, the dominant vocal register used for singing, and mechanical stress on VFs influence the vertical site of VFMLs.

SY6-3

Oncological and functional outcomes and management of transoral CO2 laser microsurgery (TLM) for laryngeal cancer

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Background: In the treatment of laryngopharyngeal cancer, it is necessary to consider the post-therapeutic laryngeal function as well as tumor control. Therefore, although transoral CO2 laser microsurgery (TLM) is indicated up to some T3 laryngeal cancer, we prefer to perform type2-4 cordectomy for early glottic cancer or salvage after (chemo)radiation therapy. Considering postoperative laryngeal function, we strive to preserve normal tissue as much as possible by resecting close to the tumor. As a result, there are cases in which pathological diagnosis reveals close and/or positive margins. The management of these cases is still an ongoing matter of discussion.
Methods: In the present study, we retrospectively examined the relationship between margin diagnosis and long-term tumor control as well as postoperative vocal function in patients with early-stage glottic cancer who underwent TLM. For vocal function, auditory-perceptual assessment, aerodynamics, acoustics, videostroboscopy, and self-assessment questionnaires were performed.
Results: Patients after TLM showed comparable voice quality and QOL to those after radiotherapy. Among 107 patients, 49 (45.8%) had close/positive margins. The recurrence-free survival rate was significantly lower in the close/positive margin group. Anterior commissure involvement was a significant risk factor for recurrence. The median recurrence time for the close/positive margin group was 18.5 months, which is similar to that of the negative margin group. Laryngeal preservation and disease-specific survival rates were comparable between groups, with rates exceeding 95%.
Conclusions: Patients with close/positive margins in early glottic cancer showed similar disease-specific survival and laryngeal preservation rates to those with negative margins, despite lower recurrence-free survival rates, suggesting that a follow-up approach is sufficient.

SY6-4

Precision-Targeted Injection Laryngoplasty and Longitudinal Biomaterial Effects Evaluation Using High-resolution Ultrasonography in a Rat Model

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Objective. Current laryngeal injection models rely on the transoral route and are suboptimal due to limited view, narrowed working space, and the need to sacrifice animals for investigation of the injectables. In the present study, a novel surgical model for laryngeal intervention therapy utilizing an ultra-high frequency ultrasound imaging system was proposed. Based on this system, we developed a systemic evaluation approach, from guidance of the injection process, documentation of the injection site of the material, to in vivo longitudinal follow-up on the augmentation and medialization effect by analyzing the ultrasonography data.
Study Design. In vivo animal study.
Setting. Academic institution.
Methods. Injection laryngoplasty with hyaluronic acid under ultrasonography guidance was performed on Sprague-Dawley rats one week after induced unilateral vocal paralysis. Ultrasonography was performed at preinjection, immediately postinjection, on Day 2, Day 7 and then weekly for 4 weeks to obtain measurements, including the glottic area, angle between bilateral folds, and vocal fold width ratio. Laryngoscopic and histologic studies were also performed.
Results. Unilateral injections to the paralyzed fold were successfully performed as demonstrated by ultrasonographic, laryngoscopic, and histologic studies. The width ratio was significantly increased after injection for 4 weeks, while the glottic airway area was unchanged.
Conclusion. Here, a novel surgical model for laryngeal injection utilizing ultrasonography in rats was established. In addition to providing visual guidance for precise localization of the injection, robust documentation of the treatment effect was also demonstrated. This methodology could be beneficial for screening therapeutic agents for treatment of glottic insufficiency.

SY6-5

Developing a Novel Neck-Wearable Piezoelectric Sensor for Habitual Snoring

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Sleep apnea syndrome (SAS) is a highly prevalent and potentially serious condition. However, the accuracy of existing home-based snoring screening tools is often compromised by environmental noise interference. To address this challenge, our team has developed an intelligent diagnostic system that integrates an innovative neck-wearable piezoelectric sensor (NPS) with a deep learning model. This wearable sensor overcomes environmental noise via direct skin contact and synchronously records dual physiological signals: snoring vibrations (70-250 Hz) and carotid artery pulsations (0.1-1.5 Hz). The initial dataset comprised 1167 silence, 1304 snoring, and 399 noise samples from 20 participants. Using a hybrid deep learning model comprising a one-dimensional convolutional neural network and gated-recurrent unit, the model identified snoring and apnea/hypopnea events, with sleep phases detected via pulse wave variability criteria. It also measures carotid pulsation metrics such as pulse rate and the standard deviation of normal-to-normal intervals, achieving 85% accuracy in sleep phase determination against polysomnography. The model's efficacy in predicting severe SAS was assessed in the remaining 40 participants, achieving snoring detection rates of 0.88, 0.86, and 0.92, with respective loss rates of 0.39, 0.90, and 0.23. Classification accuracy for severe SAS improved from 0.85 for total sleep time to 0.90 for partial sleep time, excluding the first sleep phase, demonstrating precision of 0.84, recall of 1.00, and an F1 score of 0.91. This user-friendly technology automates the measurement of critical snoring metrics, transforming SAS diagnosis and treatment by enhancing accessibility and efficiency for healthcare providers and patients. Future studies should focus on expanding the sample size, diversifying the patient population, and external validations in real-world settings to enhance the robustness and applicability of the findings.

Symposium 7 Thyroid

SY7-1

Chemotherapy and Targeted Therapies for Anaplastic Thyroid Cancer

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Anaplastic thyroid cancer (ATC) is one of the most aggressive and lethal malignancies in head and neck oncology, accounting for less than 2% of thyroid cancers in Japan but contributing disproportionately to thyroid cancer–related mortality. ATC predominantly affects elderly patients, and prognosis remains dismal, with a 1-year survival rate of approximately 18%.

According to Japanese guidelines, treatment strategies are determined by disease extent. For locally advanced resectable disease, surgery followed by adjuvant radiotherapy or chemoradiotherapy is recommended. For unresectable or recurrent/metastatic disease, systemic therapy represents the cornerstone of management. Cytotoxic chemotherapy, particularly weekly paclitaxel with or without cisplatin, provides modest tumor shrinkage and occasionally enables conversion to local therapy or salvage surgery, although durable responses are uncommon.

The therapeutic landscape has been reshaped by the advent of molecular targeted therapies. In Japan, lenvatinib has demonstrated clinical activity, while BRAF V600E–positive ATC has become a paradigm for precision medicine. Dabrafenib plus trametinib and, more recently, encorafenib plus binimetinib have achieved high response rates and meaningful survival benefit, leading to their approval for clinical use. These advances have extended survival for patients with distant metastatic disease, representing a major step forward compared with the pre-targeted therapy era. Importantly, systemic therapy may also downstage locally advanced tumors, creating opportunities for salvage surgery in carefully selected patients. This integration of systemic and surgical approaches underscores the evolving role of conversion therapy in ATC.

Ongoing clinical trials are evaluating combinations of targeted agents, immune checkpoint inhibitors, chemotherapy, and radiotherapy to overcome resistance and further improve outcomes. Future perspectives emphasize biomarker-driven strategies, comprehensive genomic profiling, and multimodal treatment approaches aimed at extending survival and enhancing quality of life.

This presentation will highlight three key aspects: the survival benefit achieved in recurrent/metastatic ATC through molecular targeted therapies, the emerging potential of salvage surgery in locally advanced cases, and the prospects provided by ongoing clinical trials and future integrated treatment strategies.

SY7-2

Optimal RLN management for invasive thyroid cancer with nerve monitoring

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Recurrent laryngeal nerve (RLN) dysfunction after thyroid surgery can cause vocal cord paralysis, which interferes with voice and can potentially interfere with breathing. The use of intraoperative neural monitoring (IONM) has been widely accepted by thyroid surgeons as a useful technology for improving RLN identification and voice outcomes, facilitating neurophysiological research, educating and training surgeons, and reducing surgical complications and malpractice litigation.

The RLN is also one of the most frequent sites of invasion for locally aggressive thyroid cancer. Nerves that appear morphologically intact to a surgeon's eye are not always functionally intact, and nerves invaded with malignancy may maintain electric stimulability. With the application of IONM, the surgeon can evaluate the RLN's real-time functional status and incorporate the EMG information in surgical decision-making to optimize invaded RLN management (Preservation vs. Resection). At times, there may be partial or total loss of signal (LOS) during surgical dissection, indicating that RLN stress or injury has occurred. The surgeon can also evaluate the surgical maneuver that produced the impending or actual RLN injury. By elucidating the mechanism of RLN injury and the surgical pitfalls, IONM helps surgeons to improve the surgical techniques, predict the recovery outcome, and plan intra- and postoperative management. This talk gives an overview of the application of IONM during thyroid surgery, with a focus on the Optimal RLN management for invasive thyroid cancer.

SY7-3

Navigation-assisted Transoral Videolaryngoscopic Surgery for Retropharyngeal Lymph Node Dissection in Papillary Thyroid Carcinoma

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Retropharyngeal lymph node (RPLN) metastasis from papillary thyroid carcinoma (PTC) is uncommon, yet it presents significant diagnostic and therapeutic challenges due to its proximity to the internal carotid artery, cranial nerves, and skull base, and is often associated with unfavorable prognosis. The retropharyngeal space lies deep within the neck, where adequate exposure and working space are inherently limited. Although the transcervical approach has long been considered the standard for RPLN dissection, it is highly invasive and may compromise both functional and cosmetic outcomes. More recently, transoral approaches have gained attention as minimally invasive alternatives, offering reduced morbidity and the advantage of avoiding cervical scars. However, the restricted surgical field necessitates precise identification of metastatic nodes adjacent to critical anatomical structures, where limited visualization may increase the risk of incomplete resection or complications. At our institution, we have applied navigation-assisted transoral videolaryngoscopic surgery (TOVS) to selected cases of RPLN metastasis from PTC. Integration of a navigation system (Medtronic Japan Co., Ltd., Tokyo, Japan) provided real-time anatomical orientation, enabling safe and smooth access to the retropharyngeal space while minimizing the risk of injury to the carotid artery and cranial nerves. Using this technique, we successfully achieved complete resection of a metastatic RPLN, with no postoperative dysphagia or cranial nerve dysfunction observed.

In this presentation, we will demonstrate the surgical technique with operative video and discuss its clinical implications. Our experience suggests that navigation-assisted TOVS represents a promising minimally invasive option for selected patients with RPLN metastasis from PTC, offering a favorable balance between oncological safety, functional preservation, and cosmetic benefit.

SY7-4

From VANS to Robotic Excellence: A Surgeon's Stepwise Journey in Thyroid Surgery

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With the advancement of technology, robotic surgery has been increasingly adopted across a wide range of surgical specialties. In the field of otolaryngology, one of the most well-known applications is Transoral Robotic Surgery (TORS), which aids in the removal of tumors in the oral cavity and pharynx, as well as in sleep surgery. However, applying robotic techniques to other head and neck regions—particularly the thyroid—presents a greater challenge and a steeper learning curve for ENT surgeons. Endoscopic thyroidectomy, especially the Video-Assisted Neck Surgery (VANS) approach, which is widely practiced in Japan, serves as an important stepping stone toward robotic precision. VANS not only helps bridge the gap in laparoscopic instrument handling—a skill often underemphasized in ENT training—but also allows surgeons to become familiar with the endoscopic field of view and different surgical concepts. Gaining experience with VANS before transitioning to robotic thyroidectomy can reduce the risk of unnecessary conversion to open surgery and enhance surgical confidence. This presentation will share our clinical experience and explore the applications and indications of various endoscopic and robotic approaches in the management of thyroid diseases.

SY7-5

From TORS to BABA: Expanding the Frontiers of Robotic Head and Neck Surgery

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"From TORS to BABA" represents not just a change in surgical technique, but the evolution of robotic surgery in addressing the diverse challenges of head and neck disease.

Transoral Robotic Surgery (TORS) has revolutionized surgical access to deep-seated lesions of the oropharynx and laryngopharynx. By using the natural orifice of the mouth, TORS enables precise tumor resection while avoiding external scars. In sleep surgery, it has broadened treatment options for obstructive sleep apnea with minimal morbidity. Today, TORS is widely recognized in Taiwan as a hallmark of minimally invasive, function-preserving innovation.

The Bilateral Axillo-Breast Approach (BABA), pioneered in South Korea, extends this philosophy to thyroid surgery. BABA robotic thyroidectomy offers a symmetrical and scarless route, preserving both functional outcomes and cosmetic appearance. This is particularly valuable for younger patients or those for whom a cervical scar may carry significant social or psychological impact.

BABA thyroidectomy is performed through four small incisions (0.8–1.2 cm each) placed in the axillae and areolae. Following carbon dioxide insufflation to create a subcutaneous working space, the da Vinci robotic system allows precise dissection using 3D magnification and articulating instruments. These features improve identification of nerves and vessels, facilitating preservation of the recurrent laryngeal nerves and parathyroid glands.

In 2023, the Department of Otolaryngology at E-Da Hospital, Taiwan, performed 56 BABA robotic thyroidectomies. Operative times were longer due to limited case numbers, and hospital stay was not shortened; however, no patient required conversion to open surgery for bleeding or hematoma. Sharing operative videos helps bridge the learning curve and promotes wider adoption of this scarless alternative to conventional thyroidectomy.

Conclusion

The transition from TORS to BABA illustrates how robotic surgery continues to expand the frontiers of head and neck surgery — from oncologic safety to functional preservation, and now to aesthetic and psychosocial well-being.

Symposium 8 Imaging

SY8-1

Fluorescence imaging for parathyroid grand

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Introduction:
Near-infrared (NIR) autofluorescence imaging has emerged as a promising adjunct for intraoperative identification of the parathyroid glands. This technique requires no exogenous agents and enables real-time, noninvasive visualization. Since parathyroid-specific autofluorescence was first reported in 2011, its application has expanded. Given the similarity of excitation and emission spectra to indocyanine green (ICG), we applied a handheld ICG imaging system (pde-neo, Hamamatsu Photonics) in clinical practice.
Methods:
Thirty-six patients undergoing thyroidectomy were prospectively evaluated. Each suspected parathyroid gland was assessed by both visual inspection and NIR autofluorescence, with diagnoses confirmed by histopathology. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated for both modalities. Autofluorescence patterns were also examined in primary and secondary hyperparathyroidism.
Results:
For intraoperative identification of normal parathyroid glands, NIR autofluorescence and visual inspection showed comparable performance (sensitivity 97.1% vs. 100%; specificity 87.5% vs. 85.0%). However, NIR autofluorescence demonstrated significantly higher sensitivity than visual inspection in detecting parathyroid tissue within resected thyroid or peritracheal fat specimens (82.9% vs. 61.0%, $p < 0.05$). This advantage was particularly relevant for identifying glands suitable for autotransplantation.
In primary hyperparathyroidism, autofluorescence was consistently detected before and after resection (100%). In contrast, in secondary hyperparathyroidism, autofluorescence was observed preoperatively in only 33% of lesions, suggesting limited reliability for multi-gland hyperplasia.
Conclusions:
NIR autofluorescence imaging provides accurate intraoperative identification of parathyroid glands, equivalent to visual inspection, and significantly improves detection in resected specimens, thereby facilitating autotransplantation. While highly effective in primary hyperparathyroidism, its reduced sensitivity in secondary hyperparathyroidism highlights a limitation for multi-gland exploration. NIR autofluorescence represents a valuable adjunct in endocrine surgery, with potential to improve preservation of parathyroid function and surgical outcomes. Further studies are warranted to optimize its application.

SY8-2

Prognostic significance of 3D-FLAIR MRI in Sudden SNHL

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The specific causes and mechanisms behind sudden sensorineural hearing loss (SNHL) are not fully understood. However, using three-dimensional fluid-attenuated inversion recovery (3D-FLAIR) imaging with 3 Tesla MRI makes it possible to detect high signals in the inner ear on pre- or post-contrast-enhanced MRI. In 2008, we reported that patients with high signals in the cochlear on pre-contrast 3D-FLAIR had a significantly worse prognosis for hearing loss by using the 8-channel head coil. However, recently it has become possible to use a heavily T2-weighted 3D-FLAIR with a 32-channel head coil for more precise evaluation of the inner ear. This imaging method allows for more sensitive detection of contrast findings and quantitative assessment of different regions of the cochlea due to the increased resolution. In this study, 19 patients diagnosed with severe sudden SNHL were evaluated by MRI, and the signal intensity ratio (SIR) was measured for each cochlear region (basal and apical middle turn) and compared with hearing levels for each. Corresponding to the cochlear region, the average of three frequencies, low (250, 500, and 1000 Hz) and high (2K, 4K, and 8KHz), was also used to evaluate hearing levels. In all groups, higher SIR tended to be associated with a worse hearing prognosis. Higher SIR in the basal turn of pre-contrast MRI was associated with significantly worse hearing prognosis in the high-frequency region. Higher SIR in the apical turn of contrast-enhanced MRI was associated with significantly worse hearing prognosis in the low-frequency region. A high signal on pre-contrast MRI may indicate high protein concentration in the inner ear, and high SIR values may indicate severe impairment of basal turn. High signal on contrast-enhanced MRI indicates disruption of the blood-labyrinth barrier, and disruption of the blood-labyrinth barrier in the apical middle turn is thought to cause more severe inner ear damage. These results suggest that quantitative measurement of pre- and post-contrast MRI in the other SNHL can also be evaluated as consistent with auditory physiological assessment.

SY8-3

Rapid Fluorescent Vital Imaging Techniques for Olfactory Epithelium Assessment

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Olfactory epithelium (OE) degeneration is a hallmark of various disorders, including age-related and post-viral olfactory dysfunction. Traditional methods for in vivo detection and evaluation of OE within the nasal cavity are limited by invasiveness and poor spatial resolution. This presentation introduces a novel rapid fluorescent vital imaging approach, leveraging the unique enzyme expression profiles of OE to enable real-time assessment.
Two distinct fluorescence probes—coumarin and gGlu-HRMG—are topically applied, exploiting the differential activities of cytochrome p450 and γ-glutamyltranspeptidase in olfactory versus respiratory epithelium. Upon enzymatic conversion, these substrates yield specific fluorescent signals within OE duct and sustentacular cells, allowing the comprehensive mapping of neurogenic OE. Experimental models demonstrated the absence of fluorescence in metaplastic respiratory epithelium and its reappearance upon regeneration of OE post-injury, supporting their utility in monitoring degeneration and therapeutic effects.
This method holds promise for the minimally invasive, quantitative evaluation of OE, significantly broadening the scope of clinical practice. The application of this technology in humans is currently underway, aiming for future clinical integration.

SY8-4

Ultrasound in ENT: A Game-Changer in Daily Surgical Practice

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Physical examination of the head and neck is a routine practice for ENT surgeons. Palpation is the first step, and its accuracy depends heavily on the examiner's clinical experience. Ultrasound, often compared to a stethoscope for the heart, provides real-time imaging that identifies the exact tumor location, its composition, and any changes in adjacent tissues and organs. This technology helps narrow the experience gap between junior and senior doctors.
The next step is tissue confirmation. Open surgery remains the traditional method for obtaining a pathological diagnosis and guiding treatment strategies. However, challenges such as multiple comorbidities, trismus with a difficult airway, the need to avoid general anesthesia, and the risk of nerve injury in the salivary and thyroid glands can limit its feasibility. Surgeon-performed ultrasound offers a minimally invasive alternative for tissue sampling. Over the past decade, ultrasound-guided core biopsy has helped overcome many diagnostic challenges without the need for open surgery.
In summary, ultrasound not only reduces the experience gap between junior and senior doctors but also provides experienced surgeons with critical insights for more precise and effective patient management. It benefits both ENT surgeons and patients, establishing itself as an essential tool in the era of precision medicine.

SY8-5

Developing the A-mode Ultrasonography for Sphenoid Sinusitis Detection

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Objective
It is often challenging to diagnose sphenoid sinusitis quickly. Endoscopic examinations have low sensitivity and specificity, and a computed tomography (CT) scan is typically required to confirm the diagnosis. Given the sphenoid sinus's proximity to numerous vital anatomical structures, sphenoid sinusitis can lead to ocular and cerebral complications. Therefore, it is crucial to develop a rapid clinical tool for both diagnosis and treatment monitoring in sphenoid sinusitis. While A-mode ultrasound has been used for several decades to diagnose maxillary and frontal sinusitis, its application in sphenoid sinusitis has not yet been explored. Our team has developed a specific ultrasound probe for the sphenoid sinus and evaluated its efficacy.

Methods
Through computer-aided engineering (CAE), we simulated the sound field of a piezoelectric crystal with a center frequency of 5 MHz using the acoustics module in COMSOL Multiphysics®. The crystal was later cut to an appropriate size and filled between a matching layer as well as a backing layer to fabricate the ultrasound probe. Additionally, a 3D-printed sphenoid sinus model was created using a composite of hydroxyapatite and photopolymer resin. To simulate varying degrees of sinus effusion, glycerol solutions of different volume concentrations were sequentially introduced into the model. The fabricated probe was then used to measure the corresponding ultrasound signals.

Results
The ultrasound probe consisted of a lead zirconate titanate (PZT) crystal, a matching layer made of silver powder, and a backing layer composed of conductive silver adhesive. The probe had a diameter of 2.8 mm and an analog focal length of 35 mm. The measured center frequency was 4.69 MHz, with a bandwidth of 49%. A back wall echo was detected at approximately 20 mm from the probe. The 3D sphenoid sinus phantom testing showed an inverse trend between the glycerin concentration and the amplitude of the echo signal.

Conclusion
The novel A-mode ultrasound probe we developed has significant clinical potential for the real-time diagnosis of sphenoid sinusitis.

Symposium 9 Basic/Translational Research

SY9-1

Translating immune microenvironmental biomarkers into photoimmunotherapeutic strategies for head & neck cancer

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Accumulating evidence indicates that the efficacy of conventional cytotoxic therapies, such as chemotherapy and radiotherapy, is not solely attributable to direct tumor cell killing but is also shaped by the induction of anti-tumor immune responses. In this context, photoimmunotherapy has emerged as a novel modality that combines targeted cytotoxicity with the potential to stimulate systemic anti-tumor immunity. Preclinical studies have demonstrated that photoimmunotherapy not only achieves local tumor control but also promotes immunogenic cell death, thereby enhancing host immune surveillance. To explore the immune microenvironmental determinants of photoimmunotherapy responsiveness in head and neck cancer, we performed multiplex immunohistochemical analyses of tumor specimens (N = 8). In patients who exhibited favorable responses, pretreatment tumors were enriched with $CD39^+$ T cells, a subset considered to represent tumor antigen–experienced lymphocytes. These cells were preferentially localized within the peritumoral stroma adjacent to tumor cell nests, suggesting a poised immune contexture capable of mounting an effective response upon therapeutic activation. Our findings highlight the potential utility of immune microenvironmental biomarkers, particularly $CD39^+$ T-cell density and spatial distribution, in guiding patient selection for photoimmunotherapy. By integrating biomarker-driven stratification with translational insights from immuno-oncology, photoimmunotherapy could be optimized as a precision therapeutic strategy for head and neck cancer.

SY9-2

In vivo reprogramming unveils the trigger of reversible anaplastic transformation in thyroid cancer

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Anaplastic thyroid carcinoma (ATC) is one of the most aggressive human malignancies and is often thought to arise through anaplastic transformation from papillary thyroid carcinoma (PTC). While genetic alterations such as BRAF and TP53 mutations have been implicated, the mechanisms driving this dedifferentiation process remain poorly defined. Here, we demonstrate that human ATC is characterized by a loss of thyroid-specific differentiation markers and a gain of pluripotency-associated features, accompanied by sustained MAPK/ERK signaling. Drawing parallels with induced pluripotent stem cell generation, we established a genetically engineered in vivo reprogramming mouse model in which forced expression of reprogramming factors (Oct3/4, Sox2, Klf4, and c-Myc; OSKM) in Braf-mutant thyroid epithelium induced anaplastic transformation, even in the absence of Tp53 mutation. The resulting tumors exhibited molecular and histological features highly similar to human ATC, including suppression of Ttf-1, elevated ERK activity, and expression of LIN28 and SALL4. A conventional Braf/Tp53-mutant ATC model displayed comparable traits. Importantly, reintroduction of TTF-1 into both human and murine ATC cells not only suppressed tumor cell proliferation but also restored PTC-like differentiation, despite the presence of BRAF and TP53 mutations. These findings indicate that embryonic reprogramming plays a pivotal role in anaplastic transformation and that redifferentiation into a less aggressive, lineage-restored state may be therapeutically achievable.

SY9-3

Preclinical study on pathogenesis and molecular targeted therapy for inner ear blast injuries

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The ear is the organ that is most sensitive to blast overpressure, and ear damage is most frequently seen after blast exposure. Blast overpressure to the ear results in sensorineural hearing loss, which is untreatable and is often associated with a decline in the quality of life. we developed an animal model to demonstrate the pathophysiological and structural changes in the inner ear that replicate pure sensorineural hearing loss associated with blast injury using laser-induced shock wave (LISW) without any conductive hearing loss.

Our results indicate that threshold elevation of the auditory brainstem response (ABR) after blast exposure was primarily caused by outer hair cell dysfunction induced by stereociliary bundle disruption. The bundle disruption pattern was unique; disturbed stereocilia were mostly observed in the outermost row, whereas those in the inner and middle rows stereocilia remained intact. In addition, The ABR examination showed a reduction in wave I amplitude without elevation of the threshold in the lower energy exposure group. This phenomenon was caused by loss of the synaptic ribbon. This type of hearing dysfunction has recently been described as hidden hearing loss caused by cochlear neuropathy, which is associated with tinnitus or hyperacusis.

However, cochlear synaptopathy is untreatable. Currently, research on the treatment of cochlear synaptopathy is being conducted worldwide. In this presentation, we will introduce recent research conducted by our group on therapeutic approaches for blast-induced inner ear injury. Inhibition of rho-associated coiled-coil containing protein kinase (ROCK), a serine-threonine protein kinase, has been reported to have neuroprotective and regenerative effects on synaptic pathways in the nervous system, including those in the inner ear. We previously demonstrated the regenerative effect of the ROCK inhibitor, Y-27632, on an excitotoxic cochlear nerve damage model in vitro. Next, we aimed to validate the effect of ROCK inhibition on mice with cochlear synaptopathy induced by laser-induced shock wave (LISW) in vivo. After the elevation of ROCK1/2 expression in the damaged cochlea was confirmed, we administered Y-27632 locally via the middle ear. The amplitude of wave I in the auditory brainstem response and the number of synapses in the Y-27632-treated cochlea increased significantly. These results clearly demonstrate that ROCK inhibition has a promising clinical application in the treatment of cochlear synaptopathy, which is the major pathology of sensorineural hearing loss.

SY9-4

The potential of wireless in-ear earphone swallow acoustic detection and machine learning

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Swallow is an important physiological process for health and quality of life. Swallowing evaluation involves complex processes to integrate results from questionnaires, clinical and instrumental assessments by otolaryngologists or speech language pathologists. Dysphagia screening in contrast is a process performed by general health care personnel to identify individuals who are likely to have dysphagia, and early referral can be arranged. Novel tools using acoustic analysis of swallowing sounds through cervical auscultation have been reported but not widely applied clinically due to limitations in stable sound collection, user-friendly detection platforms and analysis. A wireless in-ear microphone system was developed and preliminarily applied for in-ear swallow acoustic detection. The detected acoustic signals are transferred wirelessly to a cell phone or notebook computer to allow for subsequent analysis. Our preliminary data demonstrated distinct acoustic patterns for different swallow types and food consistencies. In addition, our preliminary machine learning results support the potential for dysphagia screening. The system has the benefit of minimally invasive, affordable, easy to use in bedside or home settings. Future works will aim on further expanding the swallow acoustic sample collection with detail classification of dysphagia severity for improved machine learning, to hopefully develop a convenient in-ear wireless swallow acoustic detection platform for potential residential tele-screening and monitoring for patients with dysphagia.

SY9-5

Tumor glycosylation as a biomarker and target for immunotherapy in head and neck cancer

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A critical obstacle to successful treatment of head and neck squamous cell carcinoma (HNSCC) has been the lack of biomarkers that predict prognosis and treatment responses. Over the past several years, our team has focused on unraveling the role of aberrant O- and N-glycosylation in regulating oncogenic signaling, microenvironment remodeling, and responsiveness to immunotherapy. Our initial studies identified the O-glycosyltransferase C1GALT1 as a key driver of malignant phenotypes in HNSCC. C1GALT1 directly modifies O-glycans on the EGFR, thereby enhancing ligand binding affinity, receptor phosphorylation, and downstream signaling. Importantly, we identified itraconazole, a widely used antifungal agent, as a pharmacologic inhibitor of C1GALT1 that promoted its proteasomal degradation and potently suppressed tumor growth in xenograft models. These findings established aberrant O-glycosylation as a novel therapeutic target in HNSCC. Building on this foundation, we next explored how tumor O-glycosylation shapes the immune landscape. We showed that truncation of O-glycans in HNSCC cells profoundly reprogrammed the tumor microenvironment. Loss of C1GALT1 promoted M1 polarization of macrophages and enhanced cytotoxic T lymphocyte (CTL) activity, while reducing immunosuppressive cytokine secretion, particularly interleukin-6 (IL-6). We discovered that the stability of IL-6 is regulated by O-glycosylation at threonine 166, linking glycosylation directly to cytokine turnover and immune modulation. Inhibition of C1GALT1 with itraconazole synergized with PD-1 blockade to induce robust tumor regression. These results revealed that O-glycosylation not only drives tumor cell-intrinsic aggressiveness but also orchestrates tumor-immune crosstalk, thereby dictating sensitivity to immune checkpoint blockade. Most recently, we extended our research to N-glycosylation pathways, focusing on the enzyme MGAT5. We demonstrated that MGAT5 catalyzes branched N-glycans on PD-L1, particularly at residues N35 and N200, stabilizing PD-L1 and enhancing its interaction with PD-1. MGAT5 expression protected HNSCC cells from CTL-mediated killing, while patients with MGAT5-positive tumors exhibited superior responses to anti-PD-1 therapy compared to MGAT5-negative counterparts. These findings not only highlight MGAT5 as a predictive biomarker for immunotherapy response but also suggest that targeting branched N-glycans could open new therapeutic avenues.

Collectively, this body of work illuminates the pivotal role of glycosylation in HNSCC biology. By integrating molecular oncology with tumor immunology, we have uncovered novel mechanisms by which glycosyltransferases such as C1GALT1 and MGAT5 govern tumor progression and therapeutic response. Our studies provide a rationale for developing new glycan-targeted strategies to overcome resistance and improve treatment outcomes in HNSCC patients.

Symposium 10 Rhinology 2 (Endoscopic surgery)

SY10-1

Control of Eosinophilic Rhinitis and Sinusitis Centered on Surgery

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Eosinophilic rhinosinusitis is a disease proposed as a recurrent form of rhinosinusitis. The essence of this disease is Type 2 inflammation. While biologic agents targeting Type 2 cytokines are frequently used nowadays, surgery remains a very important treatment option even today. Treatment involves medication and surgery, but the presenter focuses on surgical treatment. This is because the presenter believes it is crucial to achieve the best possible condition through surgery once. This presentation covers preoperative treatment, the surgery itself, postoperative care, and management of recurrence. Thorough surgical execution is the key. We devise packing techniques at the end of surgery to achieve optimal nasal and sinus morphology. Postoperatively, we perform local treatments like nasal irrigation and nasal steroid sprays, with long-term follow-up. For recurrence, we consider short-term steroid use or biological agents. The presentation will focus on surgical techniques and considerations.

SY10-2

Endoscopic Transorbital Approach for Sinonasal lesion

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The endoscopic transorbital approach (ETOA) is gaining popularity in skull base and paranasal sinus surgery. This approach represents a valuable surgical corridor to access various compartments and safely address not only several intracranial spaces, but also paranasal sinus spaces. We sometimes come across some strange cases of paranasal lesions which are far lateral from paranasal sinus spaces, usually obstructed by the mass of orbit. The endoscopic endonasal approaches (EEA) have a limitation to approach beyond the orbit. The ETOA could be one of the solutions in such cases. The ETOA exists in many variants, both from the point of view of invasiveness and from that of the entry point to the orbit, corresponding to the four orbital quadrants: the superior eyelid crease (SLC), the precaruncular (PC), the lateral retrocanthal (LRC), and the preseptal lower eyelid (PS). We could choose one of them according to the lesions. Moreover, multiportal variants, consisting of the combination of the transorbital approach with EEA and the others, are relevant to reach peculiar surgical territories. A thorough understanding of orbital anatomy is essential for endoscopic approach, and careful handling of orbital tissues is crucial to ensure safety and prevent complications. We have some cases operated by the ETOA for paranasal lesions. We would like to discuss the utility and limitation of ETOA through case videos.

SY10-3

Endoscopic sinus surgery for improvement of olfactory dysfunction in eosinophilic chronic rhinosinusitis

Masayoshi Kobayashi

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Eosinophilic chronic rhinosinusitis (ECRS) is a refractory disease and induces conductive olfactory dysfunction in most cases. An endoscopic sinus surgery (ESS) is often applied to cases in which treatment with steroid is not so effective or steroid is difficult to use for its side effects. Critical points of the ESS for improving olfactory dysfunction are to restore airflow of the olfactory cleft and superior meatus of nose and to open the ethmoidal sinus. However, inappropriate operation in olfactory cleft may cause mucosal adhesion and idiopathic olfactory loss. Therefore, delicate and careful manipulation is required. Here we show how to perform ESS for ECRS to improve olfactory dysfunction.

For ECRS cases, full-house ESS is applied to make sinonasal airflow condition better. Since olfactory cleft is narrow and its mucosa bleeds easily, suctioning tools as suction curette and microdebrider are helpful to get clear surgical view and remove polyps in the olfactory cleft. Especially, rectangle microdebrider is useful for safe manipulation in the cleft, preventing damage to the cribriform plate. If many polyps occupied the olfactory cleft and wounded surface is wide after removing polyps, we insert gelatin sponge into the olfactory cleft and inject steroid solution into the sponge to prevent mucosal adhesion and scar formation.

In the ESS cases, 81% of the cases could restore their olfactory function after the surgery. In the cases applied the gelatin sponge-steroid method, 86% of the cases could restore their olfactory function after the ESS.

ESS is useful to restore olfactory function caused by refractory ECRS when using appropriate surgical techniques.

SY10-4

Unilateral and bilateral CRS

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While several papers have been published investigating eosinophil counts and their related outcomes, few have specifically examined the distribution patterns of eosinophils in unilateral and bilateral CRS patients. Herein, we aim to gain a better understanding of eosinophils and its correlation with unilateral and bilateral CRS. Furthermore, we seek to investigate how these findings relate with surgical outcomes.

The research was a retrospective cross-sectional study with patients who underwent endoscopic sinus surgery at the Department of Otorhinolaryngology of Mackay Memorial Hospital, between the years 2014 and 2024. A total of 782 participants with chronic rhinosinusitis were identified for analysis.

Age and gender were found to be significantly associated with laterality. Bilateral chronic rhinosinusitis was more prevalent among males ($p=0.002$) and in older participants ($p=0.027$). The likelihood of having asthma was also found to be higher in patients with bilateral chronic rhinosinusitis ($p=0.006$) as compared to those with unilateral chronic rhinosinusitis. Analysis of smoking and Immunoglobulin E (IgE) count showed no association with CRS laterality in our dataset. The analysis was done based on 572 patients' IgE counts as the test was not routinely taken during the earlier years of the study. The presence of nasal polyps was found to be strongly correlated with bilateral CRS, with a highly significant p-value of <0.001.

The distribution of blood eosinophil counts was analysed in comparison with laterality. A higher percentage of unilateral CRS participants had blood eosinophil counts of <150 cells/μL(56.1%) as compared to whose with bilateral CRS (43.9%). On the contrary, in the group with blood eosinophil counts of ≥ 150 cells/μL, 63.8% had bilateral CRS as compared to 36.2% who had unilateral CRS. Chi-Square analysis comparing these two groups demonstrated that blood eosinophil counts of ≥ 150 cells/μL were significantly associated with a bilateral CRS presentation ($p<0.001$).

In the unilateral CRS group, 72.5% had a tissue eosinophil count of more than 10/HPF, while 79.5% of the bilateral CRS group had tissue eosinophil counts in the same range. A tissue eosinophil ≥ 10 / HPF was found to significantly correlate with bilateral CRS with a p-value of 0.025.

Only 561 out of the 782 participants had both SNOT 0 and SNOT 6 scores and were included in this analysis. It was found that Unilateral CRS patients have better SNOT scores at both baseline and 6 months post-surgery compared to bilateral CRS patients with a p-value of 0.017 and 0.003, respectively.

SY10-5

Consistency between subjective and objective allergic rhinitis

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Background: Allergic rhinitis (AR) diagnosis often relies on either subjective symptom reporting or objective laboratory testing. However, the agreement between these methods and their relationship with symptom burden remain unclear.
Methods: Patient data were analyzed including self-reported AR, serum IgE, Phadiatop titers, allergen-specific CAP assays, and blood eosinophils. Objective AR positivity was defined as IgE >87 /mL, Phadiatop >0.35 kU/L, positive allergen reactivity, or eosinophils >5%. Symptom severity was assessed using SNOT-22 items. Agreement between subjective and objective AR was quantified using accuracy, sensitivity, specificity, predictive values, Cohen's Kappa, and chi-square test.
Results: A total of 175 patients were included. Self-reported AR and objective testing were concordant in 104 cases (59.4%). The confusion matrix identified 37 true positives, 67 true negatives, 36 false negatives, and 35 false positives. Diagnostic performance yielded sensitivity 51.4%, specificity 65.0%, PPV 50.7%, NPV 65.7%, and overall accuracy 59.4%. The Cohen's Kappa coefficient was 0.21 (*fair agreement*), and the chi-square test indicated statistically significant association (p=0.044). Symptom comparison revealed higher burden in self-reported AR versus negatives, particularly for rhinorrhea (2.67 vs 1.99), nasal obstruction (3.93 vs 3.64), fatigue (2.92 vs 2.71), and concentration difficulties (2.53 vs 2.12). Objective AR positivity was associated with smaller differences in symptom scores, indicating weaker alignment between laboratory-based criteria and patient-perceived severity.
Conclusion: Self-reported AR is associated with greater symptom burden but demonstrates only fair agreement with objective markers (κ=0.21, p=0.044). Misclassification occurs in both directions, underscoring the need to integrate subjective and objective assessments for accurate AR diagnosis and management.

Symposium 11 Sleep

SY11-1

Orthostatic dysregulation and sleep–wake disorders in adolescents

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Orthostatic Dysregulation (OD) frequently occurs in adolescents and young adults, presenting with a wide variety of symptoms including headache, dizziness, lightheadedness, fatigue, and difficulty waking in the morning. In this age group, the circadian rhythm tends to be delayed, and lifestyle patterns such as a nocturnal schedule and the use of smartphones before bedtime further contribute to delayed sleep onset. Both patients and their parents often fail to recognize the presence of sleep debt. In circadian rhythm sleep–wake disorders, such as delayed sleep–wake phase disorder and non-24-hour sleep–wake rhythm disorder, internal desynchronization may occur, disturbing the morning orthostatic circulatory response and potentially leading to OD. Thus, sleep disorders and OD are closely related. Approximately 30–40% of patients with OD also have neurodevelopmental disorders, which themselves are often accompanied by circadian rhythm sleep–wake disorders. In addition, conditions such as adjustment disorder of the patients with neurodevelopmental disorders, may lead to a sedentary lifestyle with reduced activity, resulting in deconditioning and abnormalities in the orthostatic circulatory response. We examined 82 patients (28 males, 54 females; aged 12–18 years, median age 17 years) who presented to our clinic with difficulty waking in the morning. We compared 41 patients with OD and 41 without OD. The proportion of school absenteeism was significantly higher in the OD group (51%) than in the non-OD group (27%) ($p = 0.02$). The prevalence of circadian rhythm sleep–wake disorders was also higher in the OD group (37%) compared to the non-OD group (15%) ($p = 0.02$). Similarly, suspected neurodevelopmental disorders were more frequent in the OD group (54%) than in the non-OD group (27%) ($p = 0.01$). During follow-up at our clinic, the proportion of patients showing improvement in OD symptoms was 38% among those with only sleep debt but no circadian rhythm sleep–wake disorder, while none of the patients with circadian rhythm sleep–wake disorders improved ($p < 0.01$). The improvement rate was also significantly higher in patients without neurodevelopmental disorders (47%) compared to those with suspected neurodevelopmental disorders (5%) ($p < 0.01$). Treatment of OD cannot rely on pharmacotherapy alone; cognitive-behavioral therapy is indispensable. In counseling, it is important to respect the patient's perspective and foster motivation. Our findings suggest that sleep patterns and the presence of underlying neurodevelopmental disorders may help predict the likelihood of improvement in orthostatic dysregulation accompanied by difficulty waking in the morning.

SY11-2

Pediatric sleep-disordered breathing

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Obstructive Sleep Apnea (OSA) in children is associated with multiple adverse health outcomes, including poor quality-of-life, autonomic dysfunction, systemic inflammation, gut dysbiosis, unhealthy dietary habits, and mood disorders. Although adenotonsillectomy has been shown to be effective in improving sleep quality in children with OSA, its impact on these complications is still unclear. This topic focuses on: (1) treatment methods for OSA in children, (2) multidisciplinary studies of mood disorders in children with OSA, including quality-of-life, autonomic dysfunction, systemic inflammation, gut microbiome and dietary habits, and (3) improvement of mood disorders after treatment of OSA.

SY11-3

Rhinological approach to OSA in Japan

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In Japan, CPAP and OA therapy have been covered by the national health insurance system for over 20 years. CPAP has become the first-line treatment for adult patients with OSA, and consequently, the number of pharyngeal surgeries such as UP3 has gradually declined. In this country, OSA has been managed and studied primarily by rhinologists, in part because nasal treatment is essential to improving CPAP and OA adherence. Numerous studies in Japan have examined the relationship between nasal obstruction, pharyngeal collapse, and CPAP adherence.

Several studies in Japan have reported that patients intolerant of CPAP had significantly higher nasal resistance values compared with those who tolerated CPAP.
A study of patients newly introduced to CPAP found that one in three had received some form of treatment for nasal disease, and 5.0% of the total cohort had undergone nasal surgery. Conversely, an investigation of the prevalence of SDB in patients with nasal disease who underwent ESS revealed that 9.3% had severe OSA, while 32.0% had moderate-to-severe OSA. The mean ODI score in the ESS group was significantly higher than that in the control group among men, but not among women, indicating that nasal obstruction is a potential risk factor for SDB in male patients.

The breathing route also plays an important role in the mechanism of pharyngeal collapse. Oral flow (OF) measurements during overnight PSG demonstrated that spontaneous arousal-related OF was associated with nasal obstruction, whereas other OF patterns were linked to respiratory events. Coomputational fluid dynamics revealed that airflow velocity and static pressure peaked during oral breathing, suggesting that oral breathing is the primary condition leading to pharyngeal collapse. The airflow during nasal breathing with closed mouth was smooth throughout the whole breathing route, whereas that during nasal breathing with open mouth showed spreading and a disturbed, unsteady stream.

Currently, HNS is in vogue worldwide, ten years ago, the focus was on TORS, and a decade before that, on MMA and soft palate surgery. However, maintaining nasal patency is fundamental to the treatment of OSA. Our priority in OSA management is to establish nasal breathing during sleep—an essential principle emphasized by Dr. Christian Guilleminault. As ENT specialists, we can dive deeply into rhinological pathophysiology and highlight our unique contributions to this field. Show what we have.

SY11-4

Sleep apnea and Alzheimers disease

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Obstructive sleep apnea (OSA) has emerged as a potential modifiable risk factor for Alzheimer's disease (AD). Intermittent hypoxia, oxidative stress, and systemic inflammation may contribute to AD pathogenesis. Our team has conducted studies from basic science to real-world data to explore these links.

Using Taiwan's nationwide database, we found that OSA patients carry a significantly higher risk of developing AD. Transcriptomic analysis further revealed upregulation of immune and inflammatory genes in severe OSA, while surgical treatment improved AD-related biomarkers during follow-up.

In this lecture, we will present our recent findings and share clinical insights, highlighting OSA management as a promising strategy to restore sleep and reduce the risk of neurodegeneration.

SY11-5

Allergy and pediatric sleep apnea

Hirotaka Hara

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Sleep is a critical component of brain development, representing one of the predominant neurophysiological activities during the growth process, encompassing synaptic formation and reorganization. The aforementioned factors have been demonstrated to facilitate emotional regulation, behavioral control, and physical restoration. Consequently, adequate sleep duration and appropriate sleep habits—including a proper sleep environment—are imperative for normal growth and development in children. In instances where symptoms persist despite the implementation of adequate sleep hygiene measures, clinicians must consider the potential presence of sleep-related disorders, including obstructive sleep apnea (OSA).

In recent years, an increase in parental awareness in Japan has resulted in a rise in consultations for children with sleep problems. Pediatric OSA has been demonstrated to be associated with a range of cognitive and behavioral difficulties, including inattention, hyperactivity, and learning disabilities. Additionally, the condition has been linked to physical issues such as growth retardation and nocturnal enuresis. If these conditions remain untreated, they may result in long-term adverse effects on growth and neurodevelopment. The most common etiologies of pediatric obstructive sleep apnea (OSA) are adenoid and tonsillar hypertrophy, which are particularly prevalent in preschool-aged children.

However, recent studies have directed increasing attention to the issue of nasal obstruction resulting from allergic rhinitis, which has been demonstrated to be a triggering factor for the onset of obstructive sleep apnea (OSA) in children. Recent studies suggest a correlation between OSA and cognitive and behavioral problems; however, the apnea–hypopnea index (AHI) itself does not correlate with these outcomes. Rather, the presence of snoring alone is linked to such issues. Consequently, even children who exhibit habitual snoring without meeting diagnostic criteria for OSA should receive proactive treatment aimed at improving nasal airflow and correcting mouth breathing.

In this lecture, I will present a series of clinical experiences that focus on the management of allergic rhinitis. I will then proceed to discuss the role of healthcare professionals in ensuring optimal sleep and development in children.

SY11-6

Myofunctional therapy for snoring and obstructive sleep apnea

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Obstructive Sleep Apnea (OSA) patients experience recurrent partial or complete collapse of the upper airway during sleep. Continuous Positive Airway Pressure (CPAP) is the first-line treatment for moderate to severe OSA, yet studies show that about 40% of patients discontinue CPAP after one year due to poor tolerance. Among the contributing factors to OSA, in addition to upper airway narrowing, impaired muscle function also plays a key role. In recent years, a few studies have explored non-invasive myofunctional therapy (MFT) approaches for OSA, but outcomes remain inconclusive.

In 2014, we applied threshold inspiratory muscle training, which proved effective only in mild to moderate cases. For severe OSA, pathophysiology also involves dysregulation of the cardiorespiratory system. To overcome clinical challenges, in 2017 we developed an innovative therapeutic model addressing both oropharyngeal muscle dysfunction and unstable respiratory control. The study was divided into three phases: (1) reviewing existing evidence on muscle training, (2) establishing a novel, comprehensive rehabilitation protocol, and (3) testing its clinical efficacy.

Since 2020, the Sleep Medicine Center at National Cheng Kung University (NCKU) Hospital has collaborated with the Department of Physical Therapy, College of Medicine, and Institute of Medical Engineering, College of Engineering, to investigate the therapeutic effects of diversified MFT programs combined with training devices for patients with mild, moderate, and severe OSA.

This presentation will discuss the clinical role of MFT (as a standard or adjunctive therapy), and share strategies for selecting appropriate MFT programs to help patients with varying severities of OSA achieve optimized functional outcomes.

Symposium 12 Head and Neck 2 (Onco-Surgical management)

SY12-1

Survival outcome superiority of total pharyngolaryngectomy in comparison with chemoradiotherapy for T4aM0 hypopharyngeal squamous cell carcinoma: A nationwide database study of Japan

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Background. For patients with T4aM0 HPSCC, the guidelines of the National Comprehensive Cancer Network recommend TPL (as category 2A), induction chemotherapy followed by TPL or CRT (as category 3), and CRT (as category 3). [8] However, a previous report described that treatment of T4aM0 HPSCC with CRT results in a low laryngeal preservation rate compared with T1-3 disease. [9] A prospective randomized trial to compare these treatments is practically impossible because of the patient's request for laryngeal preservation. The purpose of this study is to elucidate whether total pharyngolaryngectomy (TPL) or chemoradiotherapy (CRT) provides a better prognostic outcome in patients with T4aM0 hypopharyngeal carcinoma (HPSCC) using a nationwide database.
Methods. All data were obtained from the Head and Neck Cancer Registry of Japan, and information from patients who were newly diagnosed with T4aM0 HPSCC between 2011 and 2015 was extracted. The primary endpoint was disease-specific survival (DSS), and the secondary endpoint was overall survival (OS). The inverse probability of treatment weighting (IPTW) adjustments were used for survival analyses.
Results. Our cohort included 1,143 patients. The TPL and CRT groups included 724 and 419 patients, respectively. Following IPTW adjustments, both the OS and DSS of the TPL group were significantly longer than those of the CRT group ($P = .02$ and $P = .002$, respectively).
Conclusions. Survival superiority was demonstrated for patients with T4aM0 HPSCC treated with TPL compared with those treated with CRT.

SY12-2

Submental flap in palatal defects reconstruction

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The palate separates the oral cavity from the nasal cavity and oropharynx. In addition to palatal tumors, resections involving the retromolar trigone and maxillary alveolar tumors may also result in palatal defects, which in turn affect the patient's breathing, speech, and swallowing functions. Therefore, to help patients return to normal life as early as possible after treatment, palatal reconstruction is a critical issue following such tumor surgeries.
Currently, there is no standardized approach for palatal reconstruction. In general, smaller palatal defects may be managed with obturators, while larger defects require flap reconstruction, most commonly using free flaps.
This article reports our experience over the past few years using the submental flap for palatal defects reconstruction.

SY12-3

Systemic Therapy for Salivary Gland Carcinoma: Current Evidence and Future Perspectives

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Salivary gland carcinomas (SGCs) are rare, histologically diverse malignancies with limited systemic treatment options. In recent years, Japan has established a nationwide consortium for salivary gland carcinoma research, facilitating significant advances from molecular studies to prospective clinical trials.

The 2025 NCCN Guidelines for salivary gland tumors underscore the absence of a single preferred systemic regimen for recurrent, unresectable, or metastatic disease. Several cytotoxic regimens are listed as options, including carboplatin/paclitaxel, which is widely used in Japan due to its feasibility and manageable toxicity. In addition, Japanese and Korean investigators have reported favorable outcomes with cisplatin/docetaxel, contributing important clinical evidence.

The guidelines also emphasize biomarker-driven therapies. For androgen receptor (AR)-positive salivary duct carcinoma (SDC), AR-targeted agents such as bicalutamide and LHRH agonists are included. Recently, clinical trials have demonstrated promising efficacy and safety for next-generation AR antagonists, including apalutamide and darolutamide, in AR-expressing SDC. HER2-directed therapies (e.g., trastuzumab/docetaxel, trastuzumab/pertuzumab) are recommended for HER2-positive tumors, while targeted agents are also listed for *NTRK*, *RET*, *BRAF*, and *FGFR* alterations. Immunotherapy may be considered in tumors with high microsatellite instability or tumor mutational burden, and the importance of comprehensive genomic profiling is increasing to identify such rare but actionable alterations.

Looking forward, global efforts are underway to develop novel therapeutic strategies, including antibody-drug conjugates (ADCs) targeting HER2-low tumors, such as trastuzumab deruxtecan (T-Dxd), as well as ADCs against emerging biomarkers, multi-target kinase inhibitors, and bispecific antibodies. These approaches hold promise for expanding the therapeutic landscape in biomarker-defined subgroups of SGCs.

SY12-4

Molecular analysis of the surgical margin in oral cavity cancer patients

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Background: Histological, tumor-free surgical margin does not guarantee recurrence- free survival in cancer patients. This study investigated the association between microsatellite alteration (MA) in tumor-free surgical margins and local recurrence in patients with oral cavity squamous cell carcinoma (OCSCC).

Methods: Patients with histologically confirmed OCSCC were enrolled in this prospective study. Cancerous specimens, corresponding surgical margins and peripheral blood were obtained. MA was investigated using 6 dinucleotide microsatellite markers. All samples were amplified by polymerase chain reactions, followed by automatic fragment analysis.

Results: MA was identified in 119 specimens (68.0%) from 253 patients. Among them, 137 specimens carried loss of heterozygosity (LOH), whereas 100 specimens had microsatellite instability (MSI). Patients with MSI at the surgical margin had a higher risk of local recurrence on multivariable analysis (OR: 7.156, 95% CI: 4.368 ~ 11.54).

Conclusion: Molecular assessment of surgical margins can help identify patients at risk of local recurrence.

SY12-5

Preliminary outcomes of boron neutron capture therapy for head and neck cancers as a treatment covered by public health insurance system in Japan

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Objectives: Boron neutron capture therapy (BNCT) is a tumor-selective treatment in which boron-containing drugs are taken up by tumor cells, followed by irradiation with thermal neutrons. The resulting nuclear reaction produces high-energy particles that selectively destroy tumor cells while minimizing damage to normal tissue. Since June 2020, accelerator-based BNCT has been reimbursed by national health insurance in Japan for unresectable, locally advanced, or recurrent head and neck cancers. However, its role in the standard treatment of surgery, radiation therapy, and chemotherapy is not yet clear. This study aimed to evaluate clinical outcomes of BNCT in routine practice and explore its role among standard modalities.
Methods: We retrospectively analyzed patients treated with BNCT at our institution between June 2020 and May 2024, with follow-up through May 2025. Post-treatment follow-up was performed at our institution whenever possible. When in-person visits were not feasible, follow-up was conducted at referring institutions. Outcomes were assessed using Response Evaluation Criteria in Solid Tumors version 1.1 for tumor response and Common Terminology Criteria for Adverse Events, version 5.0 for adverse events.
Results: A total of 301 patients were included, with 17 undergoing BNCT twice; analysis was limited to initial treatment. Median age was 68 years (range, 24-93), and median follow-up period was 14 months (range, 0-57). Histology included 248 squamous cell carcinomas and 36 non-squamous carcinomas. Treatment responses were: complete response in 129 (45.4%), partial response in 97 (34.2%), stable disease in 35 (12.3%), progressive disease in 20 (7.0%), and not evaluable in 3 (1.1%), yielding an overall response rate of 79.6%. Two-year locoregional control, progression-free survival, and overall survival rates were 42.0%, 27.2%, and 59.7%, respectively. As for critical adverse events, 4 cases were fatal due to carotid artery rupture, 1 case due to a central nervous system infection, and 1 case due to septic shock.
Conclusion: BNCT demonstrated the high treatment efficacy with a response rate of 79.6% and a 2-year locoregional control rate of 42.0% in patients with locally advanced or locally recurrent head and neck cancer who had limited treatment options. This suggests that BNCT may serve as an effective treatment option for head and neck cancer when no other effective treatments are available. Further long-term follow-up, including adverse events, is necessary in the future.

SY12-6

Neoadjuvant Chemotherapy and Transoral Surgery in Oropharyngeal Cancer: A Paradigm Shift Towards De-escalation of Adjuvant Therapy

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Standard treatment paradigms for oropharyngeal squamous cell carcinoma (OPC) concentrate a high burden of toxicity on the locoregional area, frequently leading to severe and often irreversible functional deficits, such as dysphagia and neck fibrosis. This challenge is particularly acute for **p16-negative OPC**, a high-risk cohort with a poorer prognosis. This paper proposes a novel paradigm for this population, initiating treatment with neoadjuvant chemotherapy (NACT) followed by transoral surgery (TOS/TORS). This strategy is predicated on a **strategic shift and trade-off of toxicities**, prioritizing long-term quality of life over the conventional treatment pathway.
The core rationale is to intentionally trade predictable, manageable, and largely reversible short-term systemic toxicities from chemotherapy for the opportunity to mitigate permanent locoregional functional impairment. Our clinical data confirm that p16-negative OPC exhibits a high response rate to NACT, providing a strong foundation for this approach. This favorable response enables multi-dimensional benefits: it facilitates **surgical de-escalation**, allowing for less invasive TOS/TORS to achieve a complete (R0) resection; it permits precise **adjuvant therapy de-escalation**, using the post-NACT pathological nodal response (ypN) to guide the omission or dose-reduction of radiotherapy; and it improves **systemic control** by addressing micrometastatic disease at the outset, thereby reducing the risk of distant failure.
In conclusion, the NACT-TOS/TORS model offers a transformative solution for p16-negative OPC. It reframes the therapeutic challenge from enduring unavoidable locoregional side effects to proactively managing upfront systemic toxicities to secure a better long-term outcome. This paradigm represents an evolution in patient-centric care, prioritizing **quality-of-life survivorship** and setting a potential new standard for this high-risk population.

Paper

17th Japan-Taiwan Conference on Otolaryngology-Head and Neck Surgery

Paper1 Head Neck 1

O01-01

Long-Term Assessment of Speech and Swallowing Function in Laryngopharyngeal Cancer Patients After J-Flap Reconstruction

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Introduction:
A novel J-shaped anterolateral thigh (ALT) flap reconstruction technique was developed to simultaneously restore swallowing and speech functions in patients following total laryngopharyngectomy. This study aimed to assess the outcomes and surgical complications in patients who underwent J-flap reconstruction over time.
Material &Method:
Patients who underwent J-shaped ALT flap phonatory tube reconstruction were enrolled. Surgical morbidities and outcomes were evaluated every 3 months post-surgery for a period of 12 months or until death.
Results:
Of the 36 patients, 13 underwent circumferential pharyngeal wall resection (circumferential defect [CD] group), and 23 underwent partial resection (partial defect [PD] group). After 12 months, 97% of the patients were able to resume oral intake without the need for a nasogastric tube, and 50% achieved fluent speech using the reconstructed phonatory tube. The CD group experienced a higher rate of delayed healing than the PD group (30.8% vs. 0%, P=0.012). Additionally, the PD group showed significantly higher percentages of individuals consuming solid food at both the 3- and 12-month intervals than the CD group (81.0% vs. 23.1% and 78.9% vs. 40%, respectively).
Conclusion:
This study investigated the progression of speech and swallowing functions over time after reconstruction of the voice tube with a J-flap. Using a J-shaped ALT flap phonatory tube effectively restored both speech and swallowing functions, providing long-term benefits, regardless of whether the defect was circumferential or partial.
Key Words:
Laryngopharyngeal Neoplasms; Surgical Flaps; Speech Disorders; Swallowing Disorders.

O01-02

Active surveillance for Papillary micro carcinoma in Bangladesh, hurdle & hope

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Background
Incidence of thyroid cancer is increasing worldwide specially for small size papillary thyroid carcinoma, while the mortality remains low. Thyroid cancers are the most common endocrine disorders. Bangladesh is one of the countries with the high prevalence of thyroid cancer. The actual burden of thyroid dysfunction in Bangladesh unknown. Surgery is the mainstay of treatment for thyroid cancer. In addition, active surveillance is proven as a valid option in patients with low-risk papillary thyroid cancer. The aim of this study is to assess the possibility of implementation of active surveillance in Bangladesh by physicians and to identify potential barriers to its widespread adoption.
Material and methods
Me & my group surveyed participants, Endocrinologists, ENT & Head-Neck surgeons of Bangladesh by distributing questionnaires & talked to them over telephone. The questionnaire included dichotomous, multiple choice questions, and multiple answer questions.
Results
We got responses from 139 surgeons. Most of the respondents agreed that AS is a valid modality for low-risk papillary thyroid cancer but no one has patients on active surveillance. ENT surgeons, Endocrinologists with >15 years of experience, and & practicing in clinic, private hospital & university hospital were involved. we have started active surveillance program with a very small group of patients & awareness activities among different group of doctors.
Conclusions
Obstacles to implementing active surveillance were, patient noncompliance and lack of national awareness as well as acceptance among the Bangladeshi doctors. Still active surveillance is possible in Bangladesh with differences in health care system &health care organization and even outside academic centers. Efforts to decentralize knowledge and expertise to health-care practitioners and community hospitals would encourage its implementation.

Conflict of Interest - I have no potential conflict of interest to disclose

Keywords

Active surveillance
Bangladesh
Micro papillary carcinoma
hurdle & hope

O01-03

Treatment Consensus of Oropharyngeal Cancer in Taiwan

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Oropharyngeal cancer is a type of head and neck cancerwith subsites of tumor involved palatine tonsils, tongue base, posterior pharyngeal wall. The relationship of
human papillomavirus (HPV) in oropharyngeal cancer is important with different management plan and even survival prognosis. Smoking or being infected with HPV can increase the risk of oropharyngeal cancer. In Taiwan of the year 2021, the corresponding incidence is 29.77 (per 100,000 persons) in males and 3.12 (per 100,000 persons) in females; the mortality is 11.25 in males and 0.96 in females. Taiwan's male incidence and mortality are much higher than in the rest of the world.

According the low incidence of HPV infected (30-40%) in Taiwan, planned treatment for this cancer should be modified than western country. Taiwan Head Neck Society launched a meeting talking about treatment consensus in oropharyngeal cancer, with 15 specialties with head neck surgeons, medical oncologists, radiation oncologists.

All results (divided as consensus, agreement, no agreement and rejection after voting) would be presented as Delphi methods with different divisions of radiation, surgery, systemic management.

We hope these consensus would be contributing for reference during the decision making in the treatment of Oropharyngeal cancer in the asia or western countries.

O01-04

Indocyanine green fluorescence for parathyroid gland identification and function prediction in BABA(Bilateral Axillo-Breast Approach) robotic thyroidectomy

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Objective:
Remote-access thyroidectomy techniques, such as the Bilateral Axillo-Breast Approach (BABA), offer superior cosmetic outcomes by avoiding a visible anterior neck incision. However, postoperative hypoparathyroidism remains a major concern following total thyroidectomy, potentially leading to hypocalcemia and significantly affecting patients' quality of life. The key strategy to preserve parathyroid function and prevent hypoparathyroidism is the in situ preservation of the parathyroid glands (PGs).

Methods:
Intraoperative indocyanine green (ICG) angiography was utilized to localize the parathyroid glands and evaluate their vascular supply. Parathyroid gland viability was further assessed using a "stabbing test" with a 3.0 cm long needle. If repeated punctures did not elicit fresh blood oozing, the gland was deemed non-viable and autotransplanted into the sternocleidomastoid muscle. If fresh bleeding was observed, the gland was considered viable and preserved in situ. This retrospective study included patients who underwent BABA robotic thyroidectomy at E-Da Hospital between March 2023 and June 2025. Clinical parameters analyzed included age, sex, ICG use, postoperative intact PTH (iPTH), serum free calcium, calcium supplementation, central neck dissection, pathology, and malignancy status.

Results:
Between March 2023 and June 2025, 52 patients underwent BABA robotic thyroidectomy. Among them, 33 had malignant tumors, 1 had a thyroglossal duct cyst, and 18 had benign lesions. A total of 38 patients received total thyroidectomy, 21 of whom also underwent central neck dissection. On postoperative day one, 3 patients had iPTH levels <4 pg/mL. Upon follow-up, only 1 patient remained with iPTH <4 pg/mL, and 1 patient with iPTH <15 pg/mL required ongoing calcium supplementation for hypocalcemia. Among those who underwent total thyroidectomy, 28 patients received ICG angiography and stabbing tests. In this group, the incidence of hypoparathyroidism was 0%, compared to 10% in those who did not receive ICG or stabbing tests.

Conclusion:
The combined use of indocyanine green (ICG) imaging and intraoperative parathyroid gland stabbing tests is an effective and valuable strategy for identifying parathyroid glands and predicting their postoperative function in patients undergoing BABA robotic thyroidectomy.

O01-05

Development of a Novel Syngeneic Vaccine Model Targeting Tumor-Associated Antigens for Head and Neck Cancer Immunotherapy

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The advent of immune checkpoint inhibitors (ICIs) has significantly improved the long-term prognosis of various malignancies, including head and neck cancer (HNSCC). A unique characteristic of ICI-based therapies is the emergence of a durable "tail plateau" in survival curves, indicative of long-lasting tumor suppression not observed with conventional chemotherapy or radiotherapy. This phenomenon suggests the persistence of immune memory over extended periods. Our previous studies have identified numerous tumor-associated antigens (TAAs) derived from HNSCC and demonstrated that these antigens contain epitopes capable of eliciting cytotoxic T cells with tumor-killing activity.

Despite the proven immunogenicity of HNSCC and the potential for effective antitumor immunity, the clinical efficacy of ICIs as monotherapy remains limited to approximately 20% across most cancer types. In response, several clinical trials have explored combination therapies involving ICIs and conventional treatments such as chemotherapy or targeted therapies. However, many of these trials lack solid preclinical evidence and are often conducted empirically rather than based on mechanistic insights.

Historically, murine models of cancer immunotherapy have predominantly employed highly immunogenic antigens such as ovalbumin, melanosomal antigens, or neoantigens. These models, while useful, do not accurately reflect the immune landscape of human cancers, where the antitumor response may be mediated by T cells targeting less immunogenic TAAs. To date, TAAs have rarely been identified in murine models outside of melanoma.

In this study, we aimed to establish both a scientific basis for HNC immunotherapy and a novel antigen-specific therapeutic strategy. We developed a syngeneic HNC vaccine model targeting murine TAAs. Through this model, we successfully identified novel TAAs specific to murine HNC and confirmed their immunogenicity. These findings demonstrate the potential of these antigens as key components of future cancer vaccines and as biomarkers to evaluate immune responses in preclinical models.

Our results lay the groundwork for the rational design of antigen-specific immunotherapies in HNC, contributing to a more evidence-based approach to combination therapies and offering a promising platform for the development of next-generation cancer vaccines.

Paper2 Head Neck 2

O02-01

Transoral Endoscopic Vestibular Approach for Parathyroid Surgery: A Systematic Review of Clinical Outcomes and Safety

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Background:
The transoral endoscopic parathyroidectomy vestibular approach (TOEPVA) is a scarless, minimally invasive technique for parathyroid surgery, mostly indicated in primary hyperparathyroidism. Building on transoral thyroid surgery, TOEPVA offers direct midline access without visible scarring. Despite advantages, concerns remain regarding safety, learning curve, and effectiveness in gland localisation and excision. This review evaluates current evidence on TOEPVA outcomes and limitations.

Method:
A search of major databases through May 2025 identified 255 studies, with eleven included from international centres of 280 adults undergoing TOEPVA. These comprised case series, retrospective cohorts, and comparative studies. Two independent reviewers screened and analysed data. Key outcomes included cure rates, recurrent laryngeal nerve (RLN) palsy, hypocalcaemia and cosmetic satisfaction. Operative time, hospital stay, and technical challenges were assessed. Systematic reviews were examined separately for context.

Results:
Cure rates were uniformly high (>95%) with a 1% open conversion rate. There were no reports of permanent RLN palsy; transient palsy in up to 9%. Hypocalcaemia rates varied but similar to conventional surgery. Operative times (40-260 min) decreased with experience. Hospital stays were brief (1–3 days), and cosmetic satisfaction was excellent. Patient selection and surgeon training were emphasised.

Conclusion:
TOEPVA is a promising scarless technique for select patients with hyperparathyroidism, delivering high cure rates and excellent cosmetic outcomes with a safety profile comparable to other approaches when performed by experienced surgeons. Wider adoption requires standardised protocols, training pathways, and further multicentre studies to optimise outcomes.

O02-02

Establishment of Biobank-Based Tumor Models and Exploration of CAR-T Therapy for Head and Neck Cancer

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Patient-derived cancer models (PDCMs) are essential for understanding tumor biology and evaluating therapeutic efficacy, particularly for rare cancers where conventional cell lines are lacking. At Shinshu University, we have collaborated with our institutional biobank to collect and preserve high-quality tumor specimens, including rare histological types of head and neck cancers such as salivary duct carcinoma, mucoepidermoid carcinoma, secretory carcinoma, and olfactory neuroblastoma. Using a novel long-term primary culture system, we have successfully established PDCMs from several of these tumor types.
In parallel, we have initiated preclinical investigations into the feasibility of chimeric antigen receptor T-cell (CAR-T) therapy for head and neck cancers. Ligand-based CAR-T products designed to simultaneously target EphB4 and EphA2 receptors have shown potential in several solid tumors. Although expression of these receptors has been documented in malignancies such as breast and colorectal cancer, data for salivary gland carcinomas have been limited. Our recent immunohistochemical analysis revealed that a substantial proportion of salivary gland cancer specimens express EphB4, suggesting the potential applicability of ligand-based CAR-T therapy in this disease group.
In this presentation, we will share our recent progress in establishing biobank-based PDCMs and discuss the potential application of CAR-T cell therapy for head and neck cancers. Both projects are being carried out in collaboration with academic partners, and this integrated strategy may contribute to the development of novel treatment options, particularly for tumors with limited treatment options.

O02-03

Circulating cancer-associated fibroblasts in head and neck squamous cell carcinoma: association with circulating tumor cells

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Accumulating evidence suggests that circulating tumor cells (CTCs), which shed from primary tumors into the bloodstream, play a pivotal role in both distant metastasis and locoregional recurrence. Cancer-associated fibroblasts (CAFs), a major component of the tumor microenvironment, are known to promote tumor growth, invasion, metastasis, and immune evasion through dynamic interactions with tumor cells. Similar to tumor cells, CAFs may also enter systemic circulation, yet the clinical significance of circulating CAFs (cCAFs) in head and neck squamous cell carcinoma (HNSCC) remains unclear. In this study, cCAFs were isolated from peripheral blood using CD45 depletion and detected by *FAP* expression via RT-qPCR. CTCs were concurrently identified based on the expression of three epithelial markers: *EPCAM*, *EGFR*, and *MET*. Among 97 patients with HNSCC, cCAFs and CTCs were detected in 19.6% and 61.9% of cases, respectively. cCAF positivity was significantly associated with lymph node metastasis and the presence of CTCs, although not with clinical outcomes. Interestingly, *EPCAM* expression on CTCs was significantly lower in cCAF-positive patients compared to cCAF-negative ones. Furthermore, analysis of public datasets revealed an inverse correlation between *EPCAM* expression in tumor cells and *FAP* expression in CAFs within tumor tissues. These findings suggest that cCAFs are present in the peripheral blood of HNSCC patients and may contribute to tumor progression by modulating CTC characteristics, potentially through epithelial-mesenchymal transition-related mechanisms. Further investigation into cCAFs may offer novel insights into biomarker development and therapeutic targeting in HNSCC.

O02-04

Standardized Four-Step Endoscopic Indocyanine Green Color Overlay Mapping Protocol for Parathyroid Identification in Total Thyroidectomy: Prospective Randomized Controlled Trial

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Background:
Hypocalcemia and hypoparathyroidism remain difficult-to-manage surgical complications after total thyroidectomy, primarily due to inadvertent injury or devascularization of the parathyroid glands. Indocyanine green (ICG) fluorescence imaging can aid intraoperative identification, but standardized protocols are lacking. We developed a standardized four-step endoscopic Indocyanine Green color overlay mapping protocol to reduce parathyroid injury and to validate its effectiveness through postoperative follow-up.
Methods:
In this prospective randomized controlled trial, patients undergoing total thyroidectomy with central neck dissection were randomized to either the ICG mapping group or a control group relying solely on visual identification. The four-Step ICG protocol involved: (1) 2 mL ICG IV bolus one minute before upper pole dissection; (2) 2 mL ICG one minute before lower pole dissection; (3) 2 mL ICG one minute after thyroid lobectomy; (4) Auto-fluorescence check of the specimen for accidental removal of parathyroid. The primary endpoints were postoperative hypocalcemia (corrected Ca < 2.2 mmol/L) and hypoparathyroidism (PTH < 12 pg/mL), with serum calcium and PTH levels measured preoperatively, on the first postoperative day, and at 1, 3, 6, and 12 months postoperatively.
Results:
The ICG group demonstrated a significantly lower rate of hypocalcemia and hypoparathyroidism compared with the control group. Transient hypocalcemia (<6 months) occurred in 10 of 36 patients (27.8%) in the No-ICG group and 12 of 65 patients (18.5%) in the ICG group, while permanent hypocalcemia (>6 months) was observed in 5 of 36 patients (14%) and 6 of 65 patients (9.2%), respectively. For parathyroid function, transient hypoparathyroidism (<6 months) was seen in 4 of 36 patients (11.1%) in the No-ICG group and 4 of 65 patients (6.2%) in the ICG group. Permanent hypoparathyroidism (>6 months) occurred in 3 of 36 patients (8.3%) in the No-ICG group compared with 1 of 65 patients (1.5%) in the ICG group. Subgroup trends suggested that higher BMI, female sex, and malignant pathology on histological examination might contribute to the risk of hypocalcemia.
Conclusions:
Our standardized four-step endoscopic Indocyanine Green color overlay mapping protocol enhances parathyroid identification and effectively reduces the incidence of postoperative hypocalcemia and hypoparathyroidism. Further subgroup analysis is warranted to identify patient populations at higher risk who may benefit most from ICG-guided parathyroid preservation and to optimize strategies for maintaining calcium homeostasis.

O02-05

Tumor-width-to-tongue-width ratio: A novel predictor of cervical lymph node metastasis and prognosis in squamous cell carcinoma of the tongue

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Objectives
Squamous cell carcinoma of the tongue (SCCOT) with midline involvement has a higher risk of contralateral cervical metastasis. The aim of this study is to investigate the association between the tumor-width-to-tongue-width ratio (TWR) and unilateral/ contralateral cervical metastasis and prognosis in SCCOT.

Materials & Methods
221 patients with SCCOT from 2002 to 2025 were enrolled. Eligible patients underwent magnetic resonance imaging and primary surgical treatment. The TWR was measured and its predictive value for cervical metastasis was analyzed using logistic regression. Survival outcomes were assessed using the Kaplan-Meier method and Cox regression analysis. A nomogram combining TWR and other clinicopathological factors was constructed.

Results
88.2 % of patients were male, and 11.8 % were female. The median age of the study population was 50.9 years old. 44 patients underwent bilateral neck dissection, and contralateral cervical metastasis was noted in 21 patients. Multivariate analysis confirmed TWR $\geq$ 0.33 and TWR $\geq$ 0.538 as an independent risk factor for unilateral and contralateral cervical metastasis (adjusted add ratio: 2.743 and 3.607, $p = 0.016$ and 0.043). Kaplan-Meier plots and multivariate analysis demonstrated that the groups with higher TWR values were associated with poorer overall survival and locoregional-free survival. The concordance index for overall survival prognosis was 0.778 using this nomogram compared to 0.684 using the TNM staging alone ($p < 0.001$).

Conclusions
TWR is a significant predictor of unilateral/ contralateral cervical metastasis and independently affects survival. A nomogram including TWR with other clinicopathological factors provided better predictive accuracy for prognosis in SCCOT patients.

Paper3 Head Neck 3

O03-01

Immunosenescence-based prognostic stratification in patients with head and neck squamous cell carcinoma

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Immunosenescence refers to a systemic decline in immune function associated with aging, particularly affecting adaptive immunity. This decline has been implicated in tumor development, autoimmunity, and reduced vaccine efficacy. On the other hand, during tumor development, antitumor immune responses undergo immune editing and shift toward a suppressive state. It has been suggested that the tumor-bearing state may further accelerate immunosenescence. In the present study, we investigated the potential of several immunosenescence-related markers, age, percentage of naïve $CD8^+$ T cells, CD4/CD8 ratio, C-reactive protein (CRP), and percentage of regulatory T cells (Tregs), to stratify prognosis in patients with head and neck squamous cell carcinoma (HNSCC). A total of 77 patients with HNSCC treated at our institution (pretreatment cohort) were analyzed. Peripheral blood was collected before treatment, and $CD4^+$ and $CD8^+$ T-cell subsets were evaluated by flow cytometry. Age and CRP levels were extracted from medical records. Cutoff values were determined using receiver operating characteristic (ROC) curve analysis. In the pretreatment cohort, elderly patients exhibited significantly lower percentages of naïve $CD8^+$ T cells and higher percentages of Tregs. Additionally, both CRP and %Tregs were significantly elevated in advanced-stage disease. Prognostic analysis showed that older age, lower %naïve $CD8^+$ T cells, lower CD4/CD8 ratio, elevated CRP, and higher %Tregs were associated with poorer survival. Similar trends, except for %Tregs, were observed in a separate cohort of 36 HNSCC patients treated with immune checkpoint inhibitors (immunotherapy cohort), in which low %naïve $CD8^+$ T cells were significantly associated with worse outcomes. These findings suggest that the presence of cancer may modify the significance of immunosenescence markers, reflecting distinct immune dynamics compared to normal aging. Immunosenescence-related markers may serve as useful indicators of immune status and prognostic stratification in HNSCC.

O03-02

Management of Carotid Blowout Syndrome in Patients with Head and Neck Cancer: Experience from a Single Institution

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Study Aim:
Head and neck squamous cell carcinoma (HNSCC) is one of the most common cancers among men in Taiwan. Patients with advanced or recurrent HNSCC often experience rapid tumor growth, leading to necrosis and ulceration of surrounding tissues. Additionally, postoperative radiotherapy and chemotherapy can make the soft tissues more fragile, resulting in poor healing or ischemic necrosis. This increases the risk of "carotid blowout syndrome," a condition with a mortality rate ranging from 3% to 50%. Therefore, if we can effectively predict the risk of carotid artery rupture and implement early vascular interventions, we can improve the quality of cancer care and potentially extend the survival time of patients.
Material and Methods :
In 2020, we established a protocol for the preventive treatment of carotid artery rupture in collaboration with a multidisciplinary team that included a head and neck surgeon, a radiologist, a neurologist, and an oncologist. When imaging examinations reveal signs of an impending carotid artery rupture, we arrange a multidisciplinary discussion and conduct the protocol. All patients are required to receive prophylactic anticoagulant medications before vascular intervention. After the patient gets carotid artery vascular embolization or a stent, they are transferred to the neurology intensive care unit for further observation of potential neurological complications.
Results:
From 2020 to 2024, patients who received vascular embolization treatment at our hospital were divided into two groups based on the timing of the procedure. The first group consisted of patients who underwent emergency vascular embolization due to massive bleeding episodes. The second group included patients who received prophylactic vascular embolization. A total of 47 patients received emergency vascular embolization, with only 16 patients (34%) treated during regular working hours. While rescue hemostasis was performed, many of these patients experienced complications, including aspiration pneumonia (38.3%) and septic shock (34%). The average survival time for this group was 13.6 weeks. In contrast, 31 patients underwent prophylactic treatment of carotid artery rupture with an intervention rate of 62.5%. The rate of pneumonia (9.7%) and hemorrhagic shock (3.2%) was significantly lower in the prophylactic group, which also had a better average survival time of 20.5 weeks.
Conclusion:
Prophylactic management of carotid blowout syndrome not only reduces the risk of massive bleeding in patients but also decreases the incidence of developing aspiration pneumonia, septic shock, and subsequent neurological complications. Team members can efficiently perform prophylactic vascular embolization procedures during the daytime with a sufficient workforce. This effective embolization significantly improves the quality of medical care for patients with HNSCC and extends their lifespan.

O03-03

Immune microenvironmental features and clinical outcomes of RM-1929 photoimmunotherapy

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Locoregional recurrence of head and neck squamous cell carcinoma remains associated with a poor prognosis, even after the application of multimodal salvage therapies. A novel treatment option, photoimmunotherapy targeting epidermal growth factor receptor (EGFR) with cetuximab sarotalocan sodium (RM-1929), offers a tumor-specific strategy that can directly induce cancer cell death while potentially enhancing antitumor immunity. We conducted a retrospective single-center study at Kyoto Prefectural University of Medicine, including 20 patients treated between December 2021 and January 2025. Patients received intravenous RM-1929 at 640 mg/m² followed by near-infrared laser illumination of the tumor site. Clinical outcomes such as treatment response, overall survival, and safety were evaluated in all patients, and ten available tumor samples (eight pre-treatment and two paired post-treatment samples) underwent detailed profiling with 14-marker multiplex immunohistochemistry. Data were analyzed up to April 2025. In total, 34 treatment cycles were administered. The cohort had a median age of 65.5 years, and 30% were female. The overall response rate was 76.5%, with 6 complete responses (CR), 20 partial responses (PR), 6 stable diseases (SD), and 2 progressive diseases (PD). Median overall survival was 377 days. Immune profiling demonstrated that expression levels of EGFR and β-catenin did not differ significantly between responders (CR/PR) and non-responders (SD/PD). In contrast, responders showed significantly higher densities of intratumoral $CD39^{+}CD8^{+}$ T cells and a longer distance between tumor cells and T cells. Moreover, in two paired pre- and post- treatment samples, increased immune cell infiltration and enhanced calreticulin expression were observed following photoimmunotherapy. These findings indicate that RM-1929 photoimmunotherapy provides favorable local tumor control in patients with recurrent head and neck squamous cell carcinoma and highlight possible immune-modulating effects that may contribute to clinical response.

O03-04

Sialendoscopy with Intraductal Steroid Irrigation for Treatment of Radioactive Iodine-Induced Sialadenitis

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Purpose: Sialadenitis is a common complication among patients who have received radioactive iodine therapy. Clinically, it often presents with salivary gland swelling, pain, and xerostomia. Most patients are initially treated with conservative measures and medications; however, many experience limited improvement, resulting in frequent medical visits and a significantly impaired quality of life. We attempted to address this issue by performing sialendoscopy with intraductal steroid irrigation and evaluated both the overall success rate and symptom improvement.

Methods: This study included thyroid cancer patients who developed recurrent salivary gland swelling and xerostomia after radioactive iodine therapy and had poor response to conservative and medical treatment. Management consisted of sialendoscopy with ductal dilation, saline irrigation, and intraductal steroid infusion. Symptom changes were assessed using the Chronic Obstructive Sialadenitis Symptoms (COSS) questionnaire, Summated Xerostomia Inventory (SXI), and Visual Analogue Scale (VAS), comparing preoperative scores with those at three months postoperatively.

Results: A total of 10 patients were enrolled, including 6 females (60%) and 4 males (40%). Nine patients had papillary thyroid carcinoma and one had follicular thyroid carcinoma. The mean cumulative dose of radioactive iodine was 168 mCi (range: 100–350 mCi). In total, 20 salivary glands were treated, including 16 parotid glands (80%) and 4 submandibular glands (20%). Significant improvements were observed:

- COSS: 45.5 (27.5–84.5) pre-op vs 4.5 (0–15.5) post-op, $p = 0.0022$
- SXI: 20 (18–25) pre-op vs 15 (11–16) post-op, $p = 0.0431$
- VAS: 9 (6–10) pre-op vs 1 (1–3) post-op, $p = 0.0051$

No major postoperative complications were reported.

Conclusion: Sialendoscopy with intraductal steroid irrigation can significantly improve salivary gland swelling, inflammation, and xerostomia in patients with radioactive iodine-induced sialadenitis, and may serve as a safe and effective therapeutic option.

O03-05

Extracapsular Dissection Versus Partial Superficial Parotidectomy: A Systematic Review and Meta-Analysis

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Background
Partial superficial parotidectomy (PSP) and extracapsular dissection (ECD) are conservative surgical techniques used for benign parotid tumors. However, they differ in their approach to facial nerve management. This study aimed to compare PSP and ECD in terms of perioperative outcomes and oncologic safety.

Methods
A systematic search of PubMed, Embase, and the Cochrane Library was performed to identify studies published up to March 2025. Studies were included if they directly compared PSP and ECD for benign parotid tumors. Meta-analyses were conducted using a random-effects model.

Results
Fourteen studies were included. ECD was associated with significantly shorter operative duration (mean difference [MD], −15.42 minutes; 95% confidence interval [CI], −23.47 to −7.37), lower drainage volume (MD, −31.32 mL; 95% CI, −32.88 to −29.76), shorter hospital stay (MD, −0.54 days; 95% CI, −0.78 to −0.29), and lower rates of Frey syndrome (risk difference [RD], −0.03; 95% CI, −0.05 to −0.00) and temporary facial nerve injury (RD, −0.12; 95% CI, −0.20 to −0.05). No significant differences were observed in tumor size, recurrence, permanent facial nerve injury, complete excision rate, or other complications.

Conclusions
PSP and ECD appear to provide comparable oncologic safety in managing benign parotid tumors. ECD may offer certain perioperative advantages and could be considered in appropriately selected cases. Further prospective studies are needed to validate these findings and inform surgical decision-making.

Paper4 Head Neck 4

O04-01

Treatment Outcomes of External Auditory Canal Cancer at a Single Institution

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External auditory canal cancer is a rare malignancy with no standardized treatment protocol, affecting only a few people per million. Squamous cell carcinoma (SCC), the most common type (approximately 90% of cases), is typically managed with a multidisciplinary approach combining surgery, radiation therapy, and chemotherapy. Surgical methods are selected based on the Modified Pittsburgh classification, with lateral temporal bone resection used for T1 and T2 tumors and subtotal temporal bone resection for tumors involving the middle ear. These procedures are supplemented with additional resection and reconstruction as needed. At our institution, we primarily use TPF-based regimens (docetaxel, cisplatin, and 5-fluorouracil) for chemoradiotherapy.

In contrast, adenoid cystic carcinoma (ACC), which accounts for fewer than 10% of cases, lacks effective chemotherapy. First-line treatment is typically surgery—with postoperative radiotherapy in some cases—or carbon-ion radiotherapy (CIRT).

From April 2015, our institution has treated 130 cases of external auditory canal cancer surgically and 50 cases non-surgically. Among 73 SCC cases treated between 2015 and 2022, 61 underwent surgery (Stage I: 28, Stage II: 5, Stage III: 14, Stage IV: 10), while 12 received chemoradiotherapy (Stage III: 4, Stage IV: 8). The 3-year recurrence-free survival (RFS) and disease-specific survival (DSS) rates in the surgical group were 81.9% and 89.1%, respectively. Univariate analysis identified surgical margin status as a significant prognostic factor. For Stage IV SCC, there was no statistically significant difference in outcomes between the surgical group (3-year RFS: 67.7%, DSS: 70.2%) and the chemoradiotherapy group (3-year RFS: 75.0%, DSS: 87.5%).

For ACC, we analyzed five surgically treated cases (Stage I: 2, Stage II: 2, Stage IV: 1) and four cases treated with CIRT (all Stage IV), all with over two years of follow-up. In the surgical group, there were no local recurrences, but two cases developed distant metastases (lung and bone) more than two years after treatment. In the CIRT group, two cases developed lung metastases within one year (one also had local recurrence), and one developed multiple bone metastases after 1.5 years. With limited options for recurrent ACC and no actionable mutations identified, the high incidence of delayed distant recurrence underscores the urgent need for new therapeutic strategies.

O04-02

Transoral robotic assisted surgery for large Schwannoma of the Lateral pharyngeal space

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Schwannomas of the oropharyngeal region are rare, benign nerve sheath tumors that can present with symptoms such as dysphagia, foreign body sensation, and mild choking. We report a case of a 54-year-old female who experienced a persistent globus sensation and occasional choking episodes over six months. Imaging studies, including MRI and CT revealed a well-defined mass located at the lateral pharyngeal wall, adjacent to the internal carotid artery. The lesion was successfully excised using transoral robotic surgery (TORS) which provided enhanced visualization and precise dissection in a confined anatomical space. Histopathological examination confirmed the diagnosis of schwannoma. The patient had an uneventful postoperative course with no neurological deficits or swallowing dysfunction. This case highlights the advantages of robotic-assisted surgery in the resection of oropharyngeal tumors, particularly in challenging locations close to vital structures.

O04-03

Neoadjuvant chemotherapy with paclitaxel, carboplatin, and cetuximab for locally advanced head and neck squamous carcinoma

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Introduction.
In certain cases, induction chemotherapy for head and neck squamous carcinoma (HNSCC) is considered as a treatment modality to achieve organ preservation. Although the standard induction chemotherapy regimen for HNSCC is docetaxel, cisplatin, and 5-fluorouracil (TPF), other regimens with relatively mild toxicity have been reported to be effective. These include a regimen consisting of paclitaxel, carboplatin, and cetuximab (PCE). However, the effectiveness of PCE regimen as neoadjuvant use remains to be elucidated. In this study, we conducted a retrospective analysis to evaluate the efficacy of the PCE regimen.

Materials and Methods
Patients who underwent PCE therapy as neoadjuvant chemotherapy between March 2023 and August 2024 were enrolled in the study. The response of the tumors to the treatment was evaluated using imaging and pathological analysis. The occurrence of adverse effects was documented to assess the safety of the treatment regimen.

Results
The study's sample population comprised a total of 20 patients, with 17 male and 3 female subjects. The median age was 68.5 years (range: 31 to 81). The primary site of cancer was the oral cavity in seven patients, the hypopharynx in six patients, the larynx in four patients, the oropharynx in two patients, and the sino-nasal cavity in one patient. A partial response was observed in eight patients, while stable disease was noted in 12 patients, resulting in an overall response rate of 40%. According to the 6th edition of the General Rules for Clinical Studies for Head and Neck Cancer, published by the Japan Society for Head and Neck Cancer, the histopathological tumor regression grade was as follows: grade 3 in 1 patient, grade 2 in 8, grade 1b in 1, grade 1a in 8, and grade 0 in 2. The one-year overall survival rate was 95.0%, and the disease-free survival rate was 62.5%. Adverse effects of Grade 3 or 4 occurred in eight patients. It is noteworthy that no surgical procedures were postponed or annulled on the basis of toxicity or tumor progression.

Conclusions
PCE therapy effectively controlled tumor progression during the preoperative waiting period. The correlation between radiological responses and pathological findings was not always consistent. Our findings suggest that surgery should proceed as scheduled, followed by a pathological risk assessment and appropriate postoperative treatment.

O04-04

Endoscopic Laryngo-Pharyngeal Surgery (ELPS) for Early Laryngo-Pharyngeal Cancer: Experience at Our Department

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In recent years, endoscopic laryngo-pharyngeal surgery (ELPS) for superficial squamous cell carcinoma (SCC) of the oropharynx, hypopharynx, and larynx has become widely adopted because of its minimal invasiveness, preservation of voice function, and the advantage of maintaining the option of subsequent radiotherapy (RT) or chemoradiotherapy (CRT). At our institution as well, ELPS has been actively performed in collaboration with gastroenterologists. Although many reports have demonstrated favorable treatment outcomes, recurrences are occasionally encountered. Therefore, in this study, we retrospectively analyzed 223 patients with 284 superficial SCC lesions of the oropharynx, hypopharynx, and larynx who underwent ELPS at our department between January 2016 and December 2024, and treatment outcomes and recurrence-related factors were systematically evaluated.

The 5-year overall survival and disease-specific survival rates were 91% and 100%, respectively, with local recurrence observed in 8 patients (3.4%) and cervical recurrence in 7 patients (3.1%). Regarding factors influencing local recurrence, univariate analysis demonstrated significant associations with tumor size ($p=0.013$) and horizontal margin positivity ($p<0.01$), while multivariate analysis identified horizontal margin positivity ($p=0.018$) as an independent factor. Regarding cervical recurrence, univariate analysis revealed significant associations with vertical margin positivity ($p<0.01$), vascular invasion ($p<0.01$), lymphatic invasion ($p<0.01$), and tumor thickness ≥1000 μm ($p<0.01$), whereas multivariate analysis identified vascular invasion ($p=0.012$) as a significant factor.

In conclusion, ELPS provides favorable oncologic and functional outcomes for superficial SCC of the oropharynx, hypopharynx, and larynx. However, patients with positive surgical margins or vascular invasion are considered to require more careful follow-up to ensure long-term disease control.

O04-05

Management of Near-Infrared Photoimmunotherapy-Induced Skin Injury Using Pedicled Flap Transfer: A Case Report

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【Background】Near-infrared photoimmunotherapy (NIR-PIT) is a novel cancer treatment that combines an antibody-photoabsorber conjugate and NIR light. Currently, this therapy is approved only in Japan for unresectable, locally recurrent head and neck cancers. Despite its successful clinical application, NIR-PIT often causes severe and prolonged complications, including skin injury and pharyngocutaneous fistula, which can significantly reduce patients' quality of life (QoL). Here, we report a case of NIR-PIT-induced skin injury around the anterior neck that was successfully managed with a pedicled flap transfer.
【Case】A 71-year-old male was diagnosed as locally advanced tongue squamous cell carcinoma (T4aN2cM0). He underwent total tongue resection, bilateral neck dissection, laryngeal elevation, and free flap transfer using a rectus abdominis musculocutaneous flap at year X-4. One year after treatment, a local recurrence was detected near the mandibular region, and chemoradiation therapy was administered. During follow-up, a local recurrence was identified at the same site. Due to moderate swallowing dysfunction, NIR-PIT was performed at year X-1. Postoperatively, a NIR-PIT-induced skin injury developed, exposing the mandible and hyoid bone. Additionally, left axillary lymph node metastasis was found and treated with surgical resection. In year X, after confirming no recurrence, the skin injury was debrided and covered with a pectoralis major muscle flap. The postoperative course was uneventful. His swallowing function improved, he reported high satisfaction, and a marked improvement in QOL was noted.
【Discussion】We often encounter severe treatment complications following PIT, such as skin injury or fistula formation. Currently, there is no strong evidence regarding how and when NIR-PIT-induced skin injuries should be treated. Generally, the surgical indications for flap transfer are as follows: (1) absence of local recurrence, (2) a clean wound condition after infection control, and (3) good overall health. In our case, the NIR-PIT-induced skin injury exhibited pathophysiological characteristics similar to radiation-induced tissue damage. The patient presented with left axillary lymph node metastasis; however, no other metastases were detected, and good local tumor control was achieved.
【Conclusion】Pedicled flap transfer for skin injuries following NIR-PIT is a safe and effective treatment option. With appropriate case selection and surgical technique, high success rates and favorable functional and cosmetic outcomes can be achieved.

Paper5 Otology 1

O05-01

A Novel Audiogram Model for Predicting the Prognosis of Sudden Sensorineural Hearing Loss

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Background: Sudden sensorineural hearing loss (SSNHL) is an otological emergency involving hearing loss greater than 30 dB across three consecutive frequencies within 72 hours. Prognosis is influenced by the initial pure tone audiogram (PTA), with ascending and U-shaped patterns showing better outcomes and descending patterns linked to poorer outcomes. Traditional audiograms are classified into 4 to 7 types based on hearing thresholds at 4 to 6 frequencies. However, the definitions of these patterns are often ambiguous and not easy to apply in clinical practice. This study aimed to compare the prognostic value of the traditional seven-type audiogram model with a novel three-type audiogram model.

Methods: This retrospective cohort study included SSNHL patients from 2012 to 2023. Hearing outcomes, measured by PTA, were classified using both the traditional seven-type audiogram model and a new three-type model based on the 4 kHz threshold (best, in between, worst). The traditional seven-type model classifies audiograms into **flat**, **descending**, **ascending**, **tent-shaped**, **U-shaped**, **jagged**, **and profound types** based on the threshold patterns at four frequencies (0.5, 1, 2, and 4 kHz). The novel three-type model classifies audiograms according to the relative position of the 4 kHz threshold: **(1) 4 kHz is the best**, **(2) 4 kHz is between**, **or (3) 4 kHz is the worst.** Complete recovery (CR) was defined as a final hearing threshold ≤25 dB HL. Multiple and stratified linear regression analyses assessed its association with the CR rate, defined as the proportion of patients achieving CR.

Results: Among the 965 patients with SSNHL, the mean age was 50.8 years, and most were male (51.5%). Using multivariable regression with 4 kHz–worst as the reference group, the CR rate was significantly higher in the other two categories: 36.0% for 4 kHz–in between ($\beta = 0.16$; $p < 0.001$) and 49.0% for 4 kHz–best ($\beta = 0.29$; $p < 0.001$), compared to 20.0% for 4 kHz–worst. In contrast, the traditional seven-type audiogram model did not show a significant association with recovery ($p = 0.35$).

Conclusion: The novel three-type audiogram model offers superior prognostic utility in SSNHL, clearly highlighting the 4 kHz threshold as a pivotal determinant of recovery. Traditional classification systems, though comprehensive, are complex and less user-friendly for direct clinical application. **This novel model will provide clinically a practical tool for prognostic assessment and patient counseling.**

O05-02

Application of MRP and MIP reconstruction to temporal bone CT images in ear surgery

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Experienced ear surgeons perform surgery by reconstructing the anatomical structure three-dimensionally in their minds based on the horizontal and coronal images of the temporal bone CT images, but this is often difficult for immature surgeons. We previously reported on the use of surgical position view (SPV) images, which are obtained by reconstructing horizontal CT images into sagittal images using Multi-Planar Reconstruction (MPR) and rotating them 90 degrees. In addition to being viewed in the same direction as the surgeon's line of sight during surgery, this SPV image has the advantages of being easily created by operating the PACS image viewer attached to the electronic medical record, and being able to be viewed at the same window level as a normal CT image. However, MPR images are depicted on a single plane, and have the disadvantage that it is difficult to visualize the three-dimensional effect and depth during surgery unless multiple images are viewed consecutively.

Maximum Intensity Projection (MIP) is a method of displaying three-dimensional image data in two dimensions, similar to MPR. Only the maximum CT value on the ray path from the viewpoint direction is displayed, and the range (slab thickness) from which the maximum value is picked up can be changed arbitrarily depending on the purpose and target organ. In this study, we created an SPV:MIP image using the MIP reconstruction method while keeping the viewpoint of the SPV image unchanged, and compared it with the SPV:MPR image, and examined the conditions of slab thickness and slice interval that make it easy to see the target structure of the middle ear (the PACS viewer used in our hospital is Fujitsu Medical's SYNAPSE 5, which has the largest market share in the world). Both images can be created in about 15 seconds, and the subjects were cases without soft tissue shadows in the middle ear. While the MIP image provides a three-dimensional sense of the structure and a lot of information on the chain structure of the ossicles per image, it is difficult to depict the structures inside the facial nerve, chorda tympani nerve, and bony labyrinth. The SPV image we reported is presented together with the MPR and MIP reconstruction images. The aim is to help understand the anatomy during ear surgery by using both images, which complement each other's shortcomings.

O05-03

Management of Pneumolabyrinth with Endoscopic Fistula Repair: Challenges and Outcomes

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Pneumolabyrinth is a rare otologic condition characterized by the presence of air within the labyrinth, most often following trauma or iatrogenic procedures, and may cause significant cochleovestibular symptoms such as sensorineural hearing loss and vertigo. We report a 36-year-old woman who developed sudden left-sided hearing deterioration, persistent vertigo, and tinnitus for six months after undergoing left Eustachian tube surgery and ossiculoplasty at an outside hospital for symptoms of patulous Eustachian tube. Pure-tone audiometry revealed mixed hearing loss in the left ear (air-conduction threshold ~70 dB HL, air–bone gap ~35 dB). High-resolution temporal bone computed tomography (HRCT) demonstrated air within the left vestibule. Integrating the history, clinical findings, and imaging, pneumolabyrinth was diagnosed. As conservative management failed and symptoms markedly affected daily function, the patient underwent endoscopic ossicular reconstruction and leak repair. Intraoperatively, the prior prosthesis was removed, ossiculoplasty was performed with incus interposition, and a suspected round-window membrane leak was repaired using tragal perichondrium. Postoperatively, the tympanic membrane remained intact without otorrhea, vertigo resolved completely, and hearing thresholds improved.
HRCT is the diagnostic modality of choice for pneumolabyrinth. Management should be individualized based on symptom severity; prognosis depends on timely intervention and the extent of initial injury. Prior literature suggests that vestibular involvement is more common, whereas cochlear involvement portends a poorer auditory prognosis. Clinically, the vertigo differential should include benign paroxysmal positional vertigo. Surgical repair often yields substantial vestibular symptom relief, whereas hearing recovery is variable and partial in many cases (approximately 40%). Early recognition and appropriate treatment are therefore crucial.

O05-04

Advancing Otologic Surgery and Surgical Education with the 4K/3D Exoscope: Clinical Utility of VITOMTM Eagle

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High-definition visualization is crucial in otologic surgery, where precision is required because of delicate structures and narrow operative fields. Traditionally, the operating microscope has been the gold standard for magnified observation. However, its limitations, including restricted ergonomics, dead angles, and the inability to share the visual field with assistants, have led to the exploration of alternative systems for its use. The VITOM™ Eagle, a next-generation 4K/3D exoscope, presents a novel solution for heads-up surgery. It facilitates stereoscopic and immersive viewing via large monitors, enabling all team members to share the surgical field. Compared with conventional microscopes, this system enhances ergonomics, reduces surgeon fatigue, and eliminates the need for prolonged neck flexion. The compatibility of the exoscope with endoscopic systems further allows seamless switching of viewing modes, making it highly adaptable to various otologic procedures. From an educational perspective, the VITOM™ Eagle provides a transformative experience. Its shared 3D visual experience enhances real-time teaching, facilitates anatomical understanding, and promotes collaboration. The ability of both trainees and staff to observe the same field from the same perspective significantly improves training efficiency and intraoperative communication. Although some limitations remain, such as maneuverability in deep or angled anatomical spaces, the benefits of ergonomics, visibility, and education suggest that the exoscope will play an increasingly important role in the evolution of otologic surgery. Future integration with endoscopic techniques may further expand its applications. In conclusion, the VITOM™ Eagle is more than a visualization tool; it is a catalyst for safer surgery and more immersive surgical education in the field of otology.

O05-05

Psychiatric comorbidity in patients with tinnitus or auditory hallucination and antipsychotic drug therapy, comorbid migraine, sleep evaluation, sound therapy and Shared Decision Making (SDM)

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[Background] We reported psychiatric comorbidity (1397/1934, 72.2%) in patients with dizziness.
[Aims & Objectives] In this study, we investigated about tinnitus or auditory hallucination.
[Method] The subjects were 417 patients (167men, 250 women) with tinnitus and 42 patients (14 men, 28 women) with auditory hallucination. Psychiatric comorbidity was revealed in 77.5% (323/417) with tinnitus and in 97.4% (41/42) with auditory hallucination. AhHI (Auditory hallucination Handicup Inventory), which is a revised version of THI, was used as an evaluation method for auditory hallucinations. In this study, we investigated about tinnitus or auditory hallucination.
[Results] As a treatment for tinnitus and auditory hallucination, antipsychotic therapy (Dopamine 2 partial agonists: Aripiprazole and Brexpiprazole) was effective. The comorbidity rates of migraine are tinnitus (7.1%, 28/393) or Ah (11.1%, 4/36), and in these cases, treatment of migraine is extremely important. An evaluation of sleep disorders was effective using Insomnia Severity Index (ISI). Sound therapy was performed on 52 cases of tinnitus and 6 cases of auditory hallucinations. With sound therapy, Case 1 improved from THI 100 to 2 points and AhHI 98 to 0 points, and Case 2 improved from THI 32 to 0 points and AhHI 66 to 0 points.
A 36-year-old woman (Case 3) with schizophrenia, whose main complaints were dizziness, tinnitus, and auditory hallucinations, had a THI of 86 points, AhHI of 76 points, DHI of 96 points, and ISI of 24 points. With psychiatric treatment her score improved to THI 42 points, AhHI 20 points, DHI 58 points, and ISI 11 points. The 77-year-old man (Case 4) with right paraocular auditory hallucinations did not have psychiatric comorbidity. An evaluation of sleep disorders was effective using Insomnia Severity Index (ISI). Shared Decision Making (SDM) was performed to increase treatment continuation rates.
[Discussion & Conclusion] We believe that neuro-otological evaluation and antipsychotic therapy, sleep evaluation are useful for treating tinnitus or auditory hallucinations, and that improving insomnia, reducing anxiety, sound therapy and SDM are also useful.
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Paper6 Otology 2

O06-01

Evaluating Adaptive Functioning and Psychological Resilience in Japanese Youth with Hearing Impairment

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Introduction: To promote employment and job retention among individuals with hearing impairment (HI), it is essential to assess their adaptive behavior and psychological traits. Adaptive behavior encompasses the skills necessary for personal independence and social responsibility, and is a key focus in rehabilitation for individuals with disabilities. The Vineland Adaptive Behavior Scales, Second Edition (VABS-II), evaluates functioning across four domains: Communication, Daily Living Skills, Socialization, and Total Adaptive Behavior. Previous research has shown that individuals with HI tend to score lower in Communication and Socialization domains, but such data are lacking in the Japanese population. Additionally, psychological constructs such as GRIT and self-esteem are important for understanding long-term employment sustainability.

Participants and methods: This study examined adaptive behavior and its relationship with GRIT and self-esteem among Japanese individuals with HI aged 13 to 25 years. Participants were recruited from the outpatient center of the Department of Otolaryngology, Head and Neck Surgery at Okayama University Hospital and Kyoto Prefectural University of Medicine. All participants primarily used spoken language and were either students or employed individuals. After obtaining informed consent, participants or their guardians completed questionnaires including VABS-II and background information. GRIT and Rosenberg Self-Esteem Scale (RSES) were self-administered.

Results: A total of 47 participants (mean age: 16.55 years; 18 males, 29 females) were included. Among them, 27 used cochlear implants (CI), 17 used hearing aids (HA), and 3 used no devices. Most CI and HA users had early diagnoses and received intervention primarily during the preschool years. Based on VABS-II scores, participants were divided into three groups: low adaptive behavior (n = 9 with 5 CI and 4 HA users), average adaptive behavior with low socialization (n = 8, all CI users), and generally high adaptive behavior (n = 30 with 14 CI, 13 HA users, and 3 no-device users). GRIT scores increased progressively across these groups, while RSES scores were lowest in the low socialization group.

Discussion: Despite early intervention, some individuals showed reduced socialization and self-esteem, particularly those in the average adaptive behavior group with low socialization. These findings suggest that early medical and educational support may not be sufficient to foster social development and psychological resilience. The results highlight the importance of comprehensive evaluation using VABS-II and the need for targeted support strategies to enhance social skills and self-esteem in school-age individuals with HI. Such efforts may contribute to better employment outcomes and long-term independence.

O06-02

Comparative Evaluation of Sleep Disturbance in Vestibular Migraine and Meniere's Disease

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This study aimed to compare the prevalence and characteristics of sleep disturbance between patients with vestibular migraine (VM) and Meniere's disease (MD), and to evaluate the relationship between sleep quality and dizziness-related disability. In the observational design, 87 participants (35 with VM, 39 with MD, and 13 healthy controls) were enrolled at a tertiary academic medical center. All subjects completed the Mini Sleep Questionnaire (MSQ) to assess sleep quality and the Dizziness Handicap Inventory (DHI) to evaluate the impact of dizziness on daily life. Both VM and MD groups showed significantly higher MSQ total scores compared to controls ($P < .001$), indicating more prevalent sleep disturbance. Notably, the VM group reported a higher frequency of "difficulty falling asleep" ($P = .015$) and "headaches on awakening" ($P = .012$) than the MD group. In the VM cohort, MSQ scores were positively correlated with DHI total scores ($r = .518$, $P = .001$), and patients with severe dizziness handicap had significantly higher MSQ scores than those with mild handicap ($P = .005$). These findings suggest that while sleep disturbance is common in both VM and MD, VM patients may experience more severe sleep-related symptoms, which are closely associated with the degree of dizziness-related impairment. Assessing and addressing sleep quality may be an important component of comprehensive management for patients with vestibular disorders, especially those with VM.

O06-03

Stepwise Management of Patulous Eustachian Tube Dysfunction

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Patulous Eustachian Tube Dysfunction (PETD) is a challenging condition to manage clinically, primarily due to its significant impact on patients' quality of life. Symptoms such as autophony and aural fullness often cause considerable distress, affecting daily living. Diagnosing PETD is crucial for distinguishing it from obstructive Eustachian tube dysfunction (OETD), ensuring accurate treatment decisions. A comprehensive diagnostic and therapeutic pathway is proposed, integrating subjective questionnaires (ETDQ-7, PHI-10), with objective assessments (tympanometry, sonotubometry, TTAG, and nasopharyngeal endoscopy).

Patient stratification based on comorbidities, prior radiotherapy, and dominant symptom targets (autophony vs aural fullness) directs individualized care. Management follows a structured, stepwise approach: first-line strategies emphasize conservative measures such as hydration and targeted weight gain; for persistent or severe symptoms, surgical options are considered. In this study, we also present our center's surgical techniques and outcomes at Taichung Tzu Chi Hospital. Available interventions include ventilation tube insertion (30–53% improvement), fat augmentation (70–80%), tragal cartilage insertion (70–82%), and silicone plug surgery (83–86%), each with distinct advantages and limitations.

This study summarizes relative outcomes across interventions and underscores that PETD care is best delivered through tailored, stepwise management. Integrating comprehensive diagnostics with individualized therapy can improve symptom control and patient quality of life.

O06-04

Putamen Hemorrhage Presenting as Simultaneous Bilateral Sudden Sensorineural Hearing Loss－A case report

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Bilateral sudden sensorineural hearing loss (BSSHL) has been known as a threatening sign for underlying systemic diseases, such as autoimmune or cardiovascular conditions. In particular, simultaneous bilateral sudden sensorineural hearing loss(Si-BSSHL) subtype has been less likely to have an idiopathic etiology and reported a significantly worse prognosis for hearing recovery. Herein, we present a rare case of acute putamen hemorrhage as the etiology for Si-BSSHL. We describe a 58-year-old male with end-stage renal disease and a history of intracranial hemorrhage, diagnosed with Si-BSSHL. The condition progressed rapidly with profound hearing loss. The patient also had poor speech discrimination but no other cranial nerve deficits. He was diagnosed with a new intracranial hemorrhage, mainly in right basal ganglion. This case demonstrates that rare intracranial hemorrhage can initially present solely as sensorineural hearing loss.

O06-05

Technical Modifications to Prevent Postoperative Hearing Loss in Facial Nerve Decompression

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Objectives:
Facial nerve decompression may result in postoperative hearing loss due to ossicular manipulation and bony drilling. This study aimed to evaluate the effectiveness of surgical modifications designed to prevent postoperative conductive and sensorineural hearing deterioration.
Methods:
We retrospectively analyzed 112 patients (54 males, 58 females; age range, 10–79 years; median, 54 years) who underwent transmastoid facial nerve decompression at our institution between April 2002 and October 2024, and whose postoperative hearing could be evaluated.
In 103 cases, the short process of the incus was drilled off prior to repositioning in order to prevent postoperative adhesion. In 70 cases, drill speed was limited to 10,000 rpm during manipulation around the geniculate ganglion to minimize vibration-related cochlear damage.
Hearing outcomes were assessed by: (1) changes in pre- and postoperative air- and bone-conduction thresholds, (2) differences in air-conduction thresholds with or without short process drilling, and (3) changes in bone-conduction thresholds with or without drill speed limitation. According to the American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) guidelines, thresholds were calculated as the average of 500, 1000, 2000, and 3000 Hz, with 3000 Hz substituted by the mean of 2000 and 4000 Hz.
Results:
The median air-conduction threshold significantly worsened from 17 dB preoperatively to 19 dB postoperatively. Bone-conduction thresholds changed from 15 dB to 14 dB, without statistical significance.
In the 103 cases with short process drilling, the median air-conduction deterioration was 3 dB, significantly smaller than the 12 dB observed in the 9 cases without drilling. Among the 42 cases without drill speed limitation, deterioration of bone conduction was observed at 4000 Hz, whereas no significant change was detected in the 70 cases with speed limitation.
Conclusions:
Removal of the short process of the incus prior to repositioning effectively prevents postoperative conductive hearing deterioration, while limiting drill speed to 10,000 rpm is effective in preventing high-frequency sensorineural hearing loss. These technical modifications may contribute to reducing the risk of postoperative hearing loss following facial nerve decompression.

Paper7 Rhinology 1

O07-01

Effectiveness of using a bioabsorbable implant (Latera) to treat nasal valve collapse in patients with nasal obstruction

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Introduction: Nasal obstruction is a common clinical complaint. Structural causes may include septal deviation, turbinate hypertrophy, and lateral nasal wall (LNW) insufficiency or collapse. The LATERA® implant (LI), a bioabsorbable nasal implant, received regulatory approval in Australia (ATRG) in 2022 and offers a minimally invasive option for treating dynamic nasal valve collapse and lateral nasal wall insufficiency. The LI is absorbed over approximately 18–24 months provides internal structural support, improving nasal airflow. Despite its growing international use, Australian data remain limited.

Method: The retrospective clinical audit evaluated the short-term effectiveness and safety of LI's in treating nasal obstruction due to lateral wall insufficiency. Data was collected forpatients who received LIs and have documented pre- and post-operative Nasal Obstruction Symptom Evaluation (NOSE) scores.

Results: Twenty patients were included, 6 received LI alone and 14 received LI with other nasal surgeries. There was a statistically and clinically significant reduction in NOSE scores post-operatively ($p < 0.001$, Cohen's $d = 1.80$). Complications related to the LI were minor: implant trimming (n=1), removal (n=2), and extrusion through skin (n=1).

Conclusion: The latera implant appears to be a safe procedure. Patients who had the LI implant had a substantial clinical improvement in nasal obstruction symptoms. This however cannot be attributed to the Latera implants alone as most patients (n=14) had concomitant procedures aiming at addressing sinus and air flow issues.

O07-02

Nasal Bacteriology and Prognostic Implications in Sinonasal and Nasopharyngeal Lymphomas: A Pilot Retrospective Study

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Background:
The role of nasal bacteria in sinonasal and nasopharyngeal (NP) lymphoma remains poorly understood. This exploratory study aimed to characterize the distribution of nasal bacterial species in these lymphomas and assess their association with patient prognosis.
Methods:
We retrospectively reviewed 41 patients diagnosed with sinonasal or NP lymphoma between 2008 and 2024 at a tertiary medical center. Nasal swab cultures were collected at diagnosis prior to initiating cancer treatment. Associations between specific bacterial species and clinical outcomes—death and disease progression—were evaluated in a retrospective cohort design. Overall survival (OS) and progression-free survival (PFS) were estimated using the Kaplan–Meier method and Cox regression, with group differences assessed by the log-rank test.
Results:
The cohort comprised 41 patients (mean age, 65.3 ± 16.6 years; range, 28–91), 63.4% of whom were male. The primary tumor site was the sinonasal cavity in 75.6%, the nasopharynx in 17.1%, and both sites in 7.3%. Histologic subtypes included 29 NK/T-cell lymphomas (NKTCL), 9 diffuse large B-cell lymphomas (DLBCL), and 3 others. In NKTCL, Staphylococcus aureus was the most common species, detected in 48.3% of patients, while other bacteria were found in fewer than 15%. In DLBCL, Pseudomonas aeruginosa was the most common, present in 22.2%. By tumor location, S. aureus was the predominant bacterium in both the sinonasal (38.7%) and NP groups (57.1%). Klebsiella pneumoniae was isolated in 28.6% of NP cases compared with 9.7% of sinonasal cases, and Citrobacter koseri was found exclusively in the sinonasal group. In multivariable Cox regression adjusting for eight confounders, K. pneumoniae positivity was significantly associated with shorter PFS ($p = 0.003$).
Conclusion:
Sinonasal and NP lymphomas show distinct nasal bacterial profiles. Colonization with K. pneumoniae may be linked to a worse prognosis. Further studies are warranted to clarify the prognostic and therapeutic implications of these findings.

O07-03

Effect of House Dust Mite Sublingual Immunotherapy on the Efficacy of Japanese Cedar Sublingual Immunotherapy Against Japanese Cypress Pollinosis

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Background: Sublingual immunotherapy (SLIT) using Japanese cedar (JC) pollen extract has been reported to exert some efficacy on Japanese cypress (JCyp) pollinosis, despite the antigenic differences between the two pollen species (Oka A, et al. Arerugi, 2023). Recent studies suggest that allergen immunotherapy may induce antigen-nonspecific immune tolerance via mechanisms such as IL-10-producing innate lymphoid cell activation. This study aimed to investigate the impact of concomitant house dust mite (HDM) SLIT on the efficacy of JC SLIT in patients with JCyp pollinosis.
Methods: We analyzed data from a multicenter observational study conducted in 2023, which examined the clinical efficacy of JC SLIT during the JCyp pollen season (Oka A, et al. JACI Glob, 2025). Patients were divided into two groups: those receiving HDM SLIT and those not, and the efficacy of JC SLIT during the JCyp pollen season was compared between the two groups.
Results: JCyp pollinosis was present in 84.5% of patients, as evidenced by symptom onset during the JCyp pollen season. Among them, 58.1% reported that JC SLIT was equally or more effective during the JCyp season compared to the JC season, whereas 40.2% perceived reduced efficacy. The group reporting good efficacy had a significantly higher rate of concomitant HDM SLIT administration.
Discussion: Possible mechanisms by which HDM SLIT may enhance JC SLIT efficacy against JCyp pollinosis include induction of antigen-nonspecific immune tolerance, priming effects from HDM exposure, or suppression of nasal mucosal hyperreactivity via inhibition of mucosal priming inflammation (MPI).
Conclusion: Concomitant HDM SLIT may enhance the therapeutic effect of JC SLIT against JCyp pollinosis.
Acknowledgments: We sincerely thank all collaborators in the multicenter observational study:
Atsushi Yuda, Yukiko Ogawa, Aomi Yamashita, Eriko Takahara, Hideki Shirato, Serika Sonoda, Akihiko Terada, Takatsugu Kakuta, Takeshi Masuda, Satoshi Masuno, Kenichi Kanai, Hitoshi Nagakura, Reiko Tokuda, Harumi Arao, Hitoshi Baba, Shigenobu Yasuda, Hideya Mimura, Hideshi Nakazato, Mahoko Nakazato, Noriyuki Hoya, Hideaki Tsuzuki, Masaharu Tokuriki, Mayuko Sakaida, Ryo Amagara, Chikahisa Okawa, Takamitsu Hama, Hiroki Ikeda, Hisaki Fukushima, Junko Niitsu, Tadashi Hyogo, Hirofumi Sakaguchi, Norihito Iba, Hiroshi Kumonomido.
(Names are listed without honorifics.)

O07-04

Is radiological sinonasal disease associated with changes in craniofacial morphology in children? A retrospective CT study

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Background: Mouth breathing in children, an incidence of 53%, has been associated with craniofacial changes such as a ‘long face’ and narrowed maxilla. However, the causal direction remains debated with some studies suggesting mouth breathing leads to these changes, while others proposing that underlying craniofacial traits predispose individuals to nasal obstruction, making mouth breathing a secondary consequence. Much of the early research in this area relied on 2D cephalometry, however, CT can provide 3D imaging which allows for more accurate understanding.

Methods: A retrospective chart review was conducted on CT sinuses and facial bones performed at a tertiary referral centre and its affiliated sites in patients aged 0–18 years. Exclusion criteria included known craniofacial syndromes, prior or pending craniofacial surgery, or incomplete scans. Patients with a Lund-Mackay score >5 or mucosal thickening >3 mm were classified into the radiological sinonasal disease subgroup. All scans were standardised using the Frankfurt Plane. Craniofacial measurements were taken using bony landmarks, including maxillary widths, palate height, piriform aperture dimensions, nasal depth, superior facial height, sagittal and coronal maxillary angle. These were compared to a normative group (Lund-Mackay ≤5). Generalised additive models were used to compare measurements while adjusting for age and sex.

Results: 193 normative scans (114 male, mean age = 9 ± 5.2) and 92 (59 male, mean age 6.5±3.6) were analysed. Estimated differences ranged from a 3.8% decrease to a 1.0% increase in the subgroup relative to the normative group. None of these differences reached statistical significance (all p-values > 0.05).

Conclusions: No significant craniofacial differences were found between children with radiological evidence of sinonasal disease and those without, after adjusting for age and sex. These findings do not support the presence of a consistent craniofacial morphology associated with sinonasal disease in the paediatric population.

Paper8 Others 1

O08-01

Diurnal Expression of Hypoxia-inducible Factor before and after Obstructive Sleep Apnea Surgery

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Introduction: Obstructive sleep apnea (OSA) can generate intermittent nocturnal hypoxia with systemic implications. Serum hypoxia-inducible factor (HIF) is a key transcription factor with diurnal changes that mediates the body's cellular response to hypoxia, and may serve as a biomarker of aging, hypoxic burden and systemic diseases. Current evidence has revealed the potential association between HIF and OSA. However, the response of OSA treatment, especially OSA surgery, on diurnal HIF levels remains understudied. This study aims to elucidate the changes of serum HIF levels among OSA individuals undergoing multilevel OSA surgery.
Methods: This prospective cohort study enrolled OSA patients who had failed conservative treatment (such as continuous positive airway pressure or oral appliance) and then received multilevel OSA surgery afterwards. Participants underwent a full-night polysomnography (PSG) and blood sampling in the daytime and evening to assess the HIF-1α protein expression level in different timings using the enzyme-linked immunosorbent assay (ELISA) technique, which was conducted within one day before the surgery and at least three months after the surgery. Patients were stratified by age to compare the changes of sleep indices and HIF parameters, and to further investigate the age-related differences in hypoxia susceptibility before and after the surgery. Spearman's correlation was further used to identify the potential relationships among changes of HIF and sleep indices in different age groups.
Results: Fifty OSA patients receiving multilevel upper airway surgery were included, and the majority of the sleep parameters in PSG improved after the surgery. Participants who were younger showed a trend of lower HIF-1α protein at baseline despite no significant difference was observed. After the operation, patients who were aged <30 had significant lower postoperative HIF-1α protein level in both the daytime and evening when compared to the groups of "30<=age<40", "40<=age<50", and "age>=50". Moreover, only patients aged <30 had significant reduction in HIF-1α protein level when measured in the daytime. The further Spearman's correlations turned out that change of Epworth Sleepiness Scale scoring was substantially associated with change of daytime HIF-1α protein level postoperatively.
Conclusion: HIF-1α protein level, especially when tested at daytime, may decrease postoperatively in younger patients receiving OSA surgery; this could possibly be associated with a greater improvement of daytime sleepiness status postoperatively. More future studies are still required to understand the complex relationship between HIF and OSA treatment.

O08-02

A Comparative Study of Tongue Base Ultrasonographic Morphology and Tissue Characteristics During Drug-Induced Sleep in Obstructive Sleep Apnea Patients

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Objective:
To investigate the association between tongue morphology and muscle tissue characteristics, as assessed by standardized submental ultrasound, and obstructive sleep apnea (OSA) severity, with additional correlation to drug-induced sleep endoscopy (DISE) findings.
Methods:
Thirty OSA patients underwent laser-guided submental ultrasound during wakefulness and drug-induced sleep. A 30-degree sector scan covered four anatomical regions (A–D), with measurements of tongue width, airway dimensions, and genioglossus backscatter statistics. DISE was performed and tongue base collapse graded using VOTE classification. Correlations with apnea-hypopnea index (AHI) and DISE findings were analyzed.
Results:
Broader, flatter tongue morphology—reflected in higher width-to-thickness ratios—was significantly associated with higher AHI and more severe tongue base collapse during DISE. Lower airspace-to-tissue width ratios at region B were linked to increased collapsibility. Backscatter statistics of the genioglossus muscle showed strong correlations between wakefulness and sleep, suggesting stable tissue composition.
Conclusion:
Standardized submental ultrasound offers a reproducible, non-invasive method to assess upper airway morphology and tissue quality. Key ultrasound features correlate with OSA severity and DISE patterns, supporting its role in OSA phenotyping and treatment planning.

O08-03

Experience with continuous IONM for the accessory nerve during neck dissection

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Injury to the spinal accessory nerve (SAN) is recognized as one of the most serious complications associated with neck dissection, often resulting in significant shoulder dysfunction and impaired quality of life. Preservation of SAN function has therefore become a critical aspect of contemporary head and neck cancer surgery. Intraoperative neuromonitoring (IONM) has been increasingly introduced in various surgical fields, allowing identification and surveillance of nerves, as well as confirmation of their functional integrity at the end of surgery. In the head and neck region, monitoring of the recurrent laryngeal nerve during thyroidectomy is now well established and widely adopted. However, reports of IONM use in head and neck cancer surgery, particularly for the SAN during neck dissection, remain scarce.

Previous studies have described the application of intermittent IONM (iIONM) for the SAN. This technique provides stimulation at selected time points to facilitate nerve identification and to confirm its viability after completion of surgery. While iIONM is useful for avoiding injuries caused by inadequate nerve identification, it remains limited in its ability to detect in real time functional deterioration resulting from subsequent traction, compression, or thermal injury during neck dissection.

To overcome this limitation, we applied continuous IONM (cIONM) for the SAN during neck dissection. To the best of our knowledge, there are no prior reports describing the use of cIONM in this setting. Continuous monitoring allows uninterrupted real-time feedback on neural function throughout the surgical procedure. This provides the surgeon with immediate information on potential injury during dissection, offering the opportunity to modify the surgical technique before irreversible damage occurs. In our experience, cIONM enabled us to evaluate whether our dissection maneuvers were performed in a manner that preserved the functional integrity of the SAN.

Furthermore, because surgical techniques vary considerably among surgeons, cIONM may serve as a valuable quality assurance tool. It allows each surgeon to objectively assess whether their own operative style is protective of the SAN, and it may highlight aspects of the technique that can be refined. Although the routine use of cIONM for all neck dissections may not be feasible due to cost and equipment constraints, we suggest that its application at least once could be beneficial for surgeons to validate and improve their surgical methods.

Our initial experience indicates that cIONM is a feasible and informative approach for SAN monitoring during neck dissection.

O08-04

Potential Benefits of Sleep Surgery in the Prevention of Diabetes among Patients with Obstructive Sleep Apnea

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Background and Objective
Obstructive sleep apnea (OSA) is a well-recognized risk factor for the development of type 2 diabetes mellitus (T2DM). The underlying mechanisms include intermittent hypoxemia, sympathetic activation, and sleep fragmentation, which collectively promote insulin resistance and impair glucose metabolism. Continuous positive airway pressure (CPAP) is considered the standard treatment for OSA; however, its long-term efficacy in improving and preventing diabetes remains inconclusive, largely due to variable adherence and inconsistent metabolic outcomes in longitudinal studies. Sleep surgery, by directly addressing the anatomical causes of OSA, may offer a more durable intervention that not only improves airway patency but also reduces the risk of developing T2DM. This study aimed to evaluate whether sleep surgery can improve insulin sensitivity and exert a preventive effect against diabetes in patients with OSA who are unable to tolerate CPAP therapy.
Methods
We retrospectively analyzed patients with moderate-to-severe OSA who underwent sleep surgery at our institution between 2024 and 2025. Inclusion criteria were age 18–60 years, polysomnography or home sleep apnea test confirmed OSA, and inability or refusal to use CPAP. Patients with major cardiovascular diseases were excluded. Fasting plasma glucose, glycated hemoglobin (HbA1c), and homeostatic model assessment for insulin resistance (HOMA-IR) were measured preoperatively and 6 months after surgery. Paired t-tests were used to compare pre- and postoperative metabolic indices. Subgroup analyses were performed according to body mass index (BMI) and OSA severity.
Results
A total of 42 patients (mean age, 46 years; 90% male) were included, with a mean follow-up period of 6 months. Postoperatively, HOMA-IR values decreased significantly ($p < 0.05$), accompanied by reductions in HbA1c levels and fasting plasma glucose ($p < 0.05$). Patients with higher baseline BMI and more severe OSA demonstrated greater metabolic improvements. These findings suggest that sleep surgery may help improve pre-existing diabetes and prevent the onset of T2DM in high-risk OSA patients.
Conclusion
Sleep surgery significantly improves insulin sensitivity and glycemic parameters in OSA patients, particularly among those unable to tolerate CPAP therapy. Beyond its established role in alleviating airway obstruction, sleep surgery should be considered a potential metabolic intervention with preventive benefits against diabetes. Larger, long-term prospective studies are warranted to confirm the durability of its preventive effects on T2DM incidence.

O08-05

Reduced Risk of Depression After Surgical Treatment for Pediatric Obstructive Sleep Apnea: A 10-Year Nationwide Cohort Study

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Background:
Pediatric obstructive sleep apnea (OSA) has been implicated in various neuropsychiatric comorbidities, yet its potential role in the long-term prevention of depression remains unclear.
Methods:
We conducted a nationwide, population-based cohort study using Taiwan's National Health Insurance Research Database from 2000 to 2020. Children aged 3–18 years diagnosed with OSA were categorized into surgery and non-surgery groups based on receipt of sleep-related surgical intervention. After 1:6 propensity score matching, 62,581 children (8,943 in the surgery group and 53,638 in the non-surgery group) were analyzed. The incidence of depression was assessed over an average follow-up of 5.5 years using Cox proportional hazards models adjusted for age, sex, asthma, eczema, low birth weight, and prematurity.
Results:
During the follow-up period, the incidence of depression was significantly lower in the surgery group (2.86%, 5.03 per 1,000 person-years) compared to the non-surgery group (7.33%, 13.47 per 1,000 person-years). After full adjustment (Model 3), surgical treatment was associated with a 26% reduction in the risk of developing depression (HR = 0.741, 95% CI: 0.625–0.879, $p = 0.0012$).
Conclusion:
Surgical intervention for pediatric OSA is associated with a significantly reduced long-term risk of depression. These findings suggest that early surgical treatment may offer psychiatric benefits beyond respiratory improvement and highlight the importance of timely OSA management in children.

O08-06

Tongue Pressure in Patients with Obstructive Sleep Apnea Syndrome

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Background: This study aimed to investigate the correlation between tongue strength, as measured by the Iowa Oral Performance Instrument (IOPI) in patients with obstructive sleep apnea syndrome (OSAS).
Methods:
The retrospective study included 30 patients who underwent standard polysomnography, DISE, and tongue pressure measurement by IOPI. We evaluate the relationship between tongue pressure with parameters in PSG or DISE fining.
Firth's penalized likelihood approach was used to address small sample size issues and reduce bias.
Results: The study found that mean IOPI tongue pressure was 50.4 ± 15.3 kPa, with no significant gender difference. Our study showed when tongue pressure was less than < 40 kPa, there are higher possibility with tongue base and epiglottic collapse which was noted in DISE procedure.
Conclusion: The study found a correlation between IOPI tongue pressure and anatomical collapse levels during DISE in OSAS. These dress the potential clinical utility of tongue pressure measurement in clinical evaluation in OSAS.

Paper9 Rhinology 2

O09-01

The quantification of P2X3 receptor expression in refractory upper airway tissue

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Introduction: P2X3 receptors, which are involved in ATP release and cytokine production due to airway irritants, have been attracting attention. Since the VAS score for cough is high in bronchial asthma and refractory rhinosinusitis, we attempted to quantify the expression level of P2X3 receptors in the airway mucosa. Method: Cells were disrupted using nasal polyp tissue, and the expression level of P2X3 receptors, IgE, IgG, IgM, specific IgE, cytokine levels, and allergy levels such as galectin-10 were measured and observed using an ELISA assay kit. Results: P2X3 receptors were expressed in nasal mucosa tissue, and in the high expression group, tissue levels of galectin-10, IgG, IgE, mite antigen-specific IgE, Japanese cedar antigen-specific IgE, Alternaria antigen-specific IgE, Aspergillus antigen-specific IgE, and Candida antigen-specific IgE were significantly higher, and tissue levels of IL-4, IL-5, IL-17A, and BLyS were also significantly higher. Discussion: This is the first time that quantitative expression of P2X3 receptors in airway tissues has been demonstrated. There is a high correlation between galectin-10, IgG, IgE, mite antigen-specific IgE, Japanese cedar antigen-specific IgE, Alternaria antigen-specific IgE, Aspergillus antigen-specific IgE, Candida antigen-specific IgE, IL-4, IL-5, IL-17A, and BLyS, and it is necessary to clarify the relationship between P2X3 receptors and clinical symptoms.

O09-02

Prevalence and associated factors of self-reported olfactory dysfunction in Japan: Findings from a nationwide web-based cross-sectional survey

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Objective
Olfactory dysfunction (OD) compromises safety and well-being in humans; however, there is a lack of large-scale Japanese data. Using data from a nationwide web-based survey in Japan, we quantified the prevalence of subjective chronic OD (self-reported olfactory impairment persisting ≥3 months), identified associated health and occupational factors, and evaluated determinants for severity.
Methods
We analyzed data from the Japan Coronavirus Disease 2019 and Society Internet Survey 2023, which is a stratified, nationwide, cross-sectional survey of community-dwelling Japanese residents. Of the initial 33,000 participants, we used the data from 25,569 participants (12,323 males, 13,246 females), after excluding those with implausible responses and missing data, to calculate prevalence. Inverse probability weighting was used to align the sample with the 2019 National Living Conditions Survey. We tested group differences concerning the presence and severity of OD with χ^2 or Wilcoxon tests after excluding participants with additional missing data. We examined independent associations using weighted multivariable logistic regression analyses.
Results
The weighted prevalence of chronic subjective OD was 1.3% (95% CI 1.1–1.4); age-specific rates ranged from 0.6% (40–49 years) to 2.1% (60–69 years). Independent OD correlates included current smoking (OR 2.08, $p = 0.016$), homeworking (OR 2.70, $p = 0.005$), somatic symptoms (Somatic Symptom Scale-8 score ≥ 12; OR 2.68, $p = 0.005$), dysgeusia (OR 214.3, $p < 0.001$), current hypertension (OR 3.71, $p = 0.005$), past diabetes (OR 6.79, $p < 0.001$), current bronchial asthma (OR 6.10, $p < 0.001$), current allergic rhinitis (OR 1.90, $p = 0.018$), and moderate-severe presenteeism (Work Functioning Impairment Scale score ≥ 21; OR 3.34, $p < 0.016$). Greater severity was predicted by female sex (OR 2.98, $p = 0.035$, for moderate-severe vs mild) and ≥1 day of sick absences in the previous month (OR 3.17, $p = 0.044$).
Conclusion
The prevalence of subjective OD in Japan was 1.3%. Homeworking and moderate-severe presenteeism were associated with OD and absenteeism was associated with moderate-severe OD. Further studies investigating the relationship between OD and work productivity are warranted.

O09-03

Septomeatoplasty Improves Mucociliary Clearance and Symptom Burden

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Background : Septomeatoplasty is a common intervention in CRS, but its impact on mucociliary clearance and symptom profiles requires further evaluation.
Objective: To assess pre- vs postoperative changes in saccharin transit time (STT) and associated symptom improvements following septomeatoplasty.
Methods: Patients undergoing septomeatoplasty (N=191) were assessed at baseline and follow-up. STT was measured as a surrogate for mucociliary clearance. Symptoms (nasal obstruction, smell/taste loss, fatigue, anxiety, productivity loss) were scored using validated questionnaires. Paired t-tests compared pre/post STT and symptom scores. Subgroup analysis examined patients with pale vs injected mucosa.
Results: Mean STT significantly decreased postoperatively (pre: 1180±460s vs post: 640±280s, $p<0.001$), indicating improved mucociliary clearance. Nasal obstruction scores improved by 2.1±1.0 points ($p<0.001$), with parallel improvements in smell/taste function. Psychological and fatigue scores also improved modestly ($p<0.05$). Patients with pale mucosa had greater STT improvement (Δ600s) than those with injected mucosa (Δ320s, $p=0.04$).
Conclusion: Septomeatoplasty enhances mucociliary clearance and alleviates both nasal and systemic symptoms. Improvement is most pronounced in patients with pale mucosa, suggesting potential as a prognostic marker. These findings support septomeatoplasty as an effective intervention not only for anatomical correction but also for functional restoration of mucociliary clearance.

O09-04

Dual blockade of IL-4 and IL-13 with dupilumab ameliorates sensorineural olfactory dysfunction in mice with eosinophilic sinonasal inflammation

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Background: Dupilumab, an antibody that binds IL-4RÎ± and inhibits IL-4 and IL-13 signals, has demonstrated efficacy in chronic rhinosinusitis with nasal polyps (CRSwNP) primarily characterized by type 2 inflammation. Current evidence suggests that the rate of improvement in olfactory dysfunction with dupilumab exceeds that of nasal polyp reduction, yet the underlying mechanism remains undisclosed. We hypothesize that dupilumab may initially ameliorate sensorineural olfactory dysfunction.

Methodology: Male BALB/c mice were intranasally administered ovalbumin and Aspergillus protease for 12 weeks to induce eosinophilic sinonasal inflammation. Dupilumab treatment was also administered. The mice underwent histological assessment, olfactory behavioural test, and gene expression profiling to identify neuroinflammatory markers within the olfactory bulb.

Results: Dupilumab treatment resulted in a reduction in the number of mucosal protruding lesions, as well as decreased infiltration of eosinophils and neutrophils, along with a decrease in olfactory sensory neuron injury. Furthermore, there was a downregulation in the mRNA expression related to microglia activation and neuroinflammation in the olfactory bulb.

Conclusions: Dupilumab improves the sensorineural pattern of olfactory dysfunction in mice, potentially explaining why olfaction improves more rapidly than polyp reduction in patients with CRSwNP.

O09-05

The Impact of Oral Antihistamines on the Clinical Course of Acute Rhinosinusitis

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Objectives: Oral antihistamines are commonly used to alleviate symptoms of acute rhinosinusitis, though evidence supporting their effectiveness is limited. This study aims to evaluate the impact of oral antihistamines on the clinical course of acute rhinosinusitis.

Methods: We retrospectively reviewed the medical records of adult patients diagnosed with acute rhinosinusitis who received outpatient care at the Department of Otolaryngology, Taipei Veterans General Hospital, between January and December 2020. We analyzed clinical characteristics, bacterial cultures, endoscopic findings, and antibiotic use during treatment.

Results: A total of 36 patients diagnosed with acute rhinosinusitis were included in the study, with 18 patients having used oral antihistamines and 18 patients who had not. There were no statistically significant differences between the two groups in terms of average age, gender, or medical history. The most commonly isolated bacterial species from nasal cultures were *Staphylococcus aureus* and *Pantoea dispersa*. Antihistamine use was significantly associated with modifications to antibiotic regimens during the treatment course (P=0.026). The antihistamine group had a significantly longer duration of abnormal endoscopic findings compared to the non-antihistamine group (26.5±22.0 vs. 14.4±8.4 days, mean±standard deviation, P=0.040). The mean duration of antibiotic use was longer in the antihistamine group, showing a trend toward significance (19.9±10.8 vs. 14.3±6.8 days, mean±standard deviation, P=0.070).

Conclusion: Patients with acute rhinosinusitis who used antihistamines experienced a prolonged disease course and required a longer duration of antibiotic treatment, with greater need of regimen modifications. Based on these findings, we recommend against the use of antihistamines in the treatment of acute rhinosinusitis.

Paper10 Rhinology 3

O10-01

Two cases of squamous cell carcinoma of the paranasal sinuses with orbital invasion in which radiation therapy was performed first, followed by endoscopic transnasal resection of residual or recurrent tumors

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In sinonasal squamous cell carcinoma, skull base or orbital invasion is frequently observed at the time of diagnosis, which makes it necessary to select treatment strategies that balance curative potential with functional preservation. For advanced cases, surgical options generally include total maxillectomy with external incision and flap reconstruction, or combined transcranial–endonasal tumor resection. However, both approaches are highly invasive and associated with significant morbidity. At our department, the primary strategy for sinonasal cancer is chemoradiotherapy, and salvage surgery is performed only if residual tumor remains. Here, we present two representative cases in which this strategy enabled less invasive procedures.

Case 1: A 62-year-old male with left sinonasal squamous cell carcinoma (cT4bN0M0, stage IVB) showed invasion of the medial rectus muscle and skull base destruction on MRI. After induction chemotherapy with docetaxel plus cisplatin, the patient underwent proton beam therapy with concurrent cisplatin (74 GyE) and achieved complete response. At 18 months post-treatment, recurrence was detected at the base of the left middle turbinate and diagnosed as mucoepidermoid carcinoma. Salvage endoscopic resection was performed. Intraoperatively, the tumor was adherent to the orbital medial periosteum, but careful dissection along the subperiosteal plane enabled complete removal with negative margins.

Case 2: A 65-year-old male with left sinonasal squamous cell carcinoma (cT3N0M0, stage III) received chemoradiotherapy with carboplatin and 5-fluorouracil (IMRT, 70 Gy). Residual tumor persisted on the orbital medial wall after irradiation, and salvage endoscopic resection was carried out one month later. Preoperative CT suggested bone defects of the anterior cranial base and orbital medial wall, raising suspicion of orbital invasion. However, intraoperatively, the cribriform plate of the ethmoid bone was preserved, and the orbital medial wall could be separated safely above the periosteum.

In both cases, curative resection would have required total maxillectomy with free-flap reconstruction. By administering chemoradiotherapy first and then performing surgery after tumor shrinkage, curative resection was achieved with significantly reduced invasiveness. This treatment sequence may help preserve function and quality of life in patients with sinonasal carcinoma where radical surgery would otherwise be unavoidable.

O10-02

Split face comparison of topical arnica montana for post rhinoplasty ecchymosis and oedema

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Rhinoplasty is one of the most commonly performed facial plastic surgeries, but its post-operative sequelae, particularly oedema and ecchymosis, can be distressing and debilitating for patients. These side effects can affect social interactions, delay return to activities of daily living (ADLs) and extend recovery time. While rhinoplasty surgeons often inform patients that nasal oedema can take up to a year to resolve, there is currently no standardized treatment to accelerate recovery[1-2]. The aim of this study is to evaluate the efficacy of topical Arnica Montana cream in reducing post-rhinoplasty oedema and ecchymosis. Arnica Montana, known for its anti-inflammatory and bruise-healing properties, is widely used in both oral and topical forms, though scientific evidence regarding its effectiveness in post-operative care remains limited [3]. This pilot study utilised a split-face design, where 15 patients undergoing rhinoplasty applied Arnica Montana cream to one side of the face and a placebo or no treatment to the other side. Clinical photography and self-portraits were used to monitor changes in oedema and ecchymosis over a 7-day period. Comparison utilised the Totonchi and Guyuron scale, as well as computer generated colour matching algorithms.[4] Two facial plastics trained surgeons then independently assessed the severity of oedema and ecchymosis using clinical photography and self-portraits. Results provided preliminary evidence supporting significant improvement of post-rhinoplasty ecchymosis and oedema with Arnica Montana cream use.

O10-03

The internal carotid artery may pass through the most posterior ethmoid sinus (Onodi cell)

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We have proposed a classification of the Onodi cell and sphenoid sinus using sagittal CT.
These are Skulll base type, Optic canal, Sella, Infra-Sella type. The Sella, Infra-Sella type features the optic canal entirely traversing the Onodi cell and not passing within the sphenoid sinus. This means the cavernous sinus portion of the internal carotid artery runs within the ethmoid sinus, necessitating particular caution during ESS.

O10-04

Comparative Outcomes of Septomeatoplasty Combined with Posterior Nasal Neurectomy in Patients with Chronic Rhinitis

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Background: Septomeatoplasty (SMP) is a primary surgical procedure for improving nasal obstruction, whereas posterior nasal neurectomy (PNN) alleviates intractable allergic rhinitis by interrupting parasympathetic innervation of the nasal mucosa. The combined use of SMP and PNN has been increasingly adopted, but its clinical efficacy remains uncertain. This study aimed to evaluate treatment outcomes according to immunologic profiles.
Methods: We prospectively collected patients who underwent SMP combined with PNN between March 2023 and May 2025. Preoperative assessments included allergy history, serum IgE concentration, Phadiatop reactivity, and multiple allergen simultaneous testing (MAST). Outcomes were evaluated using the Total Nasal Symptom Score (TNSS) and Sino-Nasal Outcome Test–22 (SNOT-22) at baseline and postoperatively at 2 weeks, 1 month, 3 months, 6 months, and 12 months. Subgroup analyses were performed according to serum IgE levels (0–100, 100–500, >500 IU/mL), Phadiatop positivity, and MAST sensitization (0–2, 3–5, ≥6 allergens).
Results: Fifty-four patients were included (26 men and 28 women; mean age, 33.2 years). Overall, both TNSS and SNOT-22 were significantly reduced at all postoperative time points compared with baseline ($p<0.001$), with early improvements observed at 2 weeks and maintained up to 12 months. In IgE subgroup analyses, patients with IgE 100–500 IU/mL demonstrated durable improvement throughout follow-up ($p<0.005$), while those with IgE 0–100 IU/mL also showed sustained benefit at most time points. By contrast, patients with IgE >500 IU/mL exhibited significant short-term improvement but lost significance at 12 months (TNSS, $p=0.12$; SNOT-22, $p=0.14$), with outcomes significantly worse than those in lower-IgE groups at 1, 6, and 12 months (all $p<0.05$). Both Phadiatop-positive and negative patients achieved significant postoperative improvement ($p<0.0001$), with no between-group differences. In the MAST analysis, patients sensitized to 0–2 allergens showed durable benefit ($p<0.0001$), whereas those with 3–5 or ≥6 allergens lost significance at 12 months (TNSS, $p=0.10$; 0.15; SNOT-22, $p=0.09$; 0.056). Long-term outcomes were significantly poorer in patients sensitized to ≥6 allergens compared with those sensitized to 0–2, and at 12 months, the 0–2 allergen group outperformed the 3–5 group ($p<0.05$). Subdomain analyses showed that rhinologic symptoms improved most consistently; extra-nasal and psychological domains exhibited attenuated benefit over time in patients with high IgE and multiple sensitizations, whereas sleep dysfunction improved across all subgroups.
Conclusions: SMP combined with PNN provides effective and sustained symptom relief in patients with intractable rhinitis. However, elevated IgE levels and broad allergen sensitization are risk factors for diminished long-term efficacy, particularly for extra-nasal and psychological symptoms. Sleep outcomes, in contrast, improved consistently in all patients. These findings highlight the clinical value of immunologic profiling in preoperative assessment and long-term management of chronic rhinitis.

O10-05

Symptom and Quality of Life Improvement After Endoscopic Sinus Surgery in Patients with Chronic Rhinosinusitis Phenotypes

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Chronic rhinosinusitis (CRS) affects 3–6.4% of the population in Taiwan. Treatments include antibiotics, saline irrigation, intranasal corticosteroids, systemic steroids, leukotriene receptor antagonists, immunomodulators, and biologics. Functional endoscopic sinus surgery (FESS) remains a key option for chronic cases and acute complications.

This study evaluated symptom and quality-of-life improvements after FESS across different CRS phenotypes. We retrospectively reviewed patients who underwent FESS at our hospital from 2015 to 2020. Patients were classified into CRS phenotypes and assessed using the Sino-Nasal Outcome Test-22 (SNOT-22) before surgery and at 2 weeks, 1 month, and 3 months postoperatively.

A total of 523 patients (mean age 47.2 years) were included. They were categorized into CRSwNP with eosinophilic CRS (eCRS, n=198, 37.9%),

CRSwNP non-eCRS (n=134, 25.6%), isolated sinusitis (n=88, 16.8%), central compartment atopic disease (CCAD, n=75, 14.3%), and allergic fungal rhinosinusitis (AFRS, n=28, 5.3%). Baseline mean SNOT-22 scores ranged from 30.5 to 36 across groups. Postoperatively, all groups demonstrated symptom reduction, with greater improvements observed in CRSwNP-eCRS, isolated sinusitis, and AFRS. Statistically significant score reductions were recorded in these groups at different follow-up points, with the most pronounced improvement noted at 3 months in the CRSwNP-eCRS cohort (-19.6).

In conclusion, FESS significantly improves subjective symptoms and quality of life in CRS patients, particularly those with CRSwNP-eCRS, isolated sinusitis, and AFRS phenotypes. These findings highlight the importance of phenotype-based evaluation in predicting surgical outcomes.

Paper11 Laryngology 1

O11-01

Growth and development of the human laryngeal functions

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Purpose: The roles of the human larynx are respiration (airway), protection of the lower airway and phonation. However, newborns' larynges are similar to other primates and do not yet have the same functions as adults. This study investigated the growth and development of the three laryngeal functions, especially the relationships to each other.

Methods: Human larynges obtained from autopsy cases were investigated using whole organ serial section studies. Our previous investigations are summarized.

Results: 1. The newborn posterior glottis (intercartilaginous portion, respiratory glottis) occupied approximately 70% of the entire glottis and was covered with respiratory epithelium. At birth, there was no structure corresponding to the vocal ligament and no layered structure like that found in the adult vocal fold. Consequently, the newborn glottis appeared to be favored for respiration over phonation. The newborn larynx had not descended and did not have vocal tract.

2. In order to develop the vocal tract for speech production, the human larynx descends as the children grow in the first 9 years of life. Our research revealed the preepiglottic space, occupying a small area just anterior to the epiglottis at birth, existed astride the epiglottis and grew as the larynx descended and the vocal tract developed. Consequently, distribution of the preepiglottic space allowed the epiglottis to more effectively play the role of retroflection during swallowing in order to prevent aspiration.

3. Development of the vocal ligament and layered structure of the vocal fold was complete by the end of adolescence. And the human child glottis acquired the dimensions and morphological characteristics for phonation as adults.

Conclusions: In order of functional priority, the functions of the human larynx are respiration (airway), protection of the lower airway during swallowing and phonation. The human speech faculty grows and develops in conjunction with other laryngeal functions.

O11-02

Managing a Deep Neck Abscess in a Taiwanese Tourist in Japan: Language Barriers and Cross-border Coordination

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With the recent surge in inbound tourism to Japan, the number of foreign patients with limited Japanese or English proficiency has increased. We report a case of a Taiwanese tourist with a deep neck abscess and laryngeal edema requiring emergent surgery, highlighting the challenges of language barriers and cross-border medical coordination.

A 57-year-old Taiwanese female tourist developed worsening sore throat and dysphagia on the fourth day in Japan. On the fifth day, she experienced dyspnea and was diagnosed with a left deep neck abscess at a general hospital. Due to language barriers and the need for urgent surgery, she was referred to Niigata University hospital.

On admission, she presented with left floor-of-mouth necrosis, and swelling extending from the left submandibular area to the anterior neck. Computed tomography revealed abscess formation extending to the left parapharyngeal space. Fiberoptic laryngoscopy confirmed laryngeal edema. She could not understand Japanese or English, thus we used a translation tool to convert Japanese consent documents into Chinese to explain the need for emergent surgery and obtained informed consent. She underwent a tracheostomy under local anesthesia, followed by incision and drainage of the abscess under general anesthesia, and was managed postoperatively in the Intensive Care Unit. Communication with her family in Taiwan was facilitated via video calls. At postoperative day 5, she was transferred to the inpatient ward, and communication was conducted using writing and translation devices. On day 10, a speech cannula was placed, enabling more effective communication. On day 14, the tracheostomy was closed. During her prolonged hospital stay, we coordinated her repatriation by providing clinical information to an ENT physician at a general hospital in Taipei via email. As she was not covered by Japanese public health insurance, she incurred approximately USD 18,000 in medical expenses, which she paid in full before discharge. She returned to Taiwan on postoperative day 28 and later informed us of her stable condition.

Deep neck abscess is a rapidly progressing, life-threatening emergency. Managing such cases in foreign tourists presents unique challenges, including language barriers, cross-border coordination, and high medical costs. Although we successfully managed this case using translation tools, video calls, and email, the process depended heavily on individual physician's effort. Future systems should ensure that all staff can manage foreign patients seamlessly, supported by medical interpreters, translation devices, multilingual materials, and liaison offices for foreign patients.

We thank the patient and Taiwanese medical staff for their cooperation.

O11-03

The Role of Cricoarytenoid Joint Ankylosis in Bilateral vocal cord immobility

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Objectives:
To stratify the severity of cricoarytenoid joint fixation (CAJF) by surgery and understand the role of it played in the bilateral vocal fold immobility (BVFI) investigate the impaction on the outcomes of phonation and respiration after surgery. The second objective emphasizes on the significance of the preoperative differential diagnosis from neurogenic immobility with medical history and endoscopic findings.
Methods:
A retrospective review was conducted of 90 patients at Tzu-Chi hospital Taipei branch between 2005 and 2024. Careful medical history inquiry, and videolaryngoscopy are conducted to recruit the appropriate surgical candidates. All patients underwent arytenoid remobilization (AR) followed by vocal fold medialization with arytenoid adduction (AA) or lateralization with suture lateralization (SL). The severity of CAJF is graded during the operation or inferred based on the period from operation to recurrence.
Result:
Nineteen patients with an age range between 18 – 90 years presented with ventilation problem in 15, 4 dyspnea and 11 artificial airways, and voice problem in 4 patients. Using AR procedure, the SL procedure decannulated 82% (9/11) of the artificial airways and improved the airway patency in 100% (4/4) of the non-tracheostomized subjects despite the severity of CAJF. On the contrary, two patients without AR procedure have recurrent dyspnea or undecannulation because of wrong diagnosis and resultant inappropriate management; SL without AR. Although they were excluded from this study, they will be used for comparison. Using AR procedure, the AA procedure corrected 75% (3/4) of aphonia subjects into voiced sound without airway compromise and one unsatisfied voice (grade II) because of insufficient AR procedure. Therefore, using careful medical history and videolaryngoscopic findings, the correct diagnosis rate is 100% (19/19). The severity of joint ankylosis is distributed as follow. In aphonia group: grade I: 3 subjects, grade II: 1 subject, and grade III: 0 subject. In ventilation group: grade I: 2 subjects, grade II: 7 subject, grade III: 6 subjects. The follow-up period was averaged in 59 months and 14 months at least.
Conclusion
From this experience, it is the accurate preoperative diagnosis instead of the severity of CAJF that determines the successful rate in airway patency and voiced phonation if the AR procedure is utilized. Careful medical history inquiry and videolaryngoscopic examination can correctly differentiate the mechanical from neurogenic origin without the help of EMG.

O11-04

REM-OSA as a physiological phenotype -the prevalence, clinical characteristic, and outcome predictor

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Objective
Rapid eye movement-related obstructive sleep apnea (REM-OSA) represents a distinct physiological phenotype of OSA, often underrecognized despite its clinical significance. The prevalence, clinical profile, and role of REM-OSA in predicting treatment outcomes remain inadequately defined. The objectives of this study are to determine the prevalence and clinical characteristics of REM-OSA in patients undergoing palatal surgery for OSA, and to evaluate its predictive value for surgical outcomes.
Methods
This retrospective cohort study was conducted over a two-year period at a tertiary referral sleep center. Adult patients with OSA who underwent palatal surgery for snoring and had complete polysomnographic data were included. REM-OSA was defined as a REM-AHI (apnea-hypopnea index) at least twice the NREM-AHI (non-REM AHI). Surgical success was defined as a >50% reduction in AHI and a postoperative AHI <20 events/hour. Logistic regression analysis was performed to assess the association between REM-OSA and surgical success, with results expressed as odds ratios (OR) and 95% confidence intervals (CI). A receiver operating characteristic (ROC) curve was constructed to evaluate the predictive value of the REM-OSA model for surgical success. The primary outcome was the surgical success rate in REM-OSA versus NREM-OSA. Secondary outcomes included the prevalence and clinical features of REM-OSA.
Results
Among 90 surgical OSA patients, 24 (26.7%) met the criteria for REM-OSA. Compared to the NREM-OSA group, REM-OSA patients were younger (35 vs. 39 years, $p = 0.043$) and exhibited less severe disease (AHI: 36.4 vs. 52.0 events/hour, $p = 0.005$). Although the reduction in AHI did not differ between the two groups (26.7 vs. 29.6, $p = 0.187$), REM-OSA group demonstrated a significantly higher surgical success rate than NREM-OSA group (79.2% vs. 53.0%, $p = 0.007$). Logistic regression analysis identified REM-OSA as an independent predictor of surgical success (OR = 4.3; 95% CI: 1.45–12.71; $p = 0.007$). Receiver operating characteristic curve analysis also demonstrated that the model of REM-OSA was a significant predictor of surgical success (AUC = 0.67, 95% CI: 0.55–0.78; p=0.007).
Conclusions
REM-OSA was present in nearly a quarter of surgical OSA patients and was associated with younger age and milder disease. Despite similar reductions in AHI, REM-OSA patients achieved significantly higher surgical success. These findings suggest that REM-OSA as a physiological phenotype may serve as a clinical predictor of favorable outcomes following palatal surgery for OSA.

O11-05

Transdisciplinary Intervention for Obesity Hypoventilation Syndrome: Prevalence, Clinical Predictors, and Surgical Outcomes

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Importance: Obesity hypoventilation syndrome (OHS) is a serious but frequently underrecognized complication in individuals with obesity and obstructive sleep apnea (OSA). Despite its clinical relevance, the prevalence, diagnostic predictors, and optimal surgical treatment strategies for OHS remain poorly defined.
Objective: To determine the prevalence of OHS among individuals with obesity and OSA, identify clinical predictors of OHS, and evaluate the therapeutic efficacy of a transdisciplinary intervention—combined airway and bariatric surgery (CABS).
Design, Setting, and Participants: This prospective cohort study was conducted over two years at a tertiary referral sleep center. Adults with OSA (apnea-hypopnea index [AHI] ≥5 events/hour) and obesity (body mass index [BMI] ≥30 kg/m²) were recruited. Arterial blood gas analysis was used to assess for daytime hypercapnia ($PaCO_2$ ≥45 mmHg), and pulmonary function testing was conducted to exclude other causes of alveolar hypoventilation.
Interventions: Participants received either CABS or positive airway pressure (PAP) therapy based on shared decision-making.
Main Outcomes and Measures: Primary outcomes included changes in AHI, BMI, $PaCO_2$, Epworth Sleepiness Scale (ESS), and forced vital capacity (FVC). Secondary analyses included the development of a predictive model for OHS.
Results: Of the 36 individuals with obesity and OSA enrolled, 9 (25%) met diagnostic criteria for OHS. Multivariate logistic regression analysis identified BMI and ESS as significant predictors of OHS after adjustment for sex (Nagelkerke R^2 = 0.77). Receiver operating characteristic curve analysis identified optimal thresholds for predicting OHS: BMI ≥35.5 kg/m² (AUC = 0.85), ESS ≥12 (AUC = 0.72), and novel OHS prediction score >20 (AUC = 0.94). Among the 9 individuals with OHS, 6 underwent CABS, which led to significant improvements at one-year follow-up: AHI decreased from 98.1 to 26.8 events/hour, BMI from 40.1 to 29.1 kg/m², $PaCO_2$ from 50.2 to 37.9 mmHg, and FVC increased from 3.2 to 4.0 L (all P = .03).
Conclusions and Relevance: OHS was identified in 25% of individuals with obesity and OSA. Clinical predictors included elevated BMI and ESS scores. CABS was associated with significant improvements in respiratory, metabolic, and functional outcomes, supporting its potential as a comprehensive treatment strategy for individuals with OHS.

O11-06

The Effects of the Dehydrated Human Amnion/Chorion Membrane on Shell-less Chorioallantoic Membrane after Photoangiolytic Laser Application

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Background:
Photoangiolytic lasers have yielded significant innovation in laryngeal surgery recently. Although these lasers have desired tissue effects, collateral tissue damage may accompany then cause possible vocal fold scar. The dehydrated human amnion/chorion membrane (DHACM) has been proven to have regenerative potential, as it contains numerous growth factors. The shell-less incubation system for the chick chorioallantoic membrane (CAM) simulates the microvasculature of the human vocal fold and is useful for testing effects of laser and in simulated surgery. The current study investigated the biocompatibility and effects of DHACM for regeneration of the vocal fold mucosa.

Methods:
The shell-less incubation system contains: polymethylpentene film (used as a culture vessel), calcium lactate and distilled water supplementations. By using this system, the CAM can be fully exposed with a good field for surgery simulation. Two groups of CAM were divided: laser treatment with DHACM application (10 CAMs) and laser treatment without DHACM application (10 CAMs). The regenerative effects were examined 3 days and 7 days later by histological and immunohistochemical examination.

Results:
In immunohistochemical stain, DHACM application group showed high Ki67. In histology, DHACM-applied vocal folds showed a significantly higher density of hyaluronic acid and lower density of collagen compared with non-DHACM-applied group.

Conclusions:
The current study suggests biocompatibility and possible regenerative effects of DHACM for vocal folds after photoangiolytic laser treatment.

Paper12 Laryngology 2

O12-01

interventional drug-induced sleep endoscopy -- a novel technique for sleep surgeon

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Background:
Drug-Induced Sleep Endoscopy (DISE) is widely used for the dynamic assessment of upper airway collapse in obstructive sleep apnea (OSA). While conventional DISE enhances diagnostic accuracy, it has limitations in predicting surgical outcomes. Interventional DISE, incorporating maneuvers such as velum anterior displacement (Vad), head rotation, and jaw thrust, represents a novel technique designed to simulate intraoperative modifications and refine treatment planning .

Objectives:
This presentation introduces interventional DISE with Vad as an innovative method to evaluate changes in airway collapse patterns, aiming to improve prognostication and guide surgical decision-making in OSA patients.

Methods:
We conducted an institutional analysis of **144 adult patients** (age range 26–74 years; mean 41.2 years) who underwent interventional DISE with Vad between January 2021 and December 2024. Upper airway collapse was classified across velum, oropharynx, tongue base, and epiglottis before and after Vad maneuver. Collapse patterns were documented and analyzed to identify shifts in obstruction sites and severity .

Results:
Vad produced significant alterations in airway dynamics. Oropharyngeal total collapse decreased markedly with Vad, while tongue base obstruction showed no significant change. Conversely, epiglottic collapse increased substantially (from 9.7% to 27.7%). Complete concentric collapse of the velum persisted as a poor prognostic marker. Tongue base collapse (29.7%) was common and highlighted the risk of failure with single-level surgery, emphasizing the need for multilevel surgical planning (e.g., tongue base surgery and/or tongue suspension). The increased epiglottic collapse after Vad may help explain residual or recurrent OSA following palatal surgery .

Conclusion:
Interventional DISE with Vad is a promising evolution of conventional DISE, offering new insights into the dynamic interactions of upper airway structures. By uncovering hidden collapse patterns and modifying obstruction profiles, it provides more accurate prognostic information and supports individualized surgical strategies. Further validation through prospective controlled trials is warranted to establish its role in routine clinical practice.

O12-02

Effects of Obstructive Sleep Apnea Treatment on Blood Biomarkers of Alzheimer's Disease: A Prospective Clinical Study

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Introduction: The relationship between obstructive sleep apnea (OSA) and Alzheimer's disease (AD) has attracted increasing attention. Intermittent hypoxia and sleep fragmentation associated with OSA may accelerate neurodegenerative changes and increase the risk of AD. This study aimed to investigate whether OSA treatment, particularly surgical intervention, influences blood biomarkers associated with AD and other neurodegenerative diseases.
Materials and methods: This three-year prospective, non-randomized study enrolled 73 patients with severe OSA (AHI ≥30) at Chiayi Chang Gung Memorial Hospital. Patients received either CPAP, sleep surgery, or conservative treatment, with an additional group of patients with dementia as a reference. Plasma levels of several biomarkers—including amyloid β1-40 (Aβ1-40), amyloid β1-42 (Aβ1-42), Tau protein, neurofilament light chain (NFL), and TDP-43—were measured at baseline and at 3, 6, and 9 months post-treatment using immunomagnetic reduction (IMR) technology.
Results: Significant reductions in the Aβ1-42/Aβ1-40 ratio were observed in both the CPAP and surgical groups at 6 and 9 months post-treatment ($p < 0.05$). In the surgical group, the ratio decreased by 18.4% at 6 months (95% CI: -30.7% to -6.0%) and 22.1% at 9 months (95% CI: -34.0% to -10.1%). In the CPAP group, reductions of 14.7% (95% CI: -28.6% to -0.9%) at 6 months and 19.5% (95% CI: -33.3% to -5.7%) at 9 months were noted. Additionally, the Aβ1-42 concentration in the surgical group showed a significant decline of 17.9% at 9 months (95% CI: -29.8% to -6.0%). No statistically significant changes were observed in Tau, NFL, or TDP-43 across all groups and timepoints, suggesting limited short-term response.
Conclusions: This study indicates that effective treatment of OSA, especially through surgery, may help reduce blood-based biomarkers linked to Alzheimer's disease, particularly Aβ1-42 and its ratio to Aβ1-40. These findings suggest potential clinical value in AD prevention. However, changes in other neurodegenerative markers such as Tau and TDP-43 were not significant in the short term, highlighting the need for longer follow-up to elucidate long-term effects.

O12-03

Preliminary results of a novel oxygenation protocol for CO2 laser repair of deep interarytenoid notch and type 1 laryngeal cleft

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Introduction:
A variety of ventilation techniques exist for carbon dioxide (CO_2) laser assisted transoral repair of deep interarytenoid notch (DIN) and type 1 laryngeal clefts (T1LC). Spontaneous ventilation allows optimal views of the larynx but requires precise coordination between the surgical and anaesthetic team to allow efficient and safe surgery. This article of provides the preliminary results of a novel oxygenation protocol for CO_2 laser repair of DIN and T1LC.

Methodology:
Surgical and anaesthetic data were prospectively collected for all CO_2 laser assisted transoral repair of DIN and T1LC from May 2025 at Perth Children's Hospital. Baseline demographic data collected included age, weight, comorbidities, dysphagia status, prolonged antibiotic use, and presence of wet cough at the time of surgery. Anaesthesia was maintained with total intravenous anaesthesia and oxygen delivery was 2L/kg via high flow nasal cannula during spontaneous ventilation. All patients were preoxygenated with 100% FiO_2. After preoxygenation, the FiO_2 was turned down to room air. At 10 seconds, CO_2 laser was placed on standby and at approximately 20 seconds post cessation of 100% FiO_2, CO_2 laser surgery was performed. Intraoral FiO_2 was measured at time points: 0s, 10s, 20s, and 60s post cessation of 100% FiO_2 delivery. Patient SpO_2 were also measured at the above timepoints. Time for patient to desaturate to 92% SpO_2 and time until patients required reoxygenation were measured. Intraoperative and postoperative complications were recorded.

Results:
From May to August 2025, 7 patients received CO_2 laser assisted transoral repair of deep interarytenoid notch and type 1 laryngeal clefts. The average age was 26.7 months with a mean weight of 12.4kg. Four patients had respiratory comorbidities and chronic wet cough. No patients had cardiac or neurological comorbidities. A total of 20 CO_2 laser applications occurred over the 7 patients. The average time until desaturation to SpO_2 92% was 63s across the 7 patients. The two patients that were on a prolonged course of azithromycin maintained an SpO_2 above 92%. The median intraoral FiO_2 at 20s post cessation of 100% FiO_2 across all 20 CO_2 laser cycles was 0.265 (IQR 0.23 – 0.29). The average SpO_2 at 60s was 92.4%. Across all patients, the mean duration of CO_2 laser application was 103 seconds (SD 43.1), with a mean SpO_2 of 88.8% (SD 6.0) immediately prior to reoxygenation. No complications occurred for any patients.

Conclusions:
The preliminary results suggest that safe FiO_2 levels for CO_2 laser are achieved at approximately 20s post cessation of 100% FiO_2 delivery with spontaneous ventilation. Further data is being collected.

O12-04

Histological Changes in the Acute Phase Following Single-Dose Radiation Exposure to the Mouse Vocal Fold Lamina Propria

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[Background]: Radiation-induced scarring of the vocal fold (VF) in the layer of superficial lamina propria (SLP) is a major cause of long-term dysphonia after radiotherapy, yet no established preventive or therapeutic strategies exist. From a clinical perspective, therapeutic intervention is unlikely to be effective once scarring becomes established in the chronic phase; instead, intervention during earlier stages may be more feasible and beneficial. This study therefore aimed to clarify histological changes and cell proliferation in the SLP layer within two weeks after single-dose irradiation, examining the course of changes from the very early hours to later time points.
[Methods]: C57BL/6J mice received a single 17 Gy X-ray irradiation targeted to the neck, with the remainder of the body shielded by lead plates. Larynges were harvested at 4, 8, and 12 hours, and at 1, 2, 3, 5, 7, and 14 days post-irradiation. Serial sections of the VF were prepared and analyzed using hematoxylin–eosin (HE) staining and immunohistochemistry for Ki-67, a marker of cell proliferation.
[Results]: HE staining revealed features of epithelial damage, such as nuclear condensation and fragmentation, as early as 4 hours after irradiation. By 8–12 hours, infiltration of inflammatory cells had begun, while apoptotic-like findings were less prominent. On day 1, epithelial atrophy was observed, followed on day 2 by erosive changes and disruption of epithelial stratification. Vacuolar degeneration appeared by day 3. Between days 5 and 7, although degenerative and atrophic findings persisted, early regenerative changes emerged, including proliferation of basal-like cells and the presence of mucous metaplasia. By day 14, epithelial dysplasia with nuclear pleomorphism was evident. Expression of Ki-67 decreased in positive cells between 4 and 12 hours, comparable levels to controls between days 1 and 5, and an increasing trend on days 7–14, suggesting that proliferative activity may resume following the early epithelial damage observed after irradiation.
[Conclusion]: Single-dose radiation to the mouse VF especially in the SLP layer, induces epithelial damage within hours, followed by degeneration and atrophy, and subsequently early but incomplete regeneration. The transient reduction in Ki-67–positive cells is likely attributable to impaired proliferative capacity of epithelial cells in response to radiation-induced DNA damage. Moreover, the increase in Ki-67 expression on days 7–14 suggests a later resumption of proliferative activity after the initial epithelial injury.

O12-05

Comorbid Insomnia and Sleep Apnea (COMISA): Impact of Airway Surgery on Insomnia and different subtypes

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Objective:
To evaluate the effects of airway surgery on insomnia symptoms in patients with comorbid insomnia and sleep apnea (COMISA), and to compare surgical outcomes among different subtypes of insomnia.
Methods:
This retrospective study included 65 consecutive adults with obstructive sleep apnea (OSA) who underwent tailored airway surgery based on the findings from drug-induced sleep endoscopy. Insomnia was defined by a questionnaire- Insomnia Severity Index (ISI) with ISI≧8. Insomnia subtypes—onset, maintenance, and early awakening—were also identified accordingly. Outcomes assessed preoperatively and at 6 months postoperatively included ISI, apnea–hypopnea index (AHI), lowest oxygen saturation (LOS), and Epworth Sleepiness Scale (ESS).
Results:
Thirteen patients (20%) met the criteria for COMISA in surgical OSA patient cohort. Subtype distribution was sleep-onset insomnia (15%), sleep-maintenance (70%), and early awakening (15%). Baseline demographics and OSA severity did not differ significantly between COMISA and OSA-only groups except in BMI ($p=0.048$). Overall, AHI, LOS and ESS improved significantly postoperatively across all patients ($p < 0.001$). However, the COMISA group exhibited lower reduction in AHI compared to the OSA-only group ($p=0.035$). In COMISA group, mean ISI scores decreased significantly from 17 to 4 ($p = 0.001$) after airway surgery. Further analyses showed sleep-maintenance insomnia was the only subtype of insomnia improved significantly after airway surgery ($p=0.004$).
Conclusion:
COMISA was present in 20% of surgical OSA patients. Airway surgery effectively reduced both OSA severity and insomnia burden in COMISA patients. However, surgical outcomes for OSA were less favorable in the COMISA group compared to OSA-only patients. Insomnia subtype may influence postoperative improvement, with better outcomes observed in patients with sleep-maintenance insomnia.

Paper13 Head Neck 5

O13-01

A case of thyroid undifferentiated carcinoma , pharyngeal-skin fistula closed with fascia lata and pectoralis major flap

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【Introduction】 Undifferentiated thyroid cancer is a disease with an extremely poor prognosis. In addition to total thyroidectomy, it requires multidisciplinary treatment using radiation therapy and molecular targeted drugs. Lenvatinib, which is indicated for undifferentiated thyroid cancer, inhibits tyrosine kinases such as VEGF receptors and FGF receptors, and exerts an antitumor effect by strongly inhibiting angiogenesis.Therefore, it is necessary to pay attention to adverse events that differ from those of conventional chemotherapy.In addition, the formation of fistulas with surrounding organs and bleeding due to vascular rupture can have serious consequences, and careful follow-up is important during administration.We report a case in which a fistula formed from the hypopharynx to the anterior neck after total thyroidectomy, radiation therapy, and lenvatinib administration, which was closed with a fascia lata and pectoralis major muscle flap, with some literature review.

【Case】 A 49-year-old female. For undifferentiated thyroid cancer (pT2N1bM0, RX, pStageIVB), left thyroid lobectomy and D2b dissection was performed on day X. On day X+23, cervical lymph node metastasis occurred, and radiation therapy (60Gy) was performed. Simultaneously, lenvatinib was initiated. On day X+189, she was admitted urgently due to pharyngeal skin fistula originating from erythema in the anterior neck. On day X+210, a fistula closure procedure using the fascia lata and pectoralis major muscle flap was performed. Oral intake was initiated on the 20th postoperative day, and she was discharged home on the 29th postoperative day.

【Discussion】 The fascia lata has strength and softness, allowing closure tailored to the shape of the fistula. Additionally, the pectoral muscle flap ensures sufficient muscle mass and good blood supply. This combination enabled a reduction in the risk of fistula recurrence.

O13-02

Withdrawn

O13-03

Vocal cord paralysis and Prognostic Nutritional Index are risk factors for dysphagia after definitive chemoradiotherapy/ radiotherapy for T3 hypopharyngeal cancer

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Background:
T3 hypopharyngeal squamous cell carcinoma can be treated with either surgery or chemoradiotherapy (CRT), and quality of life (QOL) must be considered when deciding treatment. CRT can induce mucositis and fibrosis as acute or late adverse effects. These can lead to dysphagia. CRT is a standard of care for T3 hypopharyngeal cancer; however, it has a potential to lead to dysphagia. Identifying risk factors for dysphagia can help guide the choice between surgery and CRT.
Objective:
To identify risk factors for dysphagia after definitive CRT/ radiotherapy (RT) in patients with T3 hypopharyngeal cancer.
Methods:
We retrospectively analyzed patients with T3 hypopharyngeal cancer who received definitive CRT/RT between 2007 and 2024. We excluded patients treated at other institutions or those with insufficient follow-up. The primary endpoint was dysphagia at 3 months post-treatment, defined as a Functional Oral Intake Scale (FOIS) score ≤ 4. Candidate variables were age, sex, body mass index (BMI), Prognostic Nutritional Index (PNI), tumor subsite, N classification, concurrent systemic therapy, vocal cord paralysis, tumor volume, and hyoid–mandibular distance. T classification was based on the UICC 8th edition. Definitive radiotherapy was defined as a dose ≥ 66 Gy to the primary site. Categorical variables were compared using Fisher's exact test, and continuous variables using the Mann–Whitney U test.
Results:
Of 157 patients with T3 hypopharyngeal cancer, 63 received definitive radiotherapy. Among them, 46 patients with follow-up of more than 3 months were analyzed. There were 41 males and 5 females, with a median age of 62 years (range, 48–80). BMI ranged from 15.5 to 31.8 (median, 22.0), and PNI ranged from 35.7 to 69.3 (median, 51.5). N classification was N0 in 12, N1 in 6, N2 in 22, and N3 in 6 patients. The primary subsite was the pyriform sinus in 36 patients, posterior wall in 6, postcricoid in 2, and unknown in 2. Vocal cord paralysis was present in 18 patients. Dysphagia was observed in 11 patients (24%) at three months after radiotherapy. Dysphagia was significantly associated with vocal cord paralysis (44%, p = 0.014), absence of systemic therapy (57%, p = 0.046), and PNI (p = 0.007). Dysphagia occurred in 8 of 18 patients with vocal cord paralysis and in 6 of 12 patients with a PNI of less than 45. Dysphagia occurred in 4 of 7 patients without systemic therapy, including 3 patients aged ≥ 75 and 2 patients with ECOG PS ≥ 2.
Conclusions:
Dysphagia after definitive radiotherapy for T3 hypopharyngeal cancer was associated with vocal cord paralysis and PNI. These findings may aid treatment selection between surgery and CRT.

O13-04

Endoscopic-Assisted Thyroidectomy: Enhancing Precision and Safety Beyond Small Wounds

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Background: Endoscopic-assisted thyroidectomy (EAT) has evolved beyond cosmetic advantages, aiming to enhance surgical precision and safety. Since 2022, EAT was progressively adopted at our institution, with parathyroid indocyanine green (ICG) detection introduced in 2024. This study analyzed and compared the outcomes of EAT and conventional open thyroidectomy (OT) within a single institution.
Methods: We retrospectively reviewed thyroid surgeries at Taichung Tzu Chi Hospital between 2015 and July 2025. The EAT group included approximately 100 unilateral and 100 bilateral cases performed by one surgeon. OT cases were performed by multiple surgeons and served as the comparison group. Propensity score matching (1:1,) adjusted for demographics, thyroid cancer status, tumor features, central neck dissection, comorbidities. Outcomes included superior laryngeal nerve (SLN) identification, recurrent laryngeal nerve (RLN) palsy, hypocalcemia, permanent hypoparathyroidism, wound scar problems, operative time, blood loss, and length of stay.
Results: Between 2015 and 2025, more than 1,300 thyroidectomies were performed at our institution. Compared with OT, EAT demonstrated significantly higher SLN identification (70% vs 30% for unilateral, p=0.02; 60% vs 20% for bilateral, p=0.01). RLN palsy remained rare and comparable between groups (transient 1.5% vs 2.5%, p=0.72; permanent 0.5% vs 1.0%, p=1.00). Transient hypocalcemia was lower with EAT but without statistical significance (15% vs 23% in unilateral; 15% vs 25% in bilateral). Permanent hypocalcemia and hypoparathyroidism after bilateral surgery were significantly reduced with EAT (2% vs 10%, p=0.037). Wound-related problems were infrequent and showed no significant difference (2% vs 4%, p=0.68).
Conclusion
EAT achieved superior SLN identification and significantly reduced permanent hypocalcemia/hypoparathyroidism compared with OT, while maintaining comparable RLN safety and cosmetic outcomes. Beyond these clinical benefits, EAT also provides surgeons with valuable experience in handling instruments under endoscopic vision, facilitating the transition toward fully endoscopic approaches such as transoral thyroidectomy (TOETVA) or the bilateral axillo-breast approach (BABA). EAT therefore represents not only a precise and safe alternative to conventional thyroid cancer surgery but also a practical bridge to future minimally invasive thyroid techniques.

O13-05

Concurrent Chemoradiotherapy for Synchronous Hypopharyngeal and Esophageal Cancer: A Retrospective Study

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Purpose:
Synchronous hypopharyngeal and esophageal cancer is reported in 20–55% of hypopharyngeal cancers and 10–20% of esophageal cancers. Although concurrent chemoradiotherapy (CCRT) can prevent disease progression in the untreated site, it is highly invasive and requires careful balance between curability and toxicity. This study aimed to evaluate treatment feasibility, adverse events, and outcomes of CCRT for synchronous hypopharyngeal and esophageal cancer.
Methods:
We retrospectively analyzed patients who underwent CCRT for hypopharyngeal cancer with synchronous esophageal cancer at Tohoku University Hospital between January 2019 and August 2025. Clinical data including tumor subsite, stage, comorbidities, radiation dose, chemotherapy regimen, adverse events, and functional oral intake were collected. Radiation dose distribution was reviewed to determine head and neck and esophageal clinical target volumes (CTV). We assessed adverse events graded ≥3 (Common Terminology Criteria for Adverse Events (CTCAE) version 5.0), treatment interruptions, and chemotherapy dose reductions, and explored factors associated with severe toxicity.
Results:
Sixteen patients were included (median age 69 years, mostly male). The pyriform sinus was the most common hypopharyngeal subsite (81.3%), with stage IV disease in 68.8%. Most esophageal cancers were T1a/bN0. Radiotherapy was completed as planned in nearly all patients, whereas chemotherapy dose reduction was common: 15.4% received <200 mg/m² of cisplatin and 53.8% received exactly 200 mg/m². Treatment interruption occurred in 6.3%, mainly due to hematologic toxicity or infection. Febrile neutropenia occurred in 25.0%, grade 4 hematologic toxicity in 31.3%, and grade ≥3 infection in 37.5%. Risk factors for severe toxicity included longer esophageal CTV (multiple lesions), bilateral neck disease, and prophylactic esophageal irradiation. Complete response was achieved in 81.3% of patients and partial response in 18.7%. At three months post-treatment, 18.7% remained tube feeding–dependent.
Conclusion:
CCRT for synchronous hypopharyngeal and esophageal cancer is feasible, with high radiotherapy completion rates but frequent chemotherapy dose limitation. Hematologic and infectious toxicities were the major obstacles to treatment intensity. Target volume optimization and strategies to mitigate toxicity should be considered, and multicenter studies are needed to further improve treatment safety and efficacy.

Paper14 Otology 3

O14-01

Analysis of the factors affecting disabilities in patients with bilateral vestibulopathy

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Bilateral vestibulopathy (BV) is characterized by the bilateral impairment of peripheral vestibular function, leading to chronic symptoms such as postural imbalance, unsteadiness of gait, and oscillopsia during head movement. BV is associated with substantial reductions in quality of life and elevated risk of falls, since the effect of vestibular rehabilitation is limited for this condition.
Notably, the severity of disability experienced by BV patients varies considerably among affected individuals. This study aimed to identify clinical and functional factors associated with the degree of disability in patients with BV.

Methods: Fifty-two patients diagnosed with BV (26 males, 26 females; mean age 57.0 ± 15.5 years) were enrolled. The relationship between subjective disability and postural control was evaluated using the Dizziness Handicap Inventory (DHI) and stabilometry, respectively. Spearman's rank correlation was used to assess associations between DHI scores and center-of-pressure (COP) velocity during stabilometry (eyes open and closed). Multiple regression analyses were performed to examine the influence of vestibular function test results (specifically caloric testing, video head impulse test (vHIT), cervical and ocular vestibular evoked myogenic potentials (cVEMP, oVEMP)) as well as psychological status assessed by the Hospital Anxiety and Depression Scale (HADS).

Results: There was no significant correlation between COP velocity and DHI scores (eyes open: $r = 0.182$, $p = 0.197$; eyes closed: $r = 0.249$, $p = 0.075$). Additionally, neither the caloric test results ($p = 0.456$) nor the total number of abnormal vestibular function tests ($p = 0.131$) showed a significant association with DHI scores. In contrast, HADS scores were significantly correlated with DHI scores ($p = 0.004$). On the other hand, the number of abnormal vestibular function tests was significantly associated with increased postural instability, as measured by stabilometry ($p < 0.001$).

Conclusion: In patients with bilateral vestibulopathy, subjective disability is more strongly influenced by psychiatric comorbidities than by the degree of vestibular dysfunction or objective postural instability.

O14-02

The impact of cochlear implantation on tinnitus: Insights from data-logging

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Binaural hearing offers numerous auditory and cognitive advantages, including better sound localization, improved speech perception in noisy environments, and enhanced overall listening performance. In Japan, the 2017 revision of the adult cochlear implantation (CI) criteria states that bilateral implantation should not be denied if clinically beneficial. At our clinic, we have observed a steady increase in patients requesting either simultaneous or sequential bilateral CI. Tinnitus, often associated with hearing loss, is strongly influenced by the severity of auditory impairment. In clinical practice, the use of bilateral hearing aids is recommended to alleviate tinnitus. CI not only restores auditory function in patients with severe or profound hearing loss but may also reduce tinnitus by providing continuous external stimulation, similar to acoustic therapy, thereby minimizing silence that can worsen perception. However, evidence for CI effectiveness against tinnitus remains limited, and some cases of postoperative worsening have been reported.
In this study, we assessed tinnitus symptoms before and after CI in both unilateral and bilateral recipients at our hospital. Preoperative tinnitus was evaluated in all patients. Tinnitus severity was measured using the Tinnitus Handicap Inventory (THI), while tinnitus loudness and distress were assessed with the Visual Analogue Scale (VAS). Retrospective analysis included data from the automatic scene classifier logging system, and speech discrimination scores were measured six months after implantation to evaluate functional improvement.
THI scores improved in 44 of 51 patients (86.3%), remained unchanged in 3 (5.9%), worsened in 3 (5.9%), and one patient (2.0%) reported new-onset tinnitus postoperatively. Notably, bilateral CI recipients showed greater improvement in THI, loudness, and distress. Moreover, data logging revealed a positive correlation between THI improvement and the proportion of time spent using CI during conversation, particularly in noisy environments. Tinnitus is thought to arise when reduced acoustic input weakens inhibitory mechanisms in the central auditory pathway, leading to hyperactivity. In this study, bilateral CI appeared to restore auditory balance and markedly reduced tinnitus. These findings suggest that bilateral implantation is more effective than unilateral implantation in suppressing tinnitus and enhancing overall auditory satisfaction.

O14-03

Invisible saccule in 3T MRI: insights into inner ear vulnerability and fluid dynamics

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The trabecular mesh of the inner ear plays a critical role in maintaining the structure of the vestibular organs, particularly within the pars superior. Cases have been reported in which the saccule cannot be visualized in the pars inferior lacking this structure. This study aimed to investigate the clinical features and MRI findings, including endolymphatic hydrops (EH) and perilymphatic enhancement (PE), in ears with an invisible saccule (IS) and to clarify the relationships between IS and hearing loss and vertigo, thereby clarifying the potential mechanisms of cochleovestibular dysfunction that present with Meniere's disease (MD) like symptoms, even in the absence of vestibular EH. This research was retrospective study of 89 IS ears and 71 contralateral visible saccule (VS) ears from 406 patients with hearing impairment and vertigo between 2021 and 2024. Middle ear disease, schwannoma, perilymphatic fistula, and ears after intratympanic injection were excluded. Compared with VS ears, IS ears had worse hearing, especially in the low-frequency range, and higher PE. Cases diagnosed with MD accounted for 13% of IS, all of which showed EH limited to the cochlea, and PE showed higher in IS ears with vertigo than in those without. The present research has shown that IS ears develop increased vascular permeability; the breakdown of the blood-labyrinth barrier (BLB) caused by bleeding or inflammation may therefore have resulted in changes in the properties of the labyrinth lymph and hearing loss in the low frequency range. Since EH clinically occurs most frequently in the cochlea and then in the saccule, the abnormal morphology of the saccule may have disrupted the outflow of endolymph based on Guild's theory, resulting in greater endolymph accumulation in the cochlea. The correlation between PE and EH in MD suggests a BLB dysfunction and given that pathological degeneration of the BLB is associated with edematous changes within the vestibular stroma, MD attack may be caused by impaired inner ear blood flow. IS ears, despite showing high PE, may represent a preclinical stage without EH or symptoms. Future investigation of long-term MRI in IS cases may enable a more detailed understanding of the relationship between the maintenance of inner ear morphology and clinical features.

O14-04

A Case of Cycling biologic therapy in a Patient with Eosinophilic Otitis Media,Bronchial Asthma, and Eosinophilic Chronic Rhinosinusitis

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Eosinophilic otitis media (EOM) and eosinophilic chronic rhinosinusitis (ECRS) are refractory inflammatory airway diseases in which conventional pharmacological therapy often fails to achieve stable anti-inflammatory effects. We report the case of a 68-year-old man with a history of bronchial asthma who presented with bilateral hearing loss as his chief complaint. He was diagnosed with mixed hearing loss accompanied by persistent otorrhea. Because the continuous otorrhea made it difficult to use conventional air-conduction hearing aids, a left-sided bone-anchored hearing aid (Baha) implantation was performed. Postoperatively, improvements in aided thresholds and speech recognition scores were achieved, providing effective auditory rehabilitation.

During follow-up, the patient experienced exacerbation of bronchial asthma. To manage this, cycling therapy alternating between an anti–IL-5 receptor antibody (benralizumab) and an anti–IL-4/13 receptor antibody (dupilumab) was introduced. This therapeutic approach resulted in stabilization of otorrhea and sinonasal symptoms, in addition to improved asthma control.

This case highlights two important clinical implications. First, in EOM patients with persistent otorrhea who cannot continue using air-conduction hearing aids and in whom conventional otologic surgery cannot sufficiently restore hearing, Baha implantation can serve as a valuable option for auditory compensation. Second, alternating biologic therapies targeting different Th2 inflammatory pathways may represent a promising treatment strategy in patients with coexisting Th2-mediated diseases such as asthma, EOM, and ECRS.

To our knowledge, reports of successful cycling therapy with biologics in patients with multiple Th2-associated airway inflammatory diseases remain limited. Our experience suggests that this approach can contribute not only to asthma control but also to stabilization of refractory upper airway manifestations such as otorrhea and nasal polyposis.

O14-05

The effects of basic fibroblast growth factor and gelatin sponge administration on blast-induced tympanic membrane perforation in mice

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In recent conflicts and terrorism, blast injuries caused by bombs and explosives are a common possibility. Although tympanic membrane perforation (TMP) is known to be the most frequent auditory complication of blast injuries, its healing rate is generally poor. While basic fibroblast growth factor (bFGF)-containing gelatin sponges (gel) have been shown to be effective in the treatment of TMP, studies on their use for blast-induced TMP haven't been conducted. Using our blast injury mouse model in this study, we investigated the effects of bFGF and gel administration on blast-induced TMP in mice.

Male CBA/J mice, 10-12 weeks of age, were divided into five groups: (1) control (non-blast-exposed), (2) no treatment (untreated blast-exposed TMP ears), (3) bFGF (blast-exposed TMP ears treated with bFGF eardrop), (4) gel (blast-exposed TMP ears treated with gel placement into the TMP), and (5) bFGF + gel (blast-exposed TMP ears treated with bFGF immersed gel placement into the TMP). The blast-tube system generated a peak pressure of 330 ± 11.3 kPa from the blast shock wave and irradiated the mice from the front of their heads. TMP size was measured over time, auditory function was assessed using auditory brainstem response (ABR) and distortion product otoacoustic emissions (DPOAEs). Two months after the blast exposure, the fixed middle ear of mice embedded in paraffin, and the tympanic membrane (TM) was histologically evaluated.

Combination treatment with bFGF and gel promoted better TMP healing, with thinner, structurally improved TMs. There were no effects of drug administrations, such as bFGF or gel, on ABR, DPOAE.

These findings suggest that bFGF with a gelatin scaffold may effectively enhance TMP repair following blast injuries. This study provides new insights into potential therapeutic strategies for blast-related auditory injuries, which we will discuss alongside detailed auditory and histological assessments.

Paper15 Laryngology 3

O15-01

Patient outcomes in Awake balloon dilatation of subglottic stenosis under local anaesthesia utilizing non-occlusive Trachealator™ balloon

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Background
Subglottic stenosis is a chronic fibroinflammatory condition causing narrowing of the airway below the vocal cords via formation of scar tissue. It manifests as progressive stridor,dyspnoea, exertional dyspnoea and vocal hoarseness. The symptom burden can significantly affect patients quality of life. Due to the conditions relapsing nature, recurrence is common and varies depending on disease burden. There are multiple management options, one being endoscopic balloon dilatation of the tracheal narrowing, stretching the stenotic segment to achieve a wider diameter with correlating improvement in airflow and patients symptoms. Endoscopic techniques are less invasive, have shorter recovery times and fewer complications, although have increased rate of recurrence and need for repeat procedures. Balloon dilatation has been performed under general anaesthetic in theatre and local anaesthetic procedures. It classically is done using the Boston Scientific CRE Balloon Dilation Catheter, however the Trachealator is a relatively novel device manufactured by Spiggle & Theis which is a non-occlusive balloon catheter utilizing eight individual balloons around a central catheter, leaving a central lumen during inflation which allows patient ventilation during dilatation, which is not possible using standard balloons. It has been shown to be safe and effective, with improved stenosis diameter, improved breathing and exercise tolerance and prolonged dilation duration which may improve dilation diameter and therefore outcomes.
Methods
This study is a retrospective cohort study of all patients who underwent a balloon dilatation of subglottic stenosis utilizing the Trachealator balloon under local anaesthetic at Monash Health between from 2024-2025. The Primary outcome is complication rates, abandoned and non-tolerated procedures. Secondary outcomes include pre- and post-procedure vital signs and pain scores, inflation diameters and duration between standard and using Trachealator, and a qualitative patient satisfaction questionnaire comparing products.
Results
A total of ten procedures between eight patients were included with an average age of 59 and a female predominance. No procedures had any immediate complications, and none were abandoned. All procedures occurred as day-procedures and patients were discharged the same day. Pain scores varied between 0-1 out of 10, and all pre and post vital signs were unremarkab le. Average dilation time was 66 seconds, and average dilation pressure was 9atm.
Conclusions
The Trachealator dilation balloon is a non-inferior product when compared to standard for dilation of subglottic stenosis. Due to being non-occlusive, it has the potential benefits of providing a longer duration of dilation during awake local anaesthetic which may improve outcomes, although this requires more study.

O15-02

Characteristics of Preoperative Drug-Induced Sleep Endoscopy in Patients with Uvulopalatopharyngoplasty Failure

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Objective:
Uvulopalatopharyngoplasty (UPPP) is one of the most commonly performed surgical treatments for obstructive sleep apnea (OSA). However, its success rate remains limited, and some patients continue to experience clinical symptoms postoperatively. Drug-induced sleep endoscopy (DISE) allows dynamic evaluation of upper airway collapse and may provide clinical value in predicting surgical outcomes. The aim of this study was to investigate the preoperative DISE characteristics of patients who failed UPPP and to analyze the site, degree, and pattern of upper airway collapse.
Methods:
We retrospectively reviewed patients diagnosed with OSA at our institution who underwent UPPP between January 2016 and January 2025. Baseline clinical data, preoperative DISE findings, and pre- and postoperative polysomnography (PSG) results were collected. According to the Sher criteria, patients were divided into a surgical success group and a surgical non-success group. We compared preoperative DISE findings, including the site of collapse (velum, oropharyngeal lateral wall, tongue base, epiglottis), the degree of collapse, and the collapse pattern (anteroposterior, lateral, circumferential), between the two groups. Statistical analyses were performed to explore the associations between DISE characteristics and surgical outcomes.
Results:
A total of 1,538 patients were initially screened, of whom 57 had complete data and were included in the analysis. Based on the Sher criteria, 17 patients were classified into the surgical success group and 40 into the surgical non-success group. After adjustment for BMI and Chi-square testing, no significant associations were found between individual DISE characteristics and surgical success ($p > 0.05$). However, logistic regression analysis revealed that patients with more severe oropharyngeal lateral wall collapse demonstrated significantly greater improvement in apnea-hypopnea index (AHI) postoperatively (OR = 1.054, 95% CI: 1.013–1.097, $p = 0.010$).
Conclusion:
This study demonstrated that although DISE characteristics were not significantly associated with the overall surgical success rate of UPPP, patients with more severe oropharyngeal lateral wall collapse experienced significantly greater postoperative AHI improvement. These findings suggest that oropharyngeal lateral wall collapse may serve as an important predictor of AHI reduction following UPPP, rather than a determinant of surgical success or failure. DISE may still be a useful tool for staging surgical planning and tailoring subsequent interventions.

O15-03

Effects of Office-based Steroid Injections on Vocal Cord Lesions

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Purpose
Hoarseness is a common complaint in laryngology outpatient clinics and can be classified into organic and functional causes. Among organic causes, benign vocal fold lesions—such as nodules, polyps, and cysts—are the most frequently observed. In recent years, office-based steroid injection under endoscopic guidance has become a new treatment option for patients with mild lesions. The aim of this study is to evaluate pre- and post-treatment voice quality in patients diagnosed with benign vocal fold lesions and treated with office-based steroid injections by two physicians at a single medical center.
Methods
This study retrospectively reviewed patients diagnosed with benign vocal fold lesions who received outpatient steroid injections between 2018 and 2024 at a single medical center by two practitioners via cricothyroid approach. Pre- and post-treatment voice analyses were conducted, including VHI-10, GRBAS, MPT, intensity, F0, highest/lowest frequency, NHR, jitter, shimmer, VTI, and SPI. Statistical analysis was performed using paired t-tests with SPSS.
Results
Out of 120 patients, 37 with complete data were included. Results showed significant improvements in VHI-10 and GRBAS after treatment. Stroboscopic and imaging evaluations also indicated lesion improvement.
Conclusions
Outpatient endoscopic steroid injection is an effective alternative for patients unable or unwilling to undergo general anesthesia or microlaryngoscopic surgery, and it can significantly improve voice quality.

O15-04

A Nationwide Survey on the Epidemiology, Management Assessment, and Prognosis of Inhalation Injuries

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Background: Inhalation injury is a severe condition that occurs when high-temperature smoke or toxic gases are inhaled during fire accidents, leading to upper and lower airway damage. Early prophylactic endotracheal intubation is often recommended to secure the airway. However, the actual clinical practice, the role of endoscopic assessment, and the long-term outcomes in Japan have not been fully clarified. We therefore conducted a nationwide multicenter survey to investigate the clinical characteristics, management, and prognosis of patients with inhalation injuries, with a particular focus on the utility of laryngoscopy and bronchoscopy as assessment tools.
Methods: A nationwide retrospective survey was conducted among certified training facilities of the Japan Society for Bronchoesophagology and accredited institutions of the Japanese Society for Burn Injuries. Patients diagnosed with airway, tracheal, or laryngeal thermal injury between January 2017 and December 2021, who underwent standard burn evaluation and airway endoscopy during initial treatment, were included. Clinical data were collected from the acute phase through 6–12 months after the initial injury. Patient demographics, burn severity, airway management strategies, endoscopic findings, and outcomes were analyzed.
Results: Responses were obtained from 11 institutions, and 202 patients from 9 hospitals were registered. There were 135 males and 67 females, with a mean age of 57.8 years. Facial burns of grade II or higher were observed in 99 cases (49%), and the median Burn Index was 1.9. Endotracheal intubation was performed in 94 patients (46.5%), with no cases of delayed intubation due to progressive airway obstruction. Clinical risk factors for intubation included older age ($p=0.03$), impaired consciousness ($p=0.01$), facial burns ($p=0.02$), and psychiatric disorders ($p=0.01$). Endoscopic predictors were laryngeal edema ($p=0.0001$) and tracheal wall erythema ($p=0.0026$). Among 24 intubated patients, endoscopic findings were minimal, suggesting that approximately 10% of cases might have undergone unnecessary intubation. Two patients developed delayed subglottic stenosis, but no severe late airway obstruction requiring emergent intubation was observed.
Conclusion: This nationwide survey identified key clinical and endoscopic predictors of airway intervention in patients with suspected inhalation injury. Laryngoscopy and bronchoscopy provided valuable information as screening tools for upper airway damage and may help avoid unnecessary intubation. While no cases of delayed intubation due to airway stenosis were observed, a subset of patients may have been intubated unnecessarily. Further prospective studies are warranted to refine airway management strategies and to establish evidence-based criteria for intubation in inhalation injury.

O15-05

Endoscopic Cricopharyngeal Myotomy: When and How? In the Post-treatment Phase of Head and Neck Cancer Patients

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Background: Dysphagia is a complicated issue following head and neck cancer by disease or treatment, long-term tube feeding is frequently found in advanced head and neck cancer. Our study aims to explore the indications and outcomes of endoscopic cricopharyngeal myotomy (ECPM) in post-treatment dysphagia among head and neck cancer patients.

Methods: We reviewed head and neck patients treated at our institution who developed dysphagia following head and neck cancer treatment, and who subsequently underwent surgical intervention (main for endoscopic cricopharyngeal myotomy plus balloon dilatation) for cricopharyngeal dysfunction.

Results: A total of 21 patients with dysphagia following treatment for head and neck cancer were included in this study. The primary tumor sites comprised the oropharynx (n = 13), larynx (n = 3), and hypopharynx (n = 4), with one additional case of upper esophageal carcinoma. Among these, 15 patients presented with advanced disease, including 10 with stage IV and 5 with stage III cancer. The mean annual frequency of balloon dilatation was highest in patients with laryngeal carcinoma (6.33 sessions per year), followed by those with hypopharyngeal carcinoma (2.54 sessions per year). The single case of upper esophageal carcinoma underwent four sessions of balloon dilatation within one year, after which the patient achieved complete resolution of dysphagia. Following intervention, 76.19% of patients (n = 16) were successfully weaned from long-term nasogastric tube dependence. In contrast, 23.81% (n = 5) did not achieve satisfactory swallowing recovery and continued to require either long-term nasogastric feeding or gastrojejunostomy.

Discussion: Higher frequency rate of cricopharyngeal muscle dysfucntion is noted in patients with laryngeal and hypopharyngeal cancer patients because of disease causing or treatment related causing Radiation therapy, certain surgical reconstruction methods, mucosa fibrosis or pharyngeal muscle dysfunction even acid reflux led to pharyngoesophageal dysphagia. Endoscopic cricopharyngeal myotomy plus balloon dilatation is a effective and safe treatment choice for these patients.

Conclusion: Cricopharyngeal dysfunction represents a challenging subset of dysphagia following head and neck cancer treatment. This study presents our institutional experience with endoscopic cricopharyngeal myotomy combining with balloon dilatation as a viable surgical intervention, offering potential relief for selected patients with post-treatment dysphagia.

Paper16 Others 2

O16-01

Dysgeusia after comprehensive treatment for oral cavity cancer

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Gustatory function is a crucial component of human physiology, yet it is usually overlooked by the Head & Neck surgeon. The current study tried to investigate the risk factors for dysgeusia in oral cavity cancer patients after comprehensive treatment. We prospectively enrolled oral cavity cancer patients scheduled to undergo surgical intervention from August 2017 until December 2023. A solution-based taste test was used to examine patients' taste sensation before and after comprehensive treatment. Demographic data along with treatment-related features were collected and analyzed. In total, 125 patients with oral cavity cancer were included in the final analysis. The average age was 56.1 $\pm$ 9.2 years and males accounted for 84.0% (n=105) of all participants. In addition, 25 patients (20.0%) received total glossectomy and 55 patients (44.0%) underwent partial glossectomy. Furthermore, 78 patients (62.4%) patients received postoperative radiotherapy and 64 patients (51.2%) had induction or postoperative chemotherapy. After adjusting for other variables, radiotherapy was shown to be a risk factor for dysgeusia after comprehensive treatment (relative risk [RR], 13.45; 95% confidence interval [CI], 1.61–113.45), followed by total glossectomy (RR, 6.12; 95% CI, 1.52–24.55). Chemotherapy had a marginal effect on dysgeusia in oral cavity cancer patients after comprehensive treatment (RR, 3.25; 95% CI, 0.96–10.67). Taste disorders are not life-threatening events, but they still deserve the physician's attention. Patients with oral cavity cancer should be made aware that their sensation of taste may be affected during and after comprehensive treatment. Further investigation is warrant to determine the long-term result of taste function for oral cavity cancer patients after comprehesive treatment.

O16-02

Effect of tonsillectomy on Palmoplantar Pustulosis and analysis of clinical factors contributing to postoperative improvement of Skin Lesions

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Objective:
Palmoplantar pustulosis (PPP) is a representative focal infection-related disease in which tonsillectomy has been reported to improve skin eruptions. However, few studies have statistically analyzed clinical factors contributing to post-tonsillectomy improvement. We conducted a retrospective study to evaluate the temporal changes in skin symptoms after tonsillectomy and identify factors associated with favorable outcomes.
Subjects and Methods:
We analyzed 138 patients (33 males, 105 females; age range 15–74 years, median 52 years) with PPP who underwent tonsillectomy at our department between December 1998 and December 2015, with a minimum follow-up period of three months. Patients rated their skin condition after surgery compared to their preoperative state, which was defined as 10. A postoperative score of 0 was considered "disappearance," 1–2 as "marked improvement," and 3–5 as "improvement." The clinical course of eruptions was evaluated using the Kaplan-Meier method. The correlation between clinical factors and outcomes was assessed using the generalized Wilcoxon test. The factors included age, sex, disease duration, exacerbation by upper respiratory tract infections, presence of pustulotic arthro-osteitis (PAO), tonsillar hypertrophy, serum anti-streptolysin O (ASO) levels, smoking history, postoperative smoking cessation, and temporary worsening of eruptions after surgery.
Results and Conclusion:
At 3 months (n=71), skin disappearance and marked improvement were observed in 17% and 31% of cases, respectively. At 6 months (n=116), 26% had disappearance and 35% marked improvement. At 12 months (n=71), 39% showed disappearance and 40% marked improvement. Kaplan-Meier analysis showed that at 12 months, 34% achieved disappearance and 71% achieved marked improvement or better; at 24 months, 61% achieved disappearance and 97% achieved marked improvement or better. Notably, patients who successfully quit smoking postoperatively achieved significantly earlier disappearance of skin lesions than those who continued smoking. These findings suggest that tonsillectomy is an effective treatment for PPP and that postoperative smoking cessation plays a critical role in achieving earlier and more complete remission. Careful patient education and support for smoking cessation should be incorporated into the treatment strategy.

O16-03

Three Cases of Pharyngeal Injury Caused by Toothbrushes

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We present three cases of pharyngeal injury caused by toothbrushes, resulting in parapharyngeal emphysema and abscesses.

Case 1: A 49-year-old female hit the wall while brushing her teeth, injuring the area around her right tonsil. The next day, she experienced persistent pain in her right neck. A CT scan revealed edema around the right tonsil and small emphysema in the retropharyngeal space. Her neck pain and peritonsillar swelling improved with the administration of piperacillin and clindamycin. The CT scan performed 7 days after the injury showed that the emphysema had disappeared.

Case 2: A 31-year-old female hit the wall while brushing her teeth, injuring the area around her right tonsil. A CT scan detected a high-density area suspicious for a pseudoaneurysm of the internal carotid artery. With careful observation and administration of piperacillin and clindamycin, the high-density area on CT decreased in size on day 4 post-injury.

Case 3: A 4-year-old boy fell while brushing his teeth and injured the area around his right tonsil. The following day, he developed fever, sore throat, and neck pain. Despite the administration of ampicillin-sulbactam had been started, his neck pain worsened. On day 3 post-injury, a contrast-enhanced CT scan revealed emphysema and an abscess in the retropharyngeal space, so emergency drainage surgery was performed under general anesthesia. On postoperative day 7, the CT scan showed that both the emphysema and the abscess had disappeared.

Oral and pharyngeal injuries from toothbrushes often result from falls while brushing teeth and most frequently occur between the ages of 1 and 2. As toothbrushes carry resident oral bacteria, abscess formation is more likely than injuries from other objects. As in the three cases presented here, especially when the injury occurs around the tonsils, emphysema and abscesses can form in the parapharyngeal and retropharyngeal spaces. In addition to the administration of antibiotics and monitoring with contrast-enhanced CT, appropriate surgical intervention should be considered.

O16-04

Improving tonsillectomy outcomes in areas with limited surgical access

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Introduction:
Tonsillectomy is one of the most frequently performed paediatric operations worldwide but carries a risk of post-operative haemorrhage, historically reported at 2–5%. This risk often necessitates hospital observation or proximity to surgical services in the post-operative period. Coblation intracapsular tonsillectomy (ICT) has gained increasing international adoption due to lower bleeding rates, as low as 0.8%, and reduced post-operative pain compared with extracapsular tonsillectomy (ECT). These benefits support shorter admissions and earlier return to daily life and can be particularly useful in areas with limited access to ENT services. This study evaluates bleed rates and clinical outcomes following the introduction of ICT in a regional Australian hospital.

Method:
A retrospective chart review was undertaken of patients under 16 years undergoing ECT or ICT between 2020 and 2024. Demographics, comorbidities, and distance from hospital were recorded. Outcomes included post-operative haemorrhage requiring readmission or intervention, readmissions for pain and febrile illnesses, and length of stay. Comparative analysis was performed between surgical groups to determine differences in bleed rates and other outcomes.

Results:
A total of 782 tonsillectomies were performed: 561 ECT and 221 ICT. Mean age was 6.4 years, with ECT patients being significantly older and having fewer comorbidities. Travel distance did not differ significantly between groups. The ECT group had a significantly longer initial length of stay (0.95 vs 0.54 days), more readmissions (12.4% vs 3.2%) and incidence of readmissions for bleeding (7.6% vs 2.2%) and pain (2.3% vs 0%). Readmissions for febrile illness were rare and comparable. Despite more ICT patients living over an hour from hospital, this did not translate into higher complication rates.

Discussion:
Introduction of ICT was associated with lower rates of bleeding and pain-related readmission compared with ECT, aligning with international evidence of improved safety. The observed bleed rate for ICT (2.2%) was higher than some published figures, likely reflecting early adoption and the learning curve for surgeons. Nonetheless, it remained significantly lower than. Shorter length of stay and absence of pain-related readmissions further highlight the benefits of ICT for patients and healthcare systems. Wider implementation of ICT may enhance access to safe tonsillectomy in regional and rural settings, particularly where travel distances to surgical centres pose barriers. Continued surgeon training and procedural refinement should reduce bleed rates closer to international benchmarks.

O16-05

Creating palatal growth curves for early intervention to treat OSA

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Introduction:
A high, narrow palate is a recognised contributor to paediatric sleep-disordered breathing (SDB). Maxillary expansion has been shown to alleviate SDB, yet "normal" palatal limits are undefined, leaving clinicians without an objective threshold for timely referral. The current status quo is the clinician looking up into the palate and deciding subjectively. Age- and sex-specific reference curves can flag palatal constriction early and guide preventive expansion.

Methods:
We retrospectively reviewed 619 computed-tomography sinus and facial-bone scans from patients aged 0–18 years. After excluding syndromic, surgically altered or incomplete scans, 193 scans (79 female, 114 male) remained. 11 distances and angles were measured following Frankfurt-plane standardisation. Penalised-spline regression modelled age and sex effects. Correlated measurements were combined into a single palatal-shape score, to simplify clinical application.

Results:
Craniofacial dimensions expanded rapidly from birth to approximately 2 years, plateaued, then surged again in adolescence. Sex influenced every measurement except maximal sagittal and anterior coronal palatal angles ($P > 0.10$). A 'Palatal Shape Score' was generated, weighted chiefly by the anterior coronal angle to simplify clinical use. Reference centile charts (5th–95th) and growth-rate plots were generated for each variable and for the composite palatal-shape score.

Discussion:
These normative curves enable clinicians to plot an individual child's palate against normative standards; values outside the fifth or ninety-fifth centile indicate an abnormally vaulted palate and warrant referral for consideration of early maxillary expansion to mitigate future SDB. It could be used in both urban and remote settings, supporting timely screening and intervention.

O16-06

Do We Really Need the Scan? Rising CT Use in Peritonsillar Abscess

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Introduction
The use of computed tomography (CT) has risen worldwide and in Australia, particularly within emergency departments (EDs). While CT can assist triage and facilitate admission, it often prolongs ED length of stay for patients ultimately discharged. In peritonsillar abscess, CT utilisation has been associated with increased prescribing of antibiotics, opioids, and steroids, and higher rates of return ED visits, without differences in incision and drainage or quinsy adenotonsillectomy. Furthermore, 30% of scans interpreted as abscess show no purulence at intervention, highlighting potential over-reliance on CT for diagnosis. In the Australian context, where patients may be transferred long distances from peripheral EDs to tertiary centres for ENT review, it is unclear whether CT provides clinical benefit or represents unnecessary escalation.

Methods
Electronic records were retrospectively analysed for all patients presenting with tonsillitis, quinsy, or peritonsillar abscess across regional hospitals in Northern New South Wales between 2014 and May 2025. Variables included demographics, diagnosis, and CT orders. Encounters represented interhospital transfers to higher-level facilities. Patients with ≥2 transfers were identified, and changes in ultimate diagnosis following review at higher-level care (via ENT review of CT scan) were examined. CT utilisation was assessed overall, by year, in those with a final diagnosis of tonsillitis ("negative CT"), and compared between patients with single versus multiple transfers.

Results
A total of 6,944 transfers from 5,608 patients were analysed. Mean age was 25.5 years (SD 14.6). Overall, 7.3% of patients underwent ≥2 transfers, with no significant change over time ($p=0.30$). Diagnosis changes from tonsillitis to quinsy occurred in 71 patients and from quinsy to tonsillitis in 34, with no significant change over time. CT imaging was performed in 4.1% of patients, increasing significantly from 0% in 2014 to 2.4% in 2025 ($p<0.01$). Of these, 142 patients had a CT but a final diagnosis of tonsillitis. The rate of such "negative CTs" rose from negligible levels before 2021 to 2.4% in 2025 ($p<0.001$). Patients with ≥2 transfers were significantly more likely to undergo CT compared with those seen at a single institution (15.8% vs 0.4%).

Conclusion
CT use in suspected peritonsillar abscess has increased, with a growing proportion of negative results. The higher rate of CT among patients requiring multiple transfers highlights the burden of limited local imaging access and raises concerns of over-reliance on CT in regional care pathways. These findings underscore the need for clearer guidelines on imaging, and for service delivery models that reduce unnecessary transfers and optimise ENT access in geographically dispersed populations.

Poster

17th Japan-Taiwan Conference on Otolaryngology-Head and Neck Surgery

Poster Otology

P01

Recidivism risk and staged surgery indications based on the details of recidivism in pediatric congenital cholesteatoma

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Introduction: Congenital cholesteatoma is often diagnosed at advanced stages due to subtle initial symptoms. Canal wall up tympanoplasty is a common surgical choice; however, recidivism is frequent. There are very few studies on the postoperative course and recidivism sites. This study aims to detail recidivism in congenital cholesteatoma and identify surgical considerations and countermeasures.

Methods: This retrospective study analyzed 72 cases (72 ears) of congenital cholesteatoma in patients aged 15 or younger who underwent surgery at our department between January 2013 and July 2023. We investigated patients' characteristics, surgical findings, cumulative postoperative recidivism rates, and recidivism sites.

Results: The median age at the time of initial surgery was 4 years, ranging from 1 to 13 years. The median postoperative follow-up was 48.5 months. Potsic stage IV was the most common (24/72 cases, 33%). Canal wall up tympanomastoidectomy was the most frequent procedure in initial surgeries (26/72, 36%), and staged surgery was performed in 41 cases (57%). Cumulative postoperative recidivism was 29% after initial surgery and 12% after staged surgery. Recidivism was confirmed in 13 cases (32%) among 41 second-stage surgeries. Additionally, 6 recidivism cases were identified during unplanned reoperation, including one case of re-recidivism after undergoing second-stage treatment for the initial recidivism. Comparing the group of recidivism (n = 18) with that of non-recidivism (n = 54), Potsic stage IV was significantly more prevalent in the recidivism group. Regarding types (n = 18), residual and recurrent cholesteatomas were observed in 16 and 2 cases, respectively. One case involved both. Residual cholesteatoma was found at 19 sites: around the stapes and sinus tympani (14 sites, 74%), mastoid cavity (2 sites), attic (2 sites), and tensor tympani tendon (1 site).

Discussion: Staged surgery effectively reduced the cumulative recidivism rate from 29% to 12%. However, this study demonstrated a recidivism rate of 32% at the second-stage surgery, which is lower than the rates reported in previous studies. This suggests the potential to avoid staged surgeries in cases without recidivism. Our findings show significantly more mastoid extension in recidivism cases. The high prevalence of residual cholesteatoma around the stapes and in the sinus tympani highlights these areas as crucial.

Conclusion: For pediatric congenital cholesteatoma, planned staged surgery should be considered for high-risk cases with extension to the stapes or sinus tympani or involving mastoid extension. Conversely, for cases at Potsic stage III or less with minimal stapes extension, a single-stage tympanoplasty might be considered

P02

Combined Galvanic Cervical and Ocular VEMP Abnormalities Predict Prolonged Dizziness in Vestibular Neuritis

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Background: Despite the growing use of cervical (cVEMP) and ocular (oVEMP) VEMP tests, their effectiveness in predicting chronic dizziness in vestibular neuritis (VN) patients remains unclear. Our research examines the link between long-lasting dizziness and inner ear assessments, encompassing VEMPs induced by air-conducted sound (ACS), bone-conducted vibration (BCV), and galvanic vestibular stimulation (GVS).

Objectives: This study explores prognostic markers by examining the relationship between the persistence of dizziness symptoms and various inner ear test findings in VN patients.

Material and Methods: A retrospective cohort of 60 unilateral VN patients underwent comprehensive audiovestibular tests, including pure tone audiometry, cVEMP and oVEMP induced by ACS, BCV, GVS, and caloric tests. Patient subgroups were established based on dizziness duration: short-term (<3 months) and long-term (≥3 months).

Results: No substantial correlation existed between the dizziness duration and the outcomes of any particular single inner ear test. However, patients exhibiting concurrent abnormal GVS-cVEMP and GVS-oVEMP were more likely to experience prolonged dizziness, indicating more extensive vestibular system involvement.

Conclusions: Concurrent abnormalities in GVS-cVEMP and GVS-oVEMP may indicate a higher chance of long-term dizziness in VN.

P03

Mechanistic Insights and Therapeutic Potential of Methylprednisolone and D-Methionine in an Animal Model of Acoustic Trauma

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Objectives:
At present, no approved treatments exist for noise-induced hearing loss (NIHL), a condition in which oxidative stress and cochlear inflammation play pivotal roles. This study evaluated the therapeutic effects of D-methionine (DMET) and methylprednisolone (MP) in a guinea pig model of NIHL.
Methods:
Twelve male guinea pigs were assigned to each of the following groups: control, saline, MP (15, 30, 45 mg/kg), DMET (200, 400, 600 mg/kg), and combinations of MP (15, 30, 45 mg/kg) with DMET (200, 400, 600 mg/kg) at increasing doses. Treatments commenced 60 minutes after a 6-hour exposure to continuous broadband white noise at 105 ± 2 dB SPL and were administered every 12 hours for 3 consecutive days. Click-evoked auditory brainstem responses were obtained 1 day before and 14 days after noise exposure. In the combination groups, animals were euthanized on day 14 for assessment of cochlear lateral wall Na^+,K^+-ATPase and Ca^{2+}-ATPase activities and lipid peroxidation (LPO) levels.
Results:
Both MP and DMET monotherapies produced dose-dependent reductions in permanent threshold shift (PTS). In the combination groups, MP (45 mg/kg) plus DMET (600 mg/kg) achieved complete recovery, with PTS not significantly different from controls. Noise-induced reductions in Na^+,K^+-ATPase and Ca^{2+}-ATPase activities showed dose-dependent restoration, with the highest-dose combination achieving 84.8% and 95.5% of control levels, respectively. Noise-induced increases in LPO were also attenuated in a dose-dependent manner, with only a 12.3% elevation in the highest-dose combination group.
Conclusions:
In the MP (45 mg/kg) plus DMET (600 mg/kg) group, noise-induced hearing loss was fully reversed, accompanied by substantial attenuation of cochlear lateral wall oxidative stress and restoration of Na^+,K^+-ATPase and Ca^{2+}-ATPase activities to near-control levels.

P04

Comparison Between Furosemide-Loaded VEMP and Gadolinium Enhanced Inner Ear MRI

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Background:
Furosemide-loaded vestibular evoked myogenic potential (FcVEMP) is used to estimate endolymphatic hydrops (EH). Gadolinium-enhanced inner ear MRI (ieMRI) enables direct visualization of EH, but the correlation between FcVEMP and ieMRI findings remains unclear.
Objective:
To compare FcVEMP and ieMRI findings and assess their diagnostic significance in Ménière's disease (MD).
Methods:
This retrospective study included 73 ears from patients with definite unilateral MD and 40 normal-hearing control ears from 21 individuals, excluding suspected/atypical MD. Improvement rates (IR) of FcVEMP amplitudes were calculated, and receiver operating characteristic (ROC) analysis determined the optimal cutoff. In 41 MD patients, concordance between FcVEMP and EH on ieMRI was evaluated.
Results:
Mean IR was significantly higher in affected ears (65.2%) than in controls (28.3%) ($p = 0.019$). An IR cutoff of 34.3% yielded 60.3% sensitivity, 75.0% specificity, and an AUC of 0.655. On ieMRI, EH was detected in 43.9% of cochleae and 68.3% of vestibules. Concordance between FcVEMP positivity and EH was low ($\kappa = -0.08$ for cochleae; $\kappa = 0.03$ for vestibules).
Conclusion:
The low concordance suggests that FcVEMP may not reliably reflect the morphological presence of EH on ieMRI.

P05

Molecular biological analysis of ectopic hair cells during mouse cochlear development

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【Background】
Hair cells in the cochlea play a key role in mechanoelectrical transduction, converting external sounds into electrical signals. They differentiate from the progenitor cell pool with supporting cells, and then they are classified into two types: inner hair cells in a single row on the inside, and outer hair cells in three rows on the outside. Previous reports demonstrate the overexpression of the Atoh1 gene involved in hair cell differentiation, and artificial mutation of the Sprouty1 gene required for the development of supporting cells and hair cell numbers, resulting in the generation of excess ectopic hair cells (Luo, 2017 and Shim, 2005). However, there are no detailed reports on the presence of ectopic hair cells in wildtype mice. Here, we show the molecular biological analysis of ectopic hair cells in wildtype mice.

【Method】
The cochlear sensory epithelia of wildtype mouse embryos at late embryonic day 18.5 (E18.5) and postnatal day 1 (P1) were triple immunostained using antibodies against the hair cell marker Myo7a, the supporting cell marker Sox2, and the neural marker Tuj1.

【Results】
In mouse E18.5 and P1 cochleae, Myo7a$^+$ ectopic hair cells (two rows of inner hair cells and four rows of outer hair cells) were irregularly scattered from the apical to basal turn.

Ectopic hair cells expressing a hair cell-specific marker Myo7a were not expressed with the supporting cell marker Sox2. Furthermore, Sox2$^+$ ectopic supporting cells were also found underneath ectopic hair cell regions. Tuj1$^+$ nerve fibers were attached to the cell bodies of Myo7a$^+$ ectopic hair cells, suggesting that ectopic hair cells form synapses with the cochlear nerves.

【Conclusion】
- We identified the presence of ectopic inner and outer hair cells in the wildtype mouse cochleae at late embryonic and neonatal stages.
- Ectopic hair cells were aligned with ectopic supporting cells below.
- Nerve fibers were attached to the cell bodies of ectopic hair cells, suggesting synapses between ectopic hair cells and the cochlear nerve.

P06

Insulin-like growth factor 1 protects cochlear outer hair cells against cisplatin

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Cisplatin is a highly effective platinum-based chemotherapeutic drug that is widely used in the treatment of various solid malignancies, including those in the head and neck, lungs, and reproductive organs. Despite its efficacy, its clinical application is often limited by severe side effects, most notably ototoxicity, which can lead to irreversible hearing loss. Currently, no FDA-approved treatments exist to prevent or reverse cisplatin-induced inner ear damage. Histopathological analysis has shown that cisplatin preferentially damages outer hair cells (OHCs) located in the organ of Corti, which are critical for sound amplification and frequency discrimination.
We previously reported that insulin-like growth factor 1 (IGF1), a peptide with known trophic and regenerative properties, confers significant protection to cochlear hair cells (HCs) exposed to various stressors, including acoustic trauma, transient ischemia, surgical injury, and aminoglycoside antibiotics. In the present study, we explored the potential of IGF1 to protect auditory sensory HCs from cisplatin-induced toxicity using an organotypic culture system derived from cochleae of postnatal day 2 mice.
When IGF1 was administered to explants cultured in cisplatin-containing medium, a marked preservation of OHCs was observed, indicating a robust protective effect. To elucidate the mechanism underlying this effect, we applied a specific IGF1 receptor (IGF1R) antagonist and found that the protective activity of IGF1 was significantly reduced, thereby confirming that IGF1R signaling is essential for its otoprotective function.
Further analysis demonstrated that IGF1 treatment attenuated cisplatin-induced oxidative stress in cochlear tissue, which is one of the main pathways implicated in cisplatin ototoxicity. Importantly, IGF1 preserved HC numbers not by inducing proliferation of HCs or supporting cells (SCs), but by inhibiting apoptotic pathways, thereby preventing cell death.
Taken together, these findings strongly suggest that IGF1 exerts its protective effect through a receptor-mediated mechanism that reduces oxidative stress and apoptosis in cochlear HCs. Our results support the further development of IGF1 as a promising and potentially safe therapeutic strategy for preventing or alleviating cisplatin-induced hearing loss, which remains a significant unmet need in oncology and audiology.

P07

A case of a deaf patient with hereditary hearing impairment and bilateral chronic otitis media who could restart conversation after tympanoplasty

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Background
Recently, progressive sensorineural hearing loss (SNHL) caused by genetic variants can be rapidly identified using next-generation sequencing. On the other hand, advances in antimicrobial therapy have gradually reduced the incidence of chronic otitis media (COM). Thus, cases combining hereditary progressive hearing loss and COM are rarely found at presence. We report an elderly patient, both with bilateral COM and a family history of progressive hearing loss caused by a *KCNQ4* variant, who could restart conversation after bilateral tympanoplasty.
Case
An 84-year-old woman had worn bilateral hearing aids since around age 60. Her hearing gradually deteriorated, and then about one month before presentation, she visited our hospital due to difficulty having conversations with hearing aids for the past month. Her father, eldest daughter, and eldest son also had progressive hearing loss. Pure-tone audiometry showed bilateral profound SNHL. We planned operation for infection control of the middle ear followed by cochlear implantation to regain hearing. As the first operation, we considered whether external auditory canal closure or tympanoplasty would be more appropriate for her. Since she had been able to have conversation with hearing aids until about one month prior, we chose tympanoplasty, allowing her to use air-conduction hearing aids. Bilateral type I tympanoplasty was performed under general anesthesia, and then after three months postoperatively, the patient was able to have a conversation using hearing aids. Her right-ear postoperative pure-tone average (0.5–3 kHz, AAO-HNS criteria) improved to 92.5 dB HL. Although her maximum speech intelligibility remained 40% (60 dB HL) with bilateral aids, both she and her family were satisfied with the outcome. Her postoperative bone-conduction audiometry of the right ear showed a high-tone gradation pattern, which was consistent with the typical hearing profile of a heterozygous KCNQ4 variant (c.211delC) identified by genetic testing and known as a cause of juvenile-onset bilateral SNHL, typically characterized by progressive high-frequency loss with relative preservation of low frequencies.
Discussion
In this case of progressive severe hearing loss complicated by COM, closure of the tympanic membrane perforation improved right-ear hearing, allowing the patient to resume conversation with hearing aid support. The KCNQ4 variant identified typically causes age-related threshold elevation in high frequencies, while low frequencies are relatively preserved. Correspondingly, her postoperative bone-conduction audiogram reflected this high-tone gradation. Retrospectively, preoperative genetic analysis might have helped guide the treatment plan more effectively.

P08

INTRALUMINAL LYMPHOID TISSUE AS A CAUSE FOR EUSTACHIAN TUBE DYSFUNCTION

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Eustachian tube dysfunction is a common otological disorder that impairs middle ear pressure regulation and ventilation leading to symptoms of aural fullness, otalgia, conductive hearing loss and recurrent acute otitis media. While mucosal inflammation, allergies, environmental irritants and adenoidal hypertrophy are well documented causative agents, less well described aetiologies such as intraluminal lymphoid tissue may contribute to treatment resistant or refractory cases. We report a case of an 81-year-old male, presenting with left sided conductive hearing loss with associated otalgia and tinnitus. Endoscopic examination and histopathological reports demonstrated *reactive tonsillar type lymphoid tissue* causing complete obstruction of the eustachian tube lumen. Conventional medical management provided limited benefit, with surgical intervention to address the obstruction only facilitating a refractory improvement to symptoms. This case highlights intraluminal lymphoid tissue as a rare but important cause of eustachian tube dysfunction. Greater clinical awareness and careful endoscopic evaluation are essential for accurate diagnosis and tailored management in patients with refractory ETD.

P09

General Surgeons as First Responders to Auricular Hematoma for South Asian Kabaddi Players [poster]

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Background

A traditional form of South Asian wrestling is Kabaddi, which is a form of extreme sports and involves heightened risk of recurrent auricular hematoma that can result in cauliflower ear. To this, general surgeons can attend in emergencies. Acute forms of auricular hematoma are managed by ENT surgeons in Pakistan.

Methods

This study is of a retrospective nature that analyses 44 cases of Kabbadi players over a period of six months from January 2025 to June 2025, in the premise of auricular hematoma carried out in the medical hospital, CMH Pakistan [name redact]. It is a military hospital in Pakistan that caters to healthcare for army personnel and general public. Moreover, it is a tertiary care teaching hospital by the Pakistan Army. Informed consent was taken from the patients and from the medical head of the institution to carry out the investigation for research purposes. The first responding treatment given to the affected Kabaddi players was surgical technique for incision drainage and mattress suture.

Results

The study took into account 44 cases of professional Kabaddi players affected through trauma of auricular hematoma. The incision and draining technique were used for the pinna, with mattress suture. A total of 19 players were severely affected through cauliflowering of both ears, while 6 had complaints of one ear. 11 patients developed a second hematoma on the same year after receiving treatment after the third month while 9 patients had hematoma on the other ear after the fifth month.

Conclusions: It is important to involve ENT surgeons along general surgeons to investigate in reoccurring problems in the management of auricular hematoma in Kabaddi players. The technique of simple incision and draining that is followed by mattress suture is an effective method if applied without pressure bandage accompanied by antibiotic application.

P10

Quality of Life Evaluation of Family Members Supporting Cochlear Implant Recipients

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Objective

While postoperative quality of life (QOL) assessments conducted by cochlear implant (CI) recipients themselves have been reported, evaluations of family members' QOL before and after implantation are scarce. In daily clinical practice, not only recipients but also their families are perceived to experience improved quality of life after CI surgery. Assessing family QOL pre- and postoperatively may provide valuable information for candidates considering cochlear implantation and their families.

Methods

This study was conducted at Sapporo Medical University Hospital. Family members of adult postlingually deafened CI recipients aged ≥65 years at the time of surgery, with ≥3 months and ≤2 years of device use, were recruited between December 2024 and May 2025. Eligible family members were those aged ≥20 years who were most actively involved with the recipient before and after surgery. Questionnaires administered included the Japanese version of the Zarit Burden Interview short form (J-ZBI-8) for caregiver burden, the 8-item Short Form Health Survey (SF-8) for health-related QOL, and the Nursing Home Hearing Handicap Index (NHHHI) to evaluate family perceptions of the recipient's hearing-related difficulties. Family members answered retrospectively based on pre- and postoperative conditions. The study was approved by the institutional ethics committee.

Results

Among 47 postoperative recipients, accompaniment to regular hospital visits was provided by spouses in 31.9%, children in 23.4%, caregivers in 4.3%, and no accompaniment in 40.4%. Ten family members completed the questionnaires (3 spouses, 5 children, and 2 others; 5 cohabiting, 5 non-cohabiting). Regarding accompaniment, 40% reported "always accompanied" preoperatively, which increased to 60% postoperatively. In J-ZBI-8, 80% of families showed improvement in Personal Strain scores, while 80% reported no change in Role Strain. SF-8 scores revealed no significant changes in health-related QOL. However, NHHHI scores improved significantly from a preoperative mean of 45.0 to a postoperative mean of 34.8.

Conclusion

Few studies have evaluated family members who support CI recipients across the perioperative period. In this study, caregiver burden was reduced postoperatively, although no clear changes in health-related QOL were observed. Importantly, family perceptions of the recipient's hearing-related handicaps improved significantly after surgery. These findings suggest that cochlear implantation benefits not only recipients but also their families from the perspective of reduced hearing-related impact on daily life.

P11

The long-term outcome of sac and shunt operation assessed by Hydrops MRI

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Purpose. The aim of this study was to evaluate the long-term outcome of Meniere's disease (MD) patients who had previously undergone sac and shunt operation using Hydrops MRI for assessment.
Methods. A total of 17 unilateral MD patients who had previously undergone sac and shunt operation underwent an inner ear test battery, followed by Hydrops MRI. The 34 ears were classified into two groups. Group A consisted of 17 operated ears, which were further subdivided into Group A1 (with endolymphatic hydrops, EH), and Group A2 (without EH). In contrast, Group B comprised 17 non-operated (opposite) ears including Group B1 (with EH) and Group B2 (without EH).
Results. More than 70% MD patients continued to experience the Meniere's triad of symptoms, even long-term (20 years) after surgery. A significantly decreasing sequence in the abnormality rates of the inner ear test battery was noted in Group A1+B1, whereas no such declining trend was noted in Group A2 or B2. The prevalence of EH on operated ears demonstrated EH at the cochlea (65%), saccule (53%), and utricle (53%). Additionally, EH was also identified on non-operated ears, with a prevalence of 24% at the cochlea, and 12% at the saccule and utricle.
Conclusion. Using Hydrops MRI, this study found a 65% prevalence of cochlear EH on operated ears over a long-term period after surgery. This, coupled with a 70% prevalence of episodic vertigo, suggests that sac and shunt operation may not effectively alleviate EH.

P12

Anatomical and Electrophysiological Evaluation of FLEXsoft Electrodes Fully Inserted into the Second Cochlear Turn

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Background: The three-dimensional trajectory of the cochlear scala tympani does not precisely align with the path of cochlear implant (CI) electrode arrays, especially those with varying diameters, stiffnesses, and flexibilities. CI stimulation may also affect not only spiral ganglion cell bodies but also their peripheral fibers. However, the link between electrode position and neural activation remains poorly understood.
Objective: To investigate the spatial position of each electrode contact within the cochlear neural element, in order to identify electrode positions that most effectively stimulate the cochlear nerve.
Methods: We included five patients with anatomically normal cochleas who underwent CI with FLEXsoft electrode array, followed by intraoperative cone-beam CT. We evaluated the position of each channel, including the distance from the modiolus and the height relative to a plane perpendicular to the modiolus axis passing through the round window. In 4 out of 5 who underwent electrically evoked auditory brainstem response (EABR) testing, we also assessed their eV latencies.
Results: The proximal electrodes (channels 12–7), located in the basal turn, were aligned on the same plane perpendicular to the modiolus axis. The electrodes inserted into the second turn (channels 6–1) showed a linear increase in height as the array advanced distally. The distance from each channel to the modiolus gradually decreased with decreasing channel number. A strong inverse linear correlation was observed between channel-to-modiolus distance and eV latency, with shorter latencies associated with electrodes positioned closer to the modiolus.
Conclusions: In arrays inserted up to the second turn, the proximal electrodes are aligned in a flat plane, gradually approaching the modiolus, while the distal electrodes inserted into the second turn ascend apically along the cochlear curve. Electrodes in the second turn are closer to neural structures and may stimulate the cochlear nerve more efficiently.

P13

Endoscopic Ossiculoplasty Following Iatrogenic Malleus Extraction During Foreign Body Removal: A Rare Case Report and Technical Considerations

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Objectives: This study aims to present a rare case of iatrogenic malleus extraction during foreign body removal and to describe the reconstruction strategies that led to an excellent hearing outcome.
Background: Iatrogenic injury to the ossicular chain is an uncommon complication during otologic procedures, particularly in the context of foreign body removal. Among such injuries, malleus extraction is exceptionally rare. Management strategies may involve tympanoplasty type II or more advanced ossiculoplasty techniques, depending on the extent of ossicular disruption and middle ear status.
Case description: We report a rare case of a 37-year-old Thai woman who presented with left-sided mixed hearing loss, comprising both sensorineural and conductive components, following accidental extraction of the malleus during removal of a cockroach from the external auditory canal at a provincial hospital 8 months prior to referral. On physical examination, the tympanic membrane was intact; however, the handle of the malleus and the umbo were absent. Preoperative audiometry revealed a pure-tone average (500, 1000, 2000, and 4000 Hz) air-conduction/bone-conduction threshold of 77.5/52.5 dB, with a mean air–bone gap of 25 dB. High-resolution computed tomography of the temporal bone demonstrated complete absence of the malleus, with preservation of the incus and stapes suprastructure. The patient subsequently underwent endoscopic exploration of the middle ear, which confirmed an intact tympanic membrane and a gap between the drum and the incudostapedial joint, as well as the stapes suprastructure and a mobile footplate. The incus was removed, and ossiculoplasty was performed using a partial ossicular replacement prosthesis (PORP) inserted onto the stapes suprastructure, with a tragal cartilage cap interposed between the PORP and the tympanic membrane. The postoperative course was uneventful, and at 12-month follow-up the air–bone gap had improved from 25 dB to 6.25 dB.
Conclusion: Malleus extraction during foreign body removal is extremely rare but may lead to serious complications. Otologic procedures should therefore be performed with caution, whether by general practitioners or otolaryngologists. Although the complication described in this report is exceptionally uncommon, early recognition and timely surgical intervention are essential to restore ossicular continuity and optimize clinical outcomes.

Keywords: endoscopic ear surgery; malleus extraction; foreign body removal; conductive hearing loss; ossiculoplasty

P14

The Treatment Options for Refractory Meniere's Disease and Delayed Endolymphatic Hydrops: Endolymphatic Sac Surgery vs. Middle Ear Pressure Therapy

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Background and Aim
Endolymphatic sac drainage (ELSD) surgery is performed to treat vertigo spells in patients with definite Meniere's disease (MD) and delayed endolymphatic hydrops (DEH) refractory to conservative treatments such as drug therapy and lifestyle guidance. In recent years, middle ear pressure therapy (MEPT) using a novel, non-invasive middle ear pressure device, not requiring tympanic ventilation tubes has been developed and is now available in Japan. MEPT has become an additional treatment option for refractory MD and DEH. However, it remains unclear which therapy (ELSD surgery or MEPT) should be selected first and how both therapies should be combined. Therefore, we investigated the effect of ELSD surgery or MEPT to determine the optimal treatment approach for patients with MD and DEH refractory to conservative therapies.

Methods
Of the 27 patients who underwent ELSD surgery or MEPT over a two-year period from 2022 to 2024, 16 underwent ELSD surgery prior to MEPT and 11 underwent MEPT in advance. To evaluate the outcome for vertigo, a numerical index (NI) was calculated based on the average number of definitive spells (lasting more than 10 minutes) per month over the six months before and after treatment. Evaluations were conducted at 6 and 12 months post-treatment. Patients who exhibited substantial or moderate remission, as graded by the NI, were considered to have shown improvement. Regarding hearing, improvement was defined as a decrease of 10 dB or more in the mean hearing threshold after surgery.

Results
Improvements in definitive vertigo spells were observed in 14 of the 16 patients (87.5%) during the early period (1–6 months after surgery) following ELSD surgery, and in all cases during the later period (7–12 months after surgery). In contrast, improvement in hearing level was noted in only 2 patients (approximately 12.5%) during both the early and later periods.
Comparing the treatment effects of ELSD surgery and MEPT, the overall improvement rate for ELSD surgery (87.5%) was significantly higher than that for MEPT (44.5%). However, no significant difference was observed in hearing level improvement between ELSD surgery (12.5%) and MEPT (9.1%).

Conclusion
For intractable cases of Meniere disease, it seems to be essential to fully provide the information on the benefits and risks of both treatment modalities, ELSD surgery and MEPT to patients and discuss selecting the optimal treatment.

Poster Rhinology

P15

The Impact of Sinus Surgery for Chronic Rhinosinusitis on Concomitant Depression and Anxiety Symptoms: A Systematic Review and Meta-analysis

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Background: Both anxiety and depression are prevalent amongst patients with chronic rhinosinusitis (CRS) and associated with poorer outcomes following treatment for CRS. However, the impact of treatment on CRS on mental health remains uncertain. Therefore, this study seeks to evaluate if surgical intervention for CRS may alleviate comorbid depression and anxiety.

Methods: PubMed, Embase, and Scopus databases were searched for retrospective and prospective cohort studies, cross-sectional studies, and randomised controlled trials relating to chronic rhinosinusitis treatment using sinus surgery from inception to 30 April 2024 using the Population, Intervention, Comparison and Outcomes (PICO) framework. The full search strategy is included in **Supplementary Figure 1**. Three blinded reviewers selected observational studies and randomised controlled trials investigating levels of depression and anxiety pre- and post-surgical treatment of CRS. 11 studies comprising 3,067 patients were included, of which 5 studies were quantitatively analysed. After which, data was extracted from included articles into a structured proforma and the Newcastle-Ottawa scale was used to evaluate study bias, following Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines and a PROSPERO-registered protocol (CRD42022351855). Meta-analyses of the ratio of means were conducted in a random-effects model.

Results: Overall, sinus surgery was associated with significant improvement in test scores of depression (ROM = 1.47, 95% CI = 1.03-2.10), anxiety (ROM = 1.10, 95% CI = 0.81 to 1.49) and quality-of-life markers which are closely correlated to mental health outcomes.

P16

Respiratory Management in 31 Cases of Congenital Choanal Atresia

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Objective:
Congenital choanal atresia often causes respiratory distress and feeding difficulties immediately after birth, particularly in bilateral cases. Early surgical intervention is necessary to secure the airway. This study aimed to evaluate respiratory management in affected patients.
Methods:
We retrospectively reviewed 31 patients who underwent surgery for congenital choanal atresia at our department between December 2002 and June 2024. We analyzed the laterality of atresia, age at first surgery, associated conditions, need for pre- and postoperative airway support (intubation, tracheotomy), and respiratory outcomes.
Results:
Nineteen patients (61.3%) had bilateral atresia, three (9.7%) had unilateral atresia with contralateral nasal stenosis, and nine (29.0%) had unilateral atresia with a normal opposite side. The median age at the first surgery was 101 days (22–2,211) in bilateral cases, 345 days (55–1,060) in unilateral/stenosis cases, and 1,995 days (151–5,609) in unilateral/normal cases. Seventeen patients had syndromic features, including CHARGE syndrome and craniofacial anomalies, and 14 were non-syndromic.
Thirteen patients required prolonged oral intubation from birth, 4 required only temporary postnatal intubation, and 11 did not require intubation. Tracheotomy was performed in 6 cases: three before and three after choanal surgery. Among the bilateral cases, 17 (89.5%) required preoperative airway support. None of the unilateral/normal patients required intubation.
All the patients who underwent tracheotomy had syndromic conditions. Preoperative tracheotomy was indicated when glossoptosis or micrognathia suggested that choanal repair alone was insufficient. Postoperative tracheotomy was required in patients with unrecognized laryngomalacia or tracheomalacia.
Conclusions:
Bilateral and unilateral atresia with contralateral nasal stenosis often result in early respiratory compromise, requiring prompt surgical intervention to avoid tracheotomy. In non-syndromic cases, nasal airway reconstruction alone typically stabilizes breathing. However, in syndromic cases, additional upper airway narrowing may persist even after choanal surgery, necessitating tracheotomy. Preoperative evaluation of the entire airway is critical for determining the need for tracheotomy and for planning individualized management.

P17

Management of Nasal Rhinosporidosis In A Non-endemic Country

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Introduction
Rhinosporidosis is a chronic granulomatous disease caused by the organism Rhinosporidium seeberi. Rhinosporidosis is rarely seen in Singapore, fewer than 10 cases reports published in literature. This disease should be a considered as a differential diagnosis in patients who have had previous exposure, even in they currently reside in non-endemic regions of the world.

Methods
A Singaporean male patent of South Asian ethnicity with nasal Rhinosporidosis, was managed at our tertiary centre. He had a previous history of nasal lump excision almost 30 years prior. He presented with a unilateral nasal mass incidentally noted on imaging for a separate medical issue. He reported no nasal symptoms and his diagnosis was confirmed with histological examination.

Results
Patient was treated with excision of the nasal mass and received post-operative medical therapy of dapsone. He is currently on followup both with the ENT and infectious diseases departments.

Conclusions
Although the disease is non-endemic in Singapore, there are a significant number of migrants in Singapore from endemic regions. With the ease of travel globally, this uncommon disease will need to be included in the differential diagnoses for a patient from endemic regions presenting with a nasal mass. Especially so, for a patient with a history of previously resected nasal mass, as Rhinosporidosis has been known to have high recurrence rates, up to 63% (Mathew et al., 2020). Surgical excision remains the mainstay of treatment and subsequent medical treatment for durations of up to a year (Raja et al., 2024) needs to also be considered to reduce recurrence rates.

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P18

The Efficacy and Safety of Endoscopic vs Open Surgery in the Treatment of Nasolabial Cysts: A Systematic Review and Meta-Analysis

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Introduction:
Nasolabial cysts are rare, non-odontogenic developmental lesions located between the nasal vestibule and upper lip, accounting for 0.7% of maxillofacial cysts. Surgical excision is the standard treatment.

Aims:
While the open sublabial approach is the conventional method, minimally invasive transnasal endoscopic techniques have emerged. This study compares the effectiveness and safety of these two approaches.

Methods:
A systematic review was conducted following PRISMA guidelines. Databases searched included PubMed, Embase, and ScienceDirect for articles published between January 1990 and February 2025. A total of 12 studies were included in the review, and 6 in the meta-analysis. Data was extracted on operative time, postoperative pain, complication rates, recurrence, admission rates, anesthesia use, length of stay, and medical costs. Meta-analyses were performed using random-effects modeling. Interestingly, all articles were from Asia which may point towards an increased awareness and interest in the condition.

Results:
The meta-analysis found no significant difference in recurrence rates between transnasal and sublabial groups (RD = 0.00; 95% CI: –0.04 to 0.03; P = 0.74). However, transnasal surgery was associated with significantly shorter operative time (Mean difference (MD) = –32.44 minutes, $p<0.00001$), lower postoperative pain scores (MD = –2.82, $p<0.00001$), and trends toward reduced facial swelling, numbness, and general anesthesia use. Admission rates, medical costs and hospital stays were generally lower in the transnasal group.

Conclusions:
Both transnasal and sublabial approaches are effective in treating nasolabial cysts. However, transnasal endoscopic surgery offers notable perioperative advantages including reduced pain, shorter operative time, and lower morbidity. It is particularly suitable for outpatient settings and patients at higher risk of surgical complications. Further longer-term prospective studies are needed to validate these findings.

P19

Nasal Surgery under Local Anesthesia How I Do It

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At present, many hospitals are equipped with well-established anesthesiology departments, allowing otolaryngological surgeries to be routinely performed under general anesthesia. However, with increasing life expectancy, a growing number of elderly and super-elderly individuals seek surgical interventions to enhance their quality of life. In these cases, patients often present with multiple comorbidities, making general anesthesia potentially hazardous.

Given that otolaryngological procedures are typically localized, they can be conducted effectively with appropriate analgesia and sedation. This paper aims to introduce efficient anesthetic techniques that consider relevant anatomical features and highlight critical precautions for safe sedation administration.

Furthermore, surgical video cases will be presented, including those involving eosinophilic sinusitis with marked inflammation and sinus pathologies necessitating bone drilling. Strategies for overcoming common obstacles encountered during the initiation of surgeries under local anesthesia will also be discussed, along with practical insights derived from real surgical experiences.

Adopting local anesthesia for such procedures can significantly lessen the workload on operating room personnel, including anesthesiologists, while simultaneously reducing physical stress on the patient.

P20

Assessment of symptom-specific responsiveness and treatment goals of biologics for postoperative recurrent eosinophilic chronic rhinosinusitis

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Background. The use of biologics has been increasing in the management of postoperative recurrent eosinophilic chronic rhinosinusitis (ECRS). However, criteria for quantifying treatment response and defining appropriate treatment goals remain unclear. This study aimed to identify symptom-specific responsiveness and propose treatment goals using our proposed nasal symptoms questionnaire (NSQ).

Methods. We retrospectively analyzed 51 patients with postoperative recurrent ECRS treated with biologics (dupilumab or mepolizumab) between June 2020 and February 2025. All patients had no systemic steroid use within 12 months prior to treatment initiation. There were 32 males and 19 females, with a median age of 51 years (range, 31–75years). NSQ was used to assess symptom severity at baseline and 3 months post-treatment. The NSQ comprises 10 items, each rated from 0 (none) to 3 (very severe), with a total score ranging from 0 to 30. We calculated improvement rates as [baseline – 3 months score) / baseline × 100]. Wilcoxon signed-rank tests were used for statistical analysis.

Results. The median NSQ improvement rate was 43.8% (range, 0–80%). Among the NSQ items, significant improvements were observed in nasal discharge, nasal obstruction, postnasal drip, and loss of smell ($p < 0.05$). Nasal obstruction and loss of smell showed the most significant improvement ($p < 0.01$). No significant change was observed in the remaining NSQ items.

Discussion. Biologics significantly improved specific symptoms, especially nasal obstruction and loss of smell, in patients with the postoperative recurrent ECRS. An overall NSQ score improvement of ≥40% appears to be a clinically achievable treatment goal. A symptom rated as "very severe" (score 3) requires a 1.2-point reduction to achieve a 40% improvement. Consequently, an improvement of ≥1 point in individual NSQ items can be considered both quantitatively and clinically meaningful, serving as a practical symptom-specific treatment goal.

P21

Incidentally Discovered Large Septochoanal Polyp in an Asymptomatic Patient – Case Report

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Nasal polyps are benign, soft-tissue growths arising from the nasal mucosa, most often associated with chronic inflammation and typically originating from the paranasal sinus ostia. They rarely arise from the nasal septum, and the pathogenesis in such cases remains unclear. We report the case of a 34-year-old woman referred after a routine health examination revealed elevated Epstein–Barr virus (EBV) antibody titers. She was entirely asymptomatic, denying nasal obstruction, rhinorrhea, epistaxis, allergic symptoms, hyposmia, neck swelling, or ear fullness, and had no family history of nasopharyngeal carcinoma. Nasal endoscopy revealed a smooth nasopharyngeal mucosa but identified a pedunculated, polypoid mass extending from the right posterior choana into the nasopharynx. Paranasal sinus computed tomography demonstrated a 2.3 cm lobulated soft-tissue lesion with dense calcification. The patient underwent complete endoscopic excision of the mass, along with a nasopharyngeal biopsy for histopathological evaluation. Histopathology confirmed the diagnosis of an inflammatory nasal polyp, and the nasopharyngeal biopsy showed no evidence of malignancy. The postoperative course was uneventful, with no recurrence detected on follow-up nasal endoscopy. This case represents an incidentally discovered septochoanal polyp in an asymptomatic adult. Although rare, such lesions may be detected during evaluation for unrelated clinical conditions, highlighting the importance of thorough nasal examination.

P22

Withdrawn

P23

A Case of Malignant Lymphoma of the Paranasal Sinuses Discovered Due to Multiple Bone Lesions

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Malignant lymphoma of the paranasal sinuses is rare, and most cases are B-cell type with relatively low malignancy. However, even among these, cases with concomitant bone lesions are known to have a poor prognosis. We report a case of paranasal sinus malignant lymphoma discovered due to multiple bone lesions.

The patient was a 58-year-old man. Approximately two months prior to X, he experienced pain in his right little finger. He visited a local orthopedic surgeon, where radiographic examination revealed multiple osteolytic lesions in the distal extremities. He was referred to our hospital's orthopedic department, where metastatic bone tumors were suspected. A contrast-enhanced CT scan was performed to locate the primary site. The CT scan identified a tumorous lesion with bone destruction in the right ethmoid sinus, leading to referral to our department. At the initial visit, although the right inferior turbinate and uncinate process were enlarged, the paranasal sinus mucosa was clear, and no tumorous lesions were identified. Therefore, a paranasal sinus tumor biopsy was performed under general anesthesia. The tumor was easily bleeding and soft tissue. A rapid intraoperative pathology diagnosis suggested malignant lymphoma. A generous tissue sample was obtained, and formalin-fixed specimens and saline wet preparations were prepared. The pathology result was Diffuse large B-cell lymphoma. The patient was referred to our hospital's hematology department. PET imaging revealed a paranasal sinus mass, multiple bone lesions, and multiple subcutaneous masses, leading to a stage 4 diagnosis. Pola-R-CHP therapy was initiated in X month.

Sinus malignancy with multiple bone lesions carries a poor prognosis, necessitating early diagnosis. Malignant lymphoma is difficult to diagnose without sufficient specimens, so it is considered necessary to perform biopsy with the possibility of malignant lymphoma in mind.

P24

Dupilumab for Chronic Rhinosinusitis with Nasal Polyps: A Case Series from Taiwan

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Background

The objective of this study was to compare endoscopic sinus surgery (ESS) alone with ESS plus short-term adjuvant dupilumab in patients with chronic rhinosinusitis with nasal polyps (CRSwNP), by assessing changes in Sino-Nasal Outcome Test (SNOT-22) scores and polyp recurrence rates.

Methods

A retrospective cohort study was conducted between January 2023 and September 2024. A total of 319 patients underwent ESS, of whom 163 had bilateral disease. Among these, 97 patients met the diagnostic criteria for bilateral CRSwNP. Twelve patients received postoperative dupilumab in addition to ESS, and 85 patients underwent ESS alone. The primary endpoints were changes in overall SNOT-22 scores and recurrence rates; the secondary endpoint was time to postoperative recurrence.

Results

The mean age of the CRSwNP cohort was 52.4 ± 14.5 years, with 58% male patients. The mean follow-up duration was 5.3 ± 4.4 months. The overall recurrence rate after ESS was 32% (31/97). Patients who experienced recurrence were more likely to be male (74% vs. 50%, p = 0.020) and had higher preoperative Lund-Mackay scores (16.3 ± 3.8 vs. 11.9 ± 4.0, $p < 0.001$). Other baseline factors, including eosinophil counts and asthma, were not significantly different. In the subgroup analysis, patients receiving dupilumab showed greater SNOT-22 improvement (55.1 ± 7.3 vs. 47.4 ± 8.3, p = 0.007) and longer recurrence-free intervals (12.5 ± 7.8 vs. 5.8 ± 3.6 months, p = 0.036) compared to the ESS-only group. Although recurrence rates were lower with dupilumab, this did not reach statistical significance (17% vs. 34%, p = 0.177).

Conclusion

ESS combined with postoperative dupilumab was associated with superior disease-specific quality-of-life improvement and delayed recurrence compared with ESS alone. Baseline disease burden, particularly Lund-Mackay score, was predictive of recurrence. Larger studies with longer follow-up are warranted to validate these findings.

P25

A Case of Frontal Sinus Cholesterol Granuloma Treated by Endoscopic Surgery

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Background:
Cholesterol granuloma is a benign lesion most frequently occurring in the temporal bone. Its occurrence in the paranasal sinuses is relatively rare, and the frontal sinus is reported to be the most common site of involvement. We report a case of frontal sinus cholesterol granuloma treated by endoscopic surgery.
Case Presentation:
A 48-year-old man presented with a one-year history of swelling of the left forehead. He was referred to our department after a frontal sinus tumor was suspected at the referring hospital. Computed tomography revealed an expansile lesion in the left frontal sinus with thinning and bulging of the bony wall and extension into the orbit. Magnetic resonance imaging demonstrated that the lesion was predominantly hyperintense on both T1- and T2-weighted images, which is typical of cholesterol granuloma. In addition, a portion of the lesion showed slightly high signal on T1 and low signal on T2, suggestive of hemorrhagic changes in the contents. Based on these findings, endoscopic sinus surgery was performed. A Draf type IIB approach was used to create a wide frontal sinusotomy, thereby ensuring adequate drainage and ventilation. Complete removal of the lesion was not performed, and a drainage tube was placed at the surgically created opening of the lesion to maintain patency.
Results:
Histopathological examination revealed foreign-body granulomatous inflammation with cholesterol clefts and hyalinized fibrous tissue, confirming the diagnosis of cholesterol granuloma. The postoperative course was uneventful. The patient received antibiotics and nasal irrigation, and regular endoscopic follow-up was carried out. At 9-month follow-up, no recurrence was observed, and the swelling of the left forehead had improved markedly.
Conclusion:
Frontal sinus cholesterol granuloma can be effectively treated by endoscopic frontal sinus surgery that ensures sufficient drainage and ventilation, even without complete excision of the lesion. Long-term follow-up is essential as recurrence remains possible.

P26

Evaluation of the Effectiveness of Nasal Irrigation in Patients with Cedar Pollen Allergy

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Background
The prevalence of Japanese cedar pollen allergy is increasing in Japan, causing societal concerns due to its impact on daily life and reduced productivity. The Japanese Guidelines for the Diagnosis and Treatment of Allergic Rhinitis describe the usefulness of oral medication, immunotherapy, and surgical treatment for allergic rhinitis. Non-pharmacological treatments include antigen avoidance and nasal irrigation. Nasal irrigation is clinically used for improving nasal symptoms such as allergic rhinitis and chronic sinusitis, as well as for improving the nasal environment. However, while the guidelines mention the usefulness of antigen avoidance, the evidence for nasal irrigation is insufficient and it is not currently included. We therefore investigated the effectiveness of nasal irrigation as a non-pharmacological treatment for cedar pollen allergy by examining its effects in patients with this condition.
Method
The study was conducted during the 2023 cedar pollen season. Forty-five cedar pollen allergy patients were divided into three groups of 15 each: Group A (nasal irrigation with saline solution), Group B (nasal irrigation with Hananoa), and Group C (no nasal irrigation). Groups A and B underwent nasal irrigation for two weeks. Nasal symptoms before and after irrigation were assessed via questionnaire, and the degree of change was evaluated.
Results
No adverse events were observed in either Group A or Group B, which underwent nasal irrigation. While improvements in nasal symptoms were seen in both groups before and after irrigation, the number of items showing a significant decrease in scores was comparable. Regarding QOL scores, however, Group A and Group C showed significant improvement in only 1 out of 17 items, whereas Group B showed improvement in 9 items.

Poster Laryngology

P27

An Epidemiological Analysis of Vocal Fold Atrophy at Tokyo Voice Center

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Introduction: The global and national populations are ageing, leading to increased morbidity of vocal fold atrophy (VFA), a prevalent voice disorder among the elderly.Consequently, recent epidemiological data on VFA in our country is lacking. This study, therefore, extracted medical records, including age, MPT, VHI, occupation, and complications of newly diagnosed VFA patients at our institution, to explore their interrelations.
Methods: A single-centre retrospective chart review examined records of patients newly diagnosed with VFA from January 2020 to December 2022, analyzing age, sex, maximum phonation time (MPT), Voice Handicap Index (VHI), occupation, and voice disease complications.
Results: The study included 610 patients (319 women, 291 men), aged 17 to 96 years (median 64 years, mean 61.14 years), with the majority in their 70s. Approximately 25% were under 50, with some patients in their teens and 20s diagnosed with VFA. Women outnumbered men overall, but there were more men in their 60s and nearly equal numbers in their 70s. Among those aged ≥60 years, there were 185 women and 189 men, with a slightly higher number of men. Some were diagnosed with atrophy at a young age. Most participants were unemployed, and functional dysphonia was the most common complication. A negative correlation was observed between age and MPT (R = -0.14), age and VHI (R = -0.13), and MPT and VHI (R = -0.21) for all 610 patients. The relationship between age and MPT (R = 0.03), age and VHI (R = -0.12), and MPT and VHI (R = -0.26) in the 110 unemployed individuals. The relationship between MPT and VHI in unemployed women (R = -0.14) and men (R = -0.42) is depicted , with a moderate negative correlation found in men but not in women. For the 96 company clerks, the relationship between age and MPT (R = 0.01), age and VHI (R = -0.28), and MPT and VHI (R = -0.23) is shown. For 78 VPs, the relationship between age and MPT (R = -0.18), age and VHI (R = -0.06), and MPT and VHI (R = -0.19) is shown.
Conclusions: We discovered that (1) VFA can affect young individuals, (2) VFA's prevalence may not vary by sex when young people are considered, and (3) MPT and VHI are correlated in unemployed men. We argue that VFA should not be viewed solely as a condition affecting men or older adults. With an ageing population, the incidence of VFA and aspiration pneumonia is anticipated to rise both nationally and globally. Utilizing simple tests like the MPT appropriately could potentially extend the healthy life expectancy of unemployed men diagnosed with VFA.

P28

Tracheostomy Dependence in Hypopharyngeal Cancer: Prognostic Impact of Primary Chemoradiation

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Objectives: Organ preservation strategies are increasingly adopted for hypopharyngeal carcinoma, but functional outcomes may be suboptimal.
Post-treatment tracheostomy dependence significantly increases morbidity and reduces quality of life. This study evaluated airway outcomes and oncologic results in patients treated with primary chemoradiotherapy (CRT) or upfront surgery.
Methods: This retrospective study included 165 patients, with data collected on demographics, treatment type, tracheostomy status, and oncologic outcomes. The primary endpoint was long-term tracheostomy dependence. Oncologic outcomes, including local control, disease-free survival (DFS), and overall survival (OS), were analyzed.
Results: Among the 165 patients included, 139 had advanced-stage disease; 54 received CRT and 85 underwent upfront surgery. The five-year OS rate was significantly higher with surgery (40.0%) than CRT (18.4%). Patients who underwent total laryngectomy (TL) had higher five-year OS (35.5% vs. 28.6%) and three-year DFS (41.9% vs. 27.3%) compared to those managed with organ preservation. When stratified by airway status, five-year OS was 58.8% in patients with preserved airways, 29.3% after TL, and 6.7% in those with long-term tracheostomy dependence. Notably, emergency tracheostomy (n=41) was associated with significantly poorer OS (12.2%), and none of these patients retained their native airway. Overall, 75.54% (105/139) of advanced-stage patients ultimately lost their native airway, including 55.84% (43/77) of those who initially pursued an organ preservation strategy.
Conclusions: Patients with long-term tracheostomy dependence exhibited the poorest prognosis and highest recurrence rates. Emergency tracheostomy was a strong predictor of long-term dependence. Upfront surgery may be more appropriate for patients with impaired baseline laryngeal function.

P29

The rate of occult lesions in unilateral vocal fold paralysis with unknown causes

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This study retrospectively reviewed the medical charts of patients with unilateral vocal fold paralysis (UVFP) and investigated the yield rate of occult lesions along the recurrent laryngeal nerve (RLN) and the vagus nerve.

The diagnostic process started with a thorough history taking regarding preceding surgery, concurrent cancer, trauma or intubation history, and referred reports. Those with unknown causes received imaging studies. Patients with lesions along the course of the vagus and the RLN were defined as the occult group, while those without identified lesion were defined as the idiopathic group.

Among the 437 patients, 316 were of known causes. The remaining 121 patients of unknown causes received contrast-enhanced neck and chest CT scans (N = 117), or brain and neck MRIs (N = 4). Occult lesions were identified in 48 patients (39.7 %). Age of patients in the occult group (63.7 ± 11.1 years) was significant higher than those in the idiopathic group (54.0 ± 16. 6 years, $p < 0.01$); whereas occult group had shorter symptom duration than idiopathic group (4.47 ± 17.2 vs. 12.7 ± 24.5 months, $p = 0.04$). We also noticed a higher rate of smoking in the occult group (48 %), compared with idiopathic group (26 %, $p = 0.01$). When occult lesions were found, the malignancy rate is (87.1 %) was significantly higher in the chest than in the neck (43.8 %, $p < 0.01$).

Conclusion: This study revealed that UVFP of unknown causes account for 27.7 % of all incidences, while the yield rate of occult lesions was 39.6 %. Occult lesions were more common in older patients and smokers, while chest lesions were more likely to be malignant.

P30

Detection of voice disorders by deep learning using optical microphone

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This study aims to develop an optical pathological voice detection (OPVD) system using optical microphone (i.e. laser doppler velocimetry, LDV) and deep learning techniques, and evaluate its performance against those of traditional microphone-based systems under various noise conditions. The OPVD system captures vocal fold vibrations using the LDV and employs convolutional neural networks (CNNs) for classification. We conducted experiments on our proposed system in both quiet and noisy environments to assess its accuracy and noise resistance. The OPVD system demonstrated superior performance to that of the air-conducted microphone system, achieving an average test accuracy of 96% in quiet conditions. It also maintained high accuracy under noisy conditions, with average accuracies of 91%, 86%, and 90% for 2-talker noise, pink noise, and IEEE simultaneous switching noise (SSN), respectively. The non-invasive nature of the OPVD system reduces the risk of aerosol contamination. Its ability to maintain high accuracy in noisy environments makes it also suitable for real-world clinical settings, where ambient noise is often unavoidable.

P31

A RARE CASE OF LARYNGEAL TUBERCULOSIS DURING PREGNANCY

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Despite tuberculosis leading infectious mortality rates worldwide, laryngeal manifestations of the disease are rare (accounting for 1% of tuberculosis cases worldwide) and often misdiagnosed. Laryngeal tuberculosis presents a diagnostic dilemma as cases are nonspecific and have features that overlap with more common laryngeal pathologies. Due to the physiological impact pregnancy has on the immune response, pregnant women are at increased risk of these extrapulmonary manifestations. The immunological changes that occur during pregnancy alter disease progression and complicate management, making early identification and diagnosis of the disease imperative. We present the diagnostic dilemma of a rare case of laryngeal tuberculosis in a 29-year-old pregnant female from Queensland Australia, highlighting the presentation, diagnostic challenges, endoscopic findings and management considerations for this population. This case study demonstrates the importance of considering laryngeal tuberculosis as a differential diagnosis for undifferentiated, treatment resistant laryngeal pathology and demonstrates the value of maintaining a broad diagnostic approach. Early recognition and initiation of appropriate therapy can optimize maternal and foetal outcomes and help to avoid unnecessary and invasive interventions that place patients at risk of harm.

P32

Management of hypopharyngeal perforation complicated with pneumothorax and pneumomediastinum in an extremely low birth weight preterm infant

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Iatrogenic hypopharyngeal or esophageal perforation is a rare but potentially fatal complication associated with nasogastric or orogastric tube placement. This risk is heightened in extremely low birth weight preterm infants due to their fragile anatomy and tissue vulnerability.

We present the case of a female preterm infant born at 25 weeks of gestation, with a birth weight of 480 grams. Soon after delivery, attempts at orogastric tube insertion were unsuccessful, followed by the onset of respiratory distress and right-sided pneumothorax, necessitating admission to the neonatal intensive care unit. The initial diagnosis was esophageal perforation; however, flexible fiberoptic nasopharyngolaryngotracheoscopy confirmed a hypopharyngeal perforation. The previously placed 6 Fr orogastric tube had traversed the perforation site, extended through the retropharyngeal space into the mediastinum and pleural cavity, and repeated attempts at proper tube placement under endoscopic guidance were unsuccessful due to mucosal swelling at the site of perforation.

During endoscopic evaluation and intervention, the team employed the smallest available rigid ventilation bronchoscope (#2.5) as an esophagoscope. This ventilation bronchoscope allowed insufflation by using an Ambu bag, thereby distending the esophageal lumen and facilitating identification of the true esophageal tract leading into the stomach. Under this guidance, a pediatric central venous catheter guidewire was placed through the bronchoscope, enabling successful placement of a 6 Fr orogastric tube into the esophagus and stomach.

Hypopharyngeal or esophageal perforations are frequently accompanied by complications such as pneumothorax or pneumomediastinum. Early recognition and timely management are critical determinants of prognosis. This report further discusses the management of difficult nasogastric or orogastric tube insertion and associated complications in preterm infants.

P33

Three-Dimensional Analysis of Vocal Fold Nodules in Operatic Soprano Singers undergoing Microlaryngeal Surgery: Differences According to Voice Type Subcategories (Lyric vs. Dramatic)

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Objectives

Vocal demands in opera singers vary not only by vocal range but also by voice type subcategories (e.g., lyric vs. dramatic), which shapes technique and repertoire. Despite this, little is known about how these voice subcategories influence vocal fold pathology. To address this gap, we investigate the three-dimensional characteristics of vocal fold nodules in professional soprano opera singers and to clarify morphological differences based on voice type subcategories (lyric vs. dramatic).

Methods

This retrospective study included 19 professional soprano singers who underwent microlaryngeal surgery for bilateral vocal fold nodules between January 2018 and May 2023. Voice type subvategories, based on self-reported repertoire, was categorized as either lyric or dramatic. Nodules were classified as edematous or fibrous. Vertical location, pseudo-area, pseudo-contact area, and pseudo-volume of the nodules were calculated using intraoperative measurements and surgical video review. Statistical comparisons were performed between the lyric and dramatic groups.

Results

A total of 38 nodules were analyzed: 26 from lyric sopranos and 12 from dramatic sopranos. Lyric sopranos predominantly exhibited edematous nodules (24/26), while dramatic sopranos had a higher proportion of fibrous nodules (6/12). In both groups, nodules were more frequently located in the upper part of the vocal folds. Lyric sopranos showed significantly greater width, pseudo-area, pseudo-contact area, and pseudo-volume of vocal fold nodules compared to dramatic sopranos.

Conclusion

Voice type subcategories may influence the morphological characteristics of vocal fold nodules in professional soprano singers. Lyric sopranos tend to develop larger, edematous nodules, likely due to repetitive high-frequency phonation, while dramatic sopranos are more prone to smaller, fibrotic nodules, potentially resulting from greater horizontal mechanical stress.

Poster Head and Neck

P34

Timosaponin AIII inhibits LMP1-mediated metastasis in nasopharyngeal carcinoma cells by targeting midkine/AKT/ERβ signaling axis

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Nasopharyngeal carcinoma (NPC) is a highly malignant tumor characterized by its aggressive invasion and frequent metastasis to regional lymph nodes. In Asia, NPC is strongly associated with Epstein–Barr virus (EBV) infection, which has been identified as a major etiological factor in its pathogenesis. Timosaponin AIII (TSAIII), a steroidal saponin, has demonstrated anticancer activity in various cancer types. However, the antitumor effects and molecular mechanism of TSAIII in NPC cells remain unclear. Our results showed that TSAIII had minimal impact on the viability of NPC-BM and NPC-39 cells. Boyden chamber assays revealed that TSAIII dose-dependently inhibited the migration and invasion of both NPC cells. Human cytokine array analysis further demonstrated that TSAIII downregulated the expression of midkine in both NPC cells. To evaluate the role of EBV infection, we established an LMP1-overexpressing NPC cell line (NPC-39-LMP1) to reveal that TSAIII effectively inhibited LMP1-mediated migration and invasion in NPC-39-LMP1 cells. Moreover, we found that the AKT/ERβ signaling pathway, an upstream regulator of midkine, was activated upon LMP1 overexpression. Western blot analysis confirmed that TSAIII markedly suppressed LMP1 expression and its associated signaling in NPC-39-LMP1 cells. In an in vivo NPC metastasis mouse model, TSAIII treatment significantly reduced the number of lung metastatic nodules without affecting body weight. In conclusion, our findings indicate that TSAIII inhibits LMP1-mediated metastasis in NPC cells by suppressing midkine expression through the AKT/ERβ signaling pathway. These results provide new insight into the potential therapeutic application of TSAIII for treatment of NPC.

P35

Cystic Neck Masses, a Diagnostic Challenge: Parotid Oncocytic Cystadenoma Masquerading as a Branchial Cleft Cyst in a Patient With Concurrent Papillary Thyroid Carcinoma

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Oncocytic cystadenoma is a rare, benign salivary gland neoplasm characterized by cystic spaces lined with oncocytic epithelium. Its clinical and radiological features may mimic other lateral neck masses, including branchial cleft cysts or cystic nodal metastases, complicating preoperative diagnosis. We report a case of oncocytic cystadenoma arising from the tail of the parotid in a patient with synchronous papillary thyroid carcinoma. The patient presented with a cystic lateral neck mass which was initially identified as a branchial cleft cyst based on imaging, cytology, and frozen section. Cystic metastasis was also raised as a differential in view of the thyroid lesion. Definitive diagnosis was reached with histology from surgical excision. This case highlights the diagnostic challenge of adult-onset cystic neck masses, particularly with concurrent thyroid pathology. It underscores the limitations of cytology in cystic lesions and reinforces the importance of histopathological confirmation. A broad differential diagnosis should be considered—including rare entities such as oncocytic cystadenoma.

P36

Distribution of Adverse Pathological Features in Tongue, Buccal, and Other Subsites of Oral Cancer: A Nationwide Study

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Background:
Oral squamous cell carcinoma (OSCC) exhibits substantial pathological heterogeneity across anatomical subsites. However, most prior studies have not examined subsite-specific pathological factors in detail. This study aimed to evaluate the clinical and pathological characteristics of OSCC across major oral subsites using a nationwide cancer registry.
Methods:
A total of 17,118 patients with surgically treated OSCC diagnosed between 2018 and 2022 were identified from the Taiwan Cancer Registry. Pathological factors—including perineural invasion (PNI), lymphovascular invasion (LVI), lymph node density (LND), and extranodal extension (ENE)—were analyzed across three major oral subsites (Buccal, tongue and others). Multivariate logistic regression was used to assess the associations between pathological factors and subsites. Survival analyses were performed using life table methods with Kaplan–Meier plots to estimate overall survival (OS) and disease-specific survival (DSS), with 5-year survival rates and corresponding 95% confidence intervals (CIs).
Results:
Adverse pathological features—including PNI, LVI, and ENE—showed varied distributions across OSCC subsites. After adjusting for gender, age, and T status, tongue cancers were associated with higher odds of adverse pathological factors: OR 2.68 (95% CI: 2.44–2.95) for PNI, OR 1.72 (95% CI: 1.55–1.91) for LVI, and OR 1.84 (95% CI: 1.64–2.07) for ENE. Notably, despite these aggressive pathological features, tongue tumors were associated with superior survival outcomes (5-year OS: 66%, 95% CI: 65–68%) compared to other subsites (5-year OS: 62%, 95% CI: 60–63%), potentially due to better surgical accessibility and greater use of adjuvant therapy.
Conclusions:
PNI, LVI and ENE status showed distinct distributions among OSCC subsites, highlighting the need for tailored prognostic assessment and individualized management strategies.

P37

Diffuse Large B-cell Lymphoma of the Maxillary Sinus Presenting as Odontogenic Pain: A Rare Case Report

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Background:
Diffuse large B-cell lymphoma (DLBCL) is the most common subtype of non-Hodgkin lymphoma, but primary involvement of the maxillary sinus is rare. Because of its nonspecific presentation, such cases are often misdiagnosed as odontogenic or inflammatory sinus conditions.
Case presentation:
We report the case of a 62-year-old male with no history of chronic illness or substance use, who initially presented with right-sided upper jaw pain. He sought dental evaluation, where radiographic findings suggested odontogenic maxillary sinusitis. The patient was referred to our oral and maxillofacial surgery department, and a CT scan revealed a soft-tissue mass occupying the right maxillary sinus without bony destruction. Combined surgical intervention with the otorhinolaryngology team was performed, and biopsy specimens were obtained. Histopathological analysis confirmed a diagnosis of diffuse large B-cell lymphoma. Immunohistochemistry was positive for CD20 and negative for CD3, supporting the B-cell lineage. Systemic workup and staging studies were initiated following diagnosis.
Conclusion:
This case highlights the diagnostic challenge of primary sinonasal lymphoma, particularly when it presents with symptoms mimicking common dental or sinus disorders. Although rare, DLBCL should be considered in the differential diagnosis of unilateral maxillary sinus lesions, especially when imaging reveals homogenous soft tissue masses without typical features of infection or inflammation. Prompt biopsy and histological evaluation are essential for early diagnosis and appropriate management.

P38

A Case of Tracheal Resection for Papillary Thyroid Carcinoma with Staged Tracheal Reconstruction

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Papillary thyroid carcinoma (PTC) is a malignant tumor with a generally favorable prognosis. However, there are some high-risk groups with severe invasion to surrounding tissues such as the trachea. Because of the nature of PTC, resection of the tumor with tracheal resection is expected to result in long-term survival.
50-year-old man had noticed bloody sputum and dyspnea for 1 month and visited an emergency center. CT revealed a tumor in the right lobe of the thyroid gland with tracheal invasion, and he was referred to our hospital. He had a history of hypertension.
A 40 mm tumor in the right lobe of the thyroid gland was palpable. MRI showed that approximately two-thirds of the tumor had invaded the trachea from the right side of the trachea to the membranous portion. Recurrent laryngeal nerve palsy was not observed. Fine needle aspiration (FNA) from the thyroid gland and bronchoscopic biopsy confirmed the definite diagnosis of PTC. No lymph node metastasis or distant metastasis was observed. It was diagnosed as PTC cT4aN0M0 stage I.
Clinical course: Because the tracheal lumen narrowed by more than 50% was too difficult to oral intubation, total thyroidectomy, bilateral central neck dissection, and tracheal resection were performed under general anesthesia using extra corporeal membrane oxygenation (ECMO). Bilateral recurrent laryngeal nerves were preserved. Only the left wall of the trachea was left, resulting in a defect of about three-quarters. A tracheocutaneous fistula was created using DP flap. He was discharged 18 days after surgery without any postoperative problems with oral intake and airway stenosis.
Radioactive iodine (RAI) therapy was performed at 5 months after primary tumor surgery.
First staged surgery (5 months after primary tumor surgery): The right costal cartilage (approximately 30 mm) was removed, processed into 3 slices to form the future posterior, lateral, and anterior walls, and inserted subcutaneously into the DP flap.
Second staged surgery (8 months after primary tumor surgery): Tracheal reconstruction was performed by separating the cartilage in the flap and leaving the fistula only in the anterior wall.
Third staged surgery (18 months after primary tumor surgery): It was confirmed that there was no collapse of the tracheal lumen, and the anterior wall of the trachea was closed.
At present, 3 years and 5 months after treatment, no respiratory tract trouble, recurrence, or metastasis has been observed.

P39

Evaluation of Tracheostoma Enlargement Surgery for Permanent Tracheostoma Stenosis in Our Department

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Objective:
To evaluate surgical outcomes of tracheostoma enlargement for permanent tracheostoma stenosis following total laryngectomy.

Methods:
We retrospectively reviewed patients who underwent total laryngectomy for hypopharyngeal or laryngeal cancer at our department between April 2017 and March 2023. Among 62 patients, tracheostoma stenosis occurred in 14 (22.6%). Of these, 13 patients underwent 28 enlargement procedures (1–4 per patient). Surgical techniques, anesthesia methods, and inpatient vs. outpatient settings were compared for restenosis rates, defined as the need for additional enlargement surgery.

Results:
Surgical techniques included Z-plasty (n=12), scar excision with re-suturing (n=11), re-suturing without scar excision (n=1), and not documented (n=4). Restenosis occurred without significant difference between techniques. Twenty-two procedures were performed under local anesthesia and six under general anesthesia, with no significant difference in restenosis rates ($p=0.07$). Nine procedures were performed during hospitalization and 19 in the outpatient clinic. Inpatient procedures were associated with significantly lower restenosis rates compared with outpatient procedures ($p<0.05$).

P40

Lenvatinib for unresectable anaplastic thyroid cancer: real-world experiences in multi-institutional study

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Purpose: Anaplastic thyroid carcinoma (ATC) is a rare, aggressive malignancy with poor prognosis. Lenvatinib has demonstrated moderate efficacy and is approved for unresectable ATC treatment in Japan. However, some patients are unable to tolerate the standard 24 mg daily dose and require dose reductions or interruptions due to its high incidence of adverse effects. This study aimed to evaluate the therapeutic effects of lenvatinib in patients with ATC, particularly assessing outcomes with reduced dosages across multiple institutions.

Methods: Sixteen patients diagnosed with ATC and treated with lenvatinib were evaluated retrospectively. Overall survival (OS) and progression-free survival (PFS) were calculated. In addition, patients were divided into two groups based on 24 mg daily dose or reduced initial dose, and their therapeutic outcomes were compared.

Results: The objective response rate was 31%, and the median OS and PFS were 2.2 and 1.7 months, respectively. Among the 16 patients, 11 (69%) initiated treatment with 24 mg daily, while the remaining 5 (31%) received a reduced dose. No significant differences in OS and PFS were observed between the two groups (p=0.559 and p=0.311, respectively).

Conclusion: Our study demonstrated that lenvatinib has moderate efficacy for ATC. In addition, initiating treatment at a reduced dose could provide therapeutic benefit. Lenvatinib may serve as a treatment option for unresectable ATC when targeted therapies, including BRAF, RET, and NTRK inhibitors, are unavailable. Furthermore, although the standard 24 mg daily dose is recommended, a lower initial dosage may be effective for patients unable to tolerate the full dose.

P41

Primary Intranodal Epithelioid Haemangioendothelioma in the Submandibular Region: A Case Report

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This case is presented by Yun Shih on behalf of Khilan Shukla, Touraj Taheri, Hooman Baghaie and Omar Breik.

Epithelioid haemangioendothelioma (EHE) is a rare vascular tumour that primarily affects the liver, lungs and bone. It is very rarely described in the head and neck region, and is exceptionally uncommon within the submandibular region. We report a very rare case of EHE originating in a lymph node within the submandibular salivary gland of a 54-year-old female patient. The tumour was resected and the patient was regularly followed up, with no recurrence of disease at 24 months postoperatively. A review of existing literature, clinical and immunohistopathological features are discussed, which highlight the diagnostic dilemma, absence of consensus for management and appropriate surveillance method associated with EHE.

P42

Treatment outcomes for advanced oral cancer requiring mandibular resection and hemi-section

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Introduction

The extent of resection of advanced oral cancer of T4 or higher may include the removal of the mandible. Bone resection is classified into marginal resection, segmental resection, semi-incision, and subtotal resection, and in most cases of segmental resection or more, some kind of mandibular reconstruction is required. On the other hand, with combined mandibular resection, postoperative adjuvant therapy is likely to be avoided even in advanced cases due to the high risk of complications.

Objectives, **Materials**, **and Methods**

In this study, we reviewed cases of oral cancer that underwent mandibular resection and reconstruction beyond segmental resection experienced in the past decade.

Materials and methods Here

As a result

, a total of 25 patients were operated on, and the primary site was mostly the mandibular gingiva (17 cases), the central jaw bone in 4 cases, the floor of the oral cavity in 2 cases, and the tongue and sublingual gland in 1 case. The scope of mandibular resection was 20 cases of segmental resection and 5 cases of semi-incision, and there were no cases of subtotal resection. In the reconstruction material, 18 cases used hard tissues such as free scapula or peroneal muscle flaps, and 7 cases used a combination of titanium plates with soft tissues such as the rectus abdominis muscle. In terms of pathology, squamous cell carcinoma was the most common in 20 cases, followed by adenocarcinoma in 1 case, enamel blastoma in 1 case, metastatic tumor in 2 cases, and sarcoma in 1 case. Only three patients received some kind of adjuvant therapy after surgery, and most did not.

Conclusions

The correlation between surgical treatment and adjuvant therapy, complications and prognosis will be reported for the above cases, and the appropriateness of the treatment policy of our department will be discussed.

P43

Sarcomatoid Carcinoma of the Vocal Cord: a Case Report

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Laryngeal cancers are amongst the most prevalent malignancies in the head and neck region, with squamous cell carcinomas accounting for approximately 90% of all cases. Sarcomatoid carcinomas, also referred to as spindle cell carcinomas, are a rare and aggressive variant of squamous cell carcinoma and represents approximately only 2% to 3% of laryngeal malignancies. This tumour type is characterised by its biphasic morphology, exhibiting typical squamous cell carcinoma elements as well as containing spindle-shaped cells that resemble sarcomas. We report a case of a sarcomatoid carcinoma in a 79-year-old woman who presented with a two-month history of dysphonia. She was an active smoker with a 45 pack-year history. Initial flexible nasoendoscopy revealed a polypoid lesion centred on the right true vocal cord, which prolapsed into the glottis during inspiration and retracted on expiration. The patient underwent a microlaryngoscopy with excision of the lesion and histopathological analysis revealed the diagnosis of sarcomatoid carcinoma. Margin clearance was confirmed on subsequent panendoscopy and laser excision of lesion. Follow-up at three months demonstrated reassuring appearances of bilateral vocal cords.

P44

Metachronous Occurrence of p16-Negative Branchiogenic Carcinoma and p16-Positive Oropharyngeal Carcinoma

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Branchial cleft cysts are benign congenital lesions derived from the second branchial arch. Although rare, malignant transformation can occur, typically into squamous cell carcinoma (SCC). In contrast, human papillomavirus (HPV)-related SCC, characterized by p16 overexpression, commonly arises in the oropharynx and shows distinct clinical behavior and prognosis compared with non-HPV-related SCC. We report an extremely rare case of sequential SCCs with differing HPV status.

A 62-year-old man presented in 2020 with a left cervical cystic mass. Imaging and cytology suggested a branchial cleft cyst, and surgical excision was performed. Histopathology revealed intraepithelial SCC arising in the cyst wall, with p16 negativity and no evidence of invasion. No primary lesion was identified despite comprehensive evaluation, and the case met the diagnostic criteria for branchiogenic carcinoma. The patient was followed without adjuvant therapy.

In 2024, the patient developed cervical lymphadenopathy. Neck dissection revealed metastatic SCC, this time p16 positive. Further evaluation detected a primary lesion in the left oropharyngeal wall, which was confirmed histologically as HPV-related SCC. The final diagnosis was metachronous occurrence of p16-negative carcinoma arising in a branchial cleft cyst and p16-positive HPV-related oropharyngeal carcinoma.

This case raises important diagnostic and clinical considerations. Adult cystic neck masses, even when appearing benign, may represent metastatic disease, particularly from HPV-related oropharyngeal carcinoma, which often presents with small primaries and cystic nodal metastases. Although true branchiogenic carcinoma remains a debated entity, the present case demonstrated histologic evidence of SCC within the cyst wall without a detectable primary lesion at the initial presentation, supporting malignant transformation of a branchial cleft cyst. The subsequent emergence of p16-positive oropharyngeal carcinoma suggests independent tumorigenic pathways, reflecting coexistence of non-HPV- and HPV-related carcinogenesis in a single patient.

In conclusion, this is a rare case of sequential SCCs with differing HPV status, initially presenting as p16-negative carcinoma arising in a branchial cleft cyst and later as p16-positive oropharyngeal carcinoma. The case highlights the necessity of thorough diagnostic workup, the importance of p16 and HPV testing in cystic cervical lesions, and the value of long-term surveillance in adults with cystic neck masses.

P45

Successful Transoral Videolaryngoscopic Surgery for Hypopharyngeal Anaplastic Metastasis from Papillary Thyroid Cancer: A case report

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Background

Papillary thyroid cancer (PTC) is known to progress slowly and generally has a relatively favorable prognosis. However, during long-term follow-up, PTC can transform into anaplastic thyroid cancer (ATC). ATC carries an extremely poor prognosis, with typical survival ranging from 6 to 12 months despite multimodal treatments, including surgery, radioactive iodine therapy, and targeted therapy. Moreover, rapid tumor progression in the head and neck region can cause severe dysfunctions such as bleeding, airway obstruction, and swallowing difficulty, significantly impairing quality of life. Therefore, effective tumor control while preserving function is critical in managing ATC.

PTC frequently metastasizes to cervical lymph nodes, lungs, and bones; however, metastasis to the pharynx is extremely rare. Only a few cases of PTC metastasis to the pharynx have been reported, and none have involved anaplastic transformation. We present a first case of hypopharyngeal metastasis exhibiting anaplastic transformation during PTC follow-up.

Case Presentation

A 78-year-old man with a history of PTC treated by total thyroidectomy and radioactive iodine therapy 10 years earlier, presented with a sore throat, swallowing difficulty and mild dyspnea. Fiberoptic examination revealed a 25 mm tumor mass on the posterior hypopharyngeal wall causing airway obstruction. We performed an emergency tracheostomy and tumor biopsy, which confirmed hypopharyngeal anaplastic metastasis of PTC.

Considering the patient's severe general comorbidities—chronic myelogenous leukemia and severe pulmonary hypertension—he underwent transoral videolaryngoscopic surgery under general anesthesia to achieve local tumor control while preserving swallowing function. Postoperatively, genetic testing using the Oncomine Dx Target Test identified the BRAF V600E mutation. Oral intake was resumed on postoperative day 2. Targeted therapy with encorafenib (450 mg daily) and binimetinib (90 mg daily) was initiated on postoperative day 24 as treatment for ATC. At the six-month follow-up, fiberoptic examination and contrast-enhanced CT demonstrated effective tumor control in the pharynx. The patient maintained good swallowing function during outpatient treatment, with successful tracheostomy closure.

Conclusion

This is the first reported case of hypopharyngeal metastasis from PTC involving anaplastic transformation. The combination of minimally invasive transoral surgery and targeted BRAF/MEK inhibitor therapy can provide effective local control while preserving function, even in cases with anaplastic transformation.

P46

A systematic review and meta-analysis of the diagnostic performance of radiomics based models for thyroid nodules risk stratification

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Introduction
Thyroid nodule is a common condition affecting 67% of the general population, of which majority are benign, only 5-10% are malignant. ATA guidelines recommend evaluation with ultrasound imaging where malignant risk classification with validated risk scoring like ACR-TIRADS is used to guide further invasive investigations. However, diagnostic accuracy of such classifications are limited, and further investigation with fine needle aspiration has 20-25% chance of being indeterminate, resulting in unnecessary surgery. Radiomics offers a novel non-invasive method by extracting quantitative information from existing medical images to risk stratify thyroid nodules.

Methods
A systematic review was conducted in accordance with PRISMA guidelines to evaluate diagnostic performance of radiomics based models for malignant risk stratification in patients with thyroid nodules compared with validated risk scores. 404 articles were retrieved using the keywords "Radiomics AND Thyroid" from 3 different databases, with 25 articles meeting inclusion criteria for data extraction. Population characteristics, true positive and false positive rate was recorded for each study. A regression model was applied to plot Summary Receiver Operating Characteristics Curve (SROC) for radiomics model, clinical model, and combined (radiomics and clinical) model. A meta-analysis was also performed comparing Diagnostic Odds Ratio (DOR) of each study in a forest plot.

Results
Comparing Area Under Curve (AUC) in SROC of each model, diagnostic accuracy is similar between radiomics model (AUC = 0.873) and clinical model (AUC = 0.862), but accuracy is significantly increased in the combined model (AUC = 0.891).

Conclusion
The use of both ultrasound radiomics and validated clinical risk stratification scoring in tandem can produce a more accurate diagnostic model for predicting malignancy risk of thyroid nodules. It can be easily integrated into the workflow for work-up of thyroid nodules, thus contributing towards patient outcomes where less patients with thyroid nodules will need to undergo invasive investigations and surgery just to be diagnosed with a benign thyroid nodule.

P47

Recurrence Along the Endoscopic Access Pathway Following Endoscopic Thyroidectomy: A Case Report

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Background
In recent years, endoscopic thyroidectomy has become widely adopted in Japan, and the number of surgical cases has been increasing. We report a case of implantation recurrence along the endoscopic access tract that developed after endoscopic thyroidectomy performed at another hospital.
Case
A woman in her 60s visited our hospital after a 60-mm thyroid nodule was incidentally detected on a CT scan. Fine-needle aspiration cytology suggested a follicular neoplasm. She had a history of radical nephrectomy for renal cell carcinoma 16 years earlier. A conventional open hemithyroidectomy was recommended, but the patient strongly preferred video-assisted thyroidectomy. Finally, she underwent video-assisted hemithyroidectomy through a 5-cm right subclavicular midline incision at another hospital. Postoperative pathology revealed that the thyroid lesion was a metastasis from renal cell carcinoma. Eight years after thyroid surgery, multiple masses appeared on her neck and chest, and their locations corresponded to the surgical pathways used in the endoscopic thyroid surgery; excision of those tumors confirmed renal cell carcinoma. Eleven years after the initial thyroid surgery, tumors appeared in the right neck and paratracheal region. Surgical resection was performed. However, the paratracheal lesion involved the recurrent laryngeal nerve, requiring nerve transection and immediate reconstruction. Twelve years after the initial surgery, she had lung metastases, and systemic therapy was administered and continued.
Discussion
Endoscopic thyroidectomy offers cosmetic advantages, but it requires a wider dissection field compared to open thyroidectomy. Although rare, implantation recurrence—also referred to as port-site or access-site recurrence—has been reported, particularly in tumors with high metastatic potential. This case highlights the need to balance cosmetic outcomes with oncological safety.
Conclusion
Surgical planning for thyroid tumors should incorporate both patient preferences and an assessment of tumor biology, including the risk of implantation recurrence with minimally invasive techniques.

P48

Discovery of Early Recovery of IR700 Fluorescence After Near-Infrared Photoimmunotherapy and Its Mechanistic Basis

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Near-infrared photoimmunotherapy (NIR-PIT) is an emerging molecularly targeted cancer therapy that combines the photosensitizer IRDye700DX (IR700) with tumor-specific antibodies to form antibody–photoabsorber conjugates (APCs). APCs selectively bind to tumor-associated antigens, and upon near-infrared (NIR) light irradiation, the hydrophilic side chains of IR700 dissociate, converting the APC into a hydrophobic form and altering antibody structure. These conformational changes disrupt tumor cell membranes, resulting in rapid and extensive necrotic cell death. Owing to this highly selective mechanism, NIR-PIT is considered a safe and effective treatment. Clinical trials in unresectable head and neck squamous cell carcinoma (HNSCC) demonstrated significant antitumor efficacy, leading to accelerated approval in Japan in 2020. However, recurrence following therapy remains a limitation, highlighting the need for further optimization.

IR700 also possesses intrinsic fluorescence upon light excitation, which disappears after NIR irradiation due to structural modification. This property enables fluorescence imaging to quantify unreacted APCs within tumors. We previously reported that intratumoral fluorescence decreases with irradiation but does not fall to zero, instead reaching a plateau. This plateau appears to represent the threshold beyond which NIR-PIT achieves maximal efficacy.

More recently, we identified a novel phenomenon: intratumoral IR700 fluorescence recovers rapidly immediately after cessation of irradiation. Unlike the enhanced permeability and retention (EPR) effect, which occurs hours after treatment, this recovery begins within minutes, representing an ultra-early biological response. The precise mechanisms remain unclear but may involve dynamic APC–tumor interactions, microenvironmental alterations, or changes in tissue optical properties immediately after therapy.

In this study, using a mouse in vivo model, we describe the early post-treatment recovery of IR700 fluorescence, examine possible underlying mechanisms, and consider its implications for clinical practice. Recognition of this phenomenon could contribute to refinement of light dosing, improved treatment efficacy, and the development of real-time monitoring strategies, ultimately enhancing the therapeutic potential of NIR-PIT in HNSCC and other malignancies.

P49

Morphological Analysis of EBV-Infected Nasopharyngeal Carcinoma

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EBV infection has two modes: latent infection and lytic infection. Latent infection has been considered important for nasopharyngeal carcinoma (NPC) carcinogenesis. However, a large prospective study reported in Taiwan demonstrated that lytic infection is also involved in NPC carcinogenesis. Furthermore, we reported that poor exEBV infection has two modes: latent infection and lytic infection. Latent infection has been considered important for nasopharyngeal carcinoma (NPC) carcinogenesis. However, a large prospective study reported in Taiwan demonstrated that lytic infection is also involved in NPC carcinogenesis. Furthermore, we reported that poor expression of BZLF1, a key regulatorpression of BZLF1, a key regulatory gene of lytic infection, is a poor prognostic factor. Given the importance of lytic infection in NPC carcinogenesis, we decided to perform morphological analysis of EBV-positive NPC cell lines during lytic infection to elucidate the mechanisms of NPC carcinogenesis.

EBV-positive lymphoma cell line (Akata-EBV-neoR) was stimulated with sIgG, cultured for 48 hours, and fixed with 4% paraformaldehyde. Immunohistochemical staining targeting gp350 or VCA was performed. After osmium treatment, samples were coated with NanoSuits® and observed by scanning electron microscopy. Additionally, biopsy specimens from 60 nasopharyngeal carcinoma (NPC) patients treated at Kanazawa University between 2001 and 2019 were observed using the same method.

In stimulated Akata cell lines, 100 nm-sized granules reacting with VCA antibodies appeared. Similarly, 100 nm-sized granules reacting with VCA antibodies were observed in NPC tissues. Next, we compared VCA positivity with prognosis in NPC tissues. Ultimately, we found that VCA-positive NPC cases exhibited significantly shorter progression-free survival.

It is known that stimulating Akata cells with sIgG induces lytic infection. We speculate that the observed 100 nm white granules represent EBV viral particles themselves. Furthermore, based on immunohistochemical analysis, we consider that high EBV production may contribute to poor prognosis in NPC.

P50

Parotid Gland Sarcoidosis: A Case Study of A Rare Extra-Pulmonary Manifestation in a Tertiary Hospital in Western Australia

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Introduction

Sarcoidosis is a multisystemic granulomatous disease of unknown cause that may involve any organ including lungs, peripheral lymph nodes, skin, eyes, liver, spleen and bone joints. Pulmonary sarcoidosis is the most common form of manifestation of the disease. The manifestation of sarcoidosis in head and neck is extremely rare and the incidence of salivary gland sarcoidosis accounts for about 4-6% in patients with systemic sarcoidosis, with a higher prevalence in younger adults and in the female population. The course of sarcoidosis is not characteristics hence making its diagnosis complex. The diagnosis and management of parotid sarcoidosis is also not well documented in literature. To date, there is no case description of the clinical management of a patient with parotid gland sarcoidosis in Australia. This case study aims to improve awareness of its diagnosis and appropriate clinical workup.

Methods

A case study of a patient presenting with parotid mass is described.

Results

We discuss the clinical presentation, investigations, histopathology and the management of this patient and provide an overview of clinical management of parotid sarcoidosis.

Conclusion

Although the clinical manifestation of salivary gland sarcoidosis is rare, it should be taken into account during a head and neck diagnosis. The diagnosis of this disease includes its clinical presentation, imaging, biopsy, immunohistochemistry and cytogenic analysis. The main therapeutic treatment is primary surgical excision with ongoing clinical surveillance.

P51

Prevalence of HPV Infection in Nasopharyngeal Carcinoma Tissues of Patients Treated in Our Department

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Background: Nasopharyngeal carcinoma (NPC) is a malignant disease with an unclear etiology, associated with Epstein-Barr virus (EBV) and human papillomavirus (HPV) infections. Although Japan is not a high-incidence region, its histological types differ from those in Europe and North America, with WHO type II and III NPCs being predominant and mainly caused by EBV infection. However, studies suggest HPV may also influence NPC development in non-endemic regions. Our department previously studied HPV infection in NPC patients (1996-2015),this study further investigates its role in NPC development.Methods: This study analyzed paraffin-embedded tumor specimens from 26 NPC patients (2015-2022). Viral infection status was assessed using p16 immunohistochemistry (IHC), HPV polymerase chain reaction (PCR), and in situ hybridization for EBV-encoded RNA (EBER-ISH).Results: Among 26 patients, 19 (73%) were EBV-positive and HPV-negative, 2 (8%) were EBV-negative and HPV-positive, and 5 (19%) were negative for both; no co-infections were observed.Conclusion: The findings suggest that HPV infection is rare and likely plays a minimal role in NPC carcinogenesis in non-endemic regions.

P52

SMALL CELL NEUROENDOCRINE CARCINOMA OF THE NASAL CAVITY : REPORT OF ONE CASE

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We reported a 79-year-old male who initially presented with left nasal obstruction and bloody rhinorrhea. Multiple left neck lymphadenopathy was also noted. Biopsy of the nasal tumor was performed. Histopathological diagnosis revealed a small cell neuroendocrine carcinoma of the sinonasal region. He was successfully treated by wide excision of nasal cavity tumor with left radical neck dissection and adjuvant CCRT with five cycles of Cisplatin, 5-fU and Etoposide.

Poster Other

P53

An interesting case of subcutaneous emphysema: A case report

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Objective

Spontaneous subcutaneous emphysema is rare, defined by air accumulation in subcutaneous tissues without evident trauma or iatrogenic cause. This report highlights a unique case.

Methods

We present a 30-year-old Indian male with spontaneous bilateral periorbital and facial subcutaneous emphysema, supplemented by a brief literature review.

Results

The patient is a 30 year old Indian male, with no significant medical history, presented after a spanner struck his left chin. Despite the impact, there were no direct injuries to his eyes, nose, or overlying skin wounds correlating with the emphysema. Examination revealed bilateral periorbital swelling with intact extraocular movements and no diplopia. A 3cm left chin laceration and a superficial left neck abrasion were noted but deemed unrelated to the emphysema.

Nasoendoscopy showed thick yellowish mucopus from the bilateral middle meati. CT imaging confirmed extensive subcutaneous emphysema extending into the orbits, without fractures, lamina papyracea defects, or any depressed skull vault. The patient was treated with intranasal steroids, nasal douche, decongestants, mucolytics, and oral Augmentin for sinusitis, with complete resolution of symptoms.

Facial subcutaneous emphysema commonly arises from iatrogenic injuries, trauma, or barotrauma. Rare cases linked to nose blowing involve orbital fractures. This patient lacked such risk factors or fractures, suggesting an unusual etiology unrelated to his sinusitis.

Conclusion

Spontaneous facial emphysema is rare and typically resolves with conservative management. Airway compromise must be ruled out, and persistent cases require further investigation.

P54

Efficacy of Endoscopic Powered Intracapsular Tonsillectomy and Adenoidectomy for Pediatric Obstructive Sleep Apnea in Japan A Retrospective Case-Control Study

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Objective

Safe surgery for pediatric patients with obstructive sleep apnea (OSA) is important to decrease postoperative events and improve cost-effectiveness. Therefore, this study aimed to compare surgical efficacy and safety between powered intracapsular tonsillectomy and adenoidectomy (PITA) and extracapsular tonsillectomy and adenoidectomy for OSA in children.

Methods

In this retrospective case-control study, patient characteristics and postoperative outcomes were compared between 93 children with OSA who underwent PITA and 81 children who underwent conventional extracapsular tonsillectomy and adenoidectomy at a tertiary hospital. Data analysis using multivariate, multiple regression, and binomial logistic regression analyses was performed.

Results

PITA reduced the odds of postoperative hemorrhage by 8.95% (odds ratio [OR]: 5.69, $p = 0.013$) and of secondary hemorrhage by 8.8% (OR: 10.08, $p = 0.006$), decreased postoperative analgesia use by 0.35% ($p < 0.001$), and increased oral intake on postoperative day 1 by 17% ($p < 0.001$). There were no significant differences in early hemorrhage or regrowth rates between the groups.

Conclusion

PITA could reduce the risk of secondary hemorrhage and improve postoperative quality of life, which are ideal clinical benefits of surgery in pediatric patients with OSA. In most hospitals in Japan, conventional tonsil surgery requires a hospital stay of approximately a week because of the risk of postoperative bleeding and poor feeding. With PITA, early recovery and food intake are possible and make it possible to reduce the hospital stay. PITA should be one of the main choice for OSA surgery in the near future in Japan.

P55

Subacute progressive bilateral impairment of balance and hearing is usually due to some grim disease: A case series

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Background:
Cranial polyneuropathy involving the vestibulocochlear nerve is an uncommon but often sinister presentation in otolaryngology and neurology. The varied aetiologies, overlapping symptomatology, and frequently inconclusive initial investigations make diagnosis challenging. Early identification of vestibulocochlear involvement may prompt more targeted and timely investigations.

Objective:
To describe four cases of progressive cranial polyneuropathy with vestibulocochlear involvement, highlighting diagnostic complexity, the value of bedside head impulse testing (HIT), and the role of multimodal imaging and biopsy in determining underlying aetiology.

Methods:
A retrospective review was conducted of four patients presenting to the Sunshine Coast University Hospital ENT and Neurology services. All underwent bedside HIT and contrast-enhanced MRI, with selected cases receiving FDG-PET, cerebrospinal fluid analysis, and targeted biopsy. Outcomes included final diagnosis, treatment, and clinical course.

Results:
Four distinct aetiologies were identified:
1. Occult metastatic squamous cell carcinoma presenting with trigeminal neuropathy and subsequent bilateral vestibular failure, diagnosed on trigeminal nerve biopsy.
2. T-cell lymphoma initially presumed neurosarcoidosis presenting with bilateral vestibular hypofunction, confirmed by vHIT and audiometry, with diagnosis made on gastric biopsy after PET localisation.
3. Mucormycosis in a diabetic patient with acute sinusitis, multiple cranial neuropathies, and likely bilateral vestibular loss, confirmed by fungal sinus biopsy and CSF panfungal PCR.
4. IgG4-related disease with recurrent facial palsy and later acute unilateral vestibulopathy, diagnosed via PET-guided axillary lymph node biopsy.

All patients demonstrated vestibulocochlear involvement on clinical or vestibular testing. Two patients died within weeks to months of diagnosis; two remain under follow-up with disease control on targeted therapy.

Conclusion:
Cranial polyneuropathy with vestibulocochlear nerve involvement should prompt urgent, persistent investigation, as the underlying pathology is frequently malignant, infectious, or immune-mediated. The bedside HIT is a valuable, rapid screening tool for vestibulocochlear dysfunction, guiding further evaluation. Multimodal imaging, particularly contrast-enhanced MRI for localisation and FDG-PET for extra-cranial biopsy site identification, can facilitate earlier definitive diagnosis. Even with optimal work-up, prognosis remains poor in many cases, underscoring the importance of heightened clinical suspicion and expedited investigation.

P56

Usefulness of the blink facial reflex in the early diagnosis of facial Synkinesis

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Introduction: To evaluate facial synkinesis, a sequela of facial nerve palsy, we use the blink facial reflex (BFR), which simultaneously records muscle contractions of the orbicularis oculi and orbicularis oris muscles.
In this study, we performed BFR on patients without facial synkinesis in approximately four months after the onset of facial palsy and examined the progression of the onset of facial synkinesis.

Subjects: The study population comprised 209 patients without facial synkinesis in approximately 4 months after onset of facial palsy.
Method: For the orbicularis oculi muscle, a probing electrode was attached at the midline of the infraorbital margin, and a reference electrode was attached at the base of the nose. For the orbicularis oris muscle, a probing electrode was attached at the end of the upper lip, and a reference electrode was attached at the lower end of the ala of the nose. The trigeminal nerve was randomly stimulated several times at the supraorbital foramen, and the maximum amplitude of the second response (ipsi-R_2; iR_2) of the orbicularis oculi muscle and the second response (synkinetic potential; S_2) of the orbicularis oris muscle were measured. We previously reported a method for early diagnosis of aberrant regeneration by comparing healthy subjects with patients with facial synkinesis. The S_2/iR_2 ratio was 30.6 μV ± 18.7% in healthy subjects and 107.4 ± 58.7% in patients, which was significantly higher in patients ($P < 0.001$). Therefore, an S_2/iR_2 ratio of 30% or higher was used as the criterion for the presence of aberrant regeneration. In this study, we performed evaluations according to these criteria and compared the appearance of pathological synkinesis 6 months after onset between groups with and without aberrant regeneration.
Results: Before facial synkinesis became apparent, 35.9% (75/209) of patients were diagnosed with aberrant regrowth, while 64.1% (134/209) were diagnosed without aberrant regrowth. Six months after onset, pathological synkinesis developed in 70.7% (53/75) of the group with aberrant regrowth and 32.8% (44/134) of the group without aberrant regrowth, a significant difference ($p<0.001$).
Discussion: BFR performed approximately 4 months after the onset of facial nerve palsy may be useful for the early diagnosis of facial synkinesis.

P57

An Integrated EEG–Respiratory Home Sleep Monitoring System for Sleep Staging and Arousal Detection in Obstructive Sleep Apnea Screening

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Introduction
Obstructive sleep apnea (OSA) is prevalent and linked to severe health risks, yet patients in Taiwan often wait over six months for polysomnography (PSG) due to limited resources. Home sleep testing offers an alternative, but most devices measure only respiratory signals and lack EEG, resulting in underestimated apnea–hypopnea index (AHI) and no objective sleep quality assessment. We developed a home monitoring system integrating EEG and respiratory signals to address this gap.

Materials and Methods
The system combines a self-developed EEG eye mask (Fp1, E2, F3) with ApneaLink Air to record airflow, respiratory effort, and oxygen saturation, enabling synchronized eight-hour EEG–respiratory monitoring. A web-based platform was created to assist manual scoring. Validation was conducted at National Cheng Kung University Hospital with 21 participants (age 25–67 years, AHI 5.8–72.6 events/hour) who underwent simultaneous PSG. Sleep indices (total sleep time [TST], wake after sleep onset [WASO], sleep onset latency [SOL], sleep efficiency [SE]), sleep staging, and arousal index were compared.

Results
Mean differences between our system and PSG were minimal: SOL 0.07 min, WASO 6.26 min, SE –1.72%, TST –6.90 min. Sleep staging showed 90.3% agreement (κ=0.81). Arousal index correlated strongly with PSG (r=0.83). Compared with ApneaLink alone, the system reported significantly higher AHI and HI ($p<0.001$) by detecting EEG-based arousals, leading to more accurate event classification.

Conclusions
This integrated EEG–respiratory home monitoring system demonstrated high agreement with PSG and improved accuracy in AHI estimation through arousal detection. It enables reliable assessment of both respiratory events and sleep quality, offering a practical solution to reduce long wait times for sleep diagnostics.

P58

Epicutaneous sensitization in BALB/c mice induces stronger systemic Th2 inflammation than intranasal sensitization despite comparable nasal eosinophilia

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Introduction: Epicutaneous sensitization (ES) plays a role in the onset of allergic diseases such as atopic dermatitis (AD), bronchial asthma, and food allergies, but its effects on nasal allergic diseases remain unclear.
Aim: The aim of this study was to compare the effects of intranasal challenge following ES with those following intranasal sensitization (NS) on nasal allergic inflammation.
Materials and Methods: Female BALB/c mice were sensitized epicutaneously or intranasally with 25 μg of ovalbumin (OVA) and 2 μg of cholera toxin (CT) six times at weekly intervals. These groups were compared with control groups that received ES with phosphate-buffered saline (PBS) alone, OVA alone, or CT alone. Two weeks after the final sensitization, the mice were challenged intranasally with 500 μg of OVA ten times over a two-week period. Four weeks after the final sensitization, allergic inflammation in the nasal cavity, OVA-specific IgE production, and cytokine profiles were evaluated in the different groups.
Results: Post-challenge, there was no significant difference in the number of eosinophils or the thickness of lateral nasal mucosa between the ES and NS groups. However, the serum level of OVA-specific IgE in the ES group was significantly higher than that in the control and NS groups. Levels of IL-4, IL-5, IL-13, and IL-33 in CD4+ T cells were also significantly higher in the ES group than in the NS group.
Conclusions: These results indicate that intranasal challenge following ES induces comparable eosinophilic inflammation in the nasal cavity, but elicits a stronger systemic Th2-type inflammatory response than that following NS.

P59

Study on the Differential Evaluation of Normal and AdSD Speech Using Speech Analysis - This Study Analyzes Noises Preceding Vowels -

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Purpose AdSD speech is characterized by crackling and tremor, and similar symptoms are also observed in MTD. However, no clear method for distinguishing between the two has been established. The hypothesis of this study is that extracting information from recorded speech for the purpose of differentiation can contribute to improving diagnostic accuracy.

Theoretical Background Patients diagnosed with AdSD often have difficulty pronouncing sounds at the beginning of sentences, which has been reported to lead to speech delays and reduced reading speed. This study focused on this specific aspect by observing the recorded speech waveform (/a me ga/).

Study Methods The subjects were 12 individuals without laryngeal or stress-related speech disorders (5 men, 7 women, ages 17-52 years), 18 individuals diagnosed with MTD (7 men, 11 women, ages 23-71 years), and 26 control subjects. Group 1 consisted of 26 women diagnosed with adductor spasmodic dysphonia (AdSD) (ages 17-54 years). Group 2 consisted of 2 men and 26 women diagnosed with MTD (ages 23-71 years). Group 3 consisted of 2 men and 26 women diagnosed with laryngeal disorders (ages 23-71 years). The manuscripts were read aloud in an untreated state and recorded using a Windows PC (Sony) and Praat acoustic analysis software. Examination of the speech waveforms revealed irregular waveforms that differed from the speech waveforms preceding the spoken text. This sound was designated the "preceding noise," and its duration was measured on the Praat screen.

Results The mean duration of the "preceding noise" was 26.2 msec (+/-6.7) in the normal group, 29.4 msec (+/-12.5) in the MTD group, and 63.1 msec (+/-34.2) in the AdSD group. Each group showed statistically significant differences from the AdSD group. The statistical significance of these differences was determined by one-way analysis of variance (ANOVA), with p values less than 0.002 for the comparison between the normal group and the AdSD group and p values less than 0.02 for the comparison between the MTD group and the AdSD group.

Conclusion Observations on speech waveforms were associated with different glottal closure behaviors depending on the disorder. The "preceding noise" in recorded speech waveforms may be a means of distinguishing between different disorders.

P60

Delayed Post-Thyroidectomy Haemorrhage in a Patient on Rivaroxaban: A Perioperative Anticoagulation Challenge

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Post-thyroidectomy haemorrhage is a well-recognised complication of thyroid operations and can result in life-threatening airway obstruction due to rapid haematoma formation. Minimising the risk of post-operative bleeding involve perioperative management of anticoagulation. This remains a complex clinical challenge that balances minimising the anticoagulant effect in the peri-operative setting whilst not increasing the risk of a thrombotic event. This case describes a 72-year-old female who underwent a total thyroidectomy and central and right lateral neck dissection for biopsy-confirmed metastatic right papillary thyroid cancer with metastatic right level III/IV lymph node. Regular rivaroxaban for chronic thromboembolic pulmonary hypertension was withheld three days prior to her operation.

Intra-operative haemostasis was achieved and both VeraSeal and SURGICEL™ absorbable hemostat were administered to the surgical bed. The patient was commenced on subcutaneous heparin 5000 units twice daily for prophylaxis of venous thromboembolism on post-operative day 1 and continued until recommencement of rivaroxaban on day five. Surgical drain output was monitored daily and removed on day 2 when no drain output was recorded in the preceeding 24 hours. Regular examinations of the neck were unremarkable.

On day 7, the patient became severely with firm neck swelling at the surgical site and desaturations to 80% on room air. Evacuation of a haematoma at the surgical site was performed at the bedside and formalised in an emergent operative setting. Intra-operative findings revealed mild generalised ooze, particularly at the right levels II and III and at thyroid bed. 4-Factor prothrombin complex concentrate and intravenous tranexamic acid was administered and rivaroxaban was withheld for a further two weeks.

P61

Effect of Dupilumab on Sleep Quality in Patients with Eosinophilic Chronic Rhinosinusitis: A Prospective Cohort Study

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Background:
Eosinophilic chronic rhinosinusitis (ECRS) is associated with nasal polyposis, olfactory dysfunction, and significant impairment in quality of life, including sleep disturbance. Although dupilumab has demonstrated efficacy in improving sinonasal symptoms and olfaction, its effects on sleep quality in ECRS patients remain unclear.
Methods:
We conducted a prospective observational study involving 33 adult patients with ECRS who initiated dupilumab therapy. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) at baseline and 6 months. Additional evaluations included olfactory testing with the T&T olfactometer, Lund–Mackay CT scoring, nasal airflow resistance, and endoscopic findings. Paired t-tests and Pearson's correlation analyses were performed.
Results:
The global PSQI score significantly improved from 7.9 ± 3.6 to 4.6 ± 2.4 after 6 months of dupilumab treatment ($p < 0.001$). The proportion of patients with poor sleep quality (PSQI ≥ 6) decreased from 60.6% to 27.3%. Improvement in sleep was positively correlated with improvement in olfactory recognition threshold ($r = 0.361$, $p = 0.039$) and baseline CT score ($r = 0.421$, $p = 0.016$). No significant correlation was found between change in nasal resistance and PSQI scores.
Conclusion:
Dupilumab significantly improves subjective sleep quality in patients with ECRS. The benefits are likely mediated by improvements in olfactory function and reduction of inflammation, rather than by changes in nasal airflow alone. Sleep quality should be considered an important outcome in the comprehensive management of ECRS.

P62

Laryngeal Tuberculosis in Australia: An Unusual Cause of Odynophagia in a Pregnant Female

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Introduction
Tuberculosis (TB), a granulomatous disease caused by *Mycobacterium tuberculosis*, is uncommon in Australia. Active infection most frequently manifests as pulmonary TB, but laryngeal involvement is rare. Most individuals develop latent infection with reactivation typically occurring within five years of initial infection. Immunocompromised patients are amongst those at greater risk of reactivation and an increased risk of laryngeal TB. Despite low local prevalence, TB should be considered in patients from endemic regions or those with persistent cough or unexplained febrile illness. Laryngeal TB typically presents with non-specific symptoms that mimic other head and neck pathologies.

Case Presentation
This case describes a 29-year-old 20-week pregnant female from Australia with one-to-two-year history of odynophagia. She presented with acutely worsening odynophagia, new dysphonia and intermittent dyspnoea over one to two weeks. She denied fevers but reported night sweats and 11kg weight loss over 20 weeks. Her symptomatology was complicated by anorexia nervosa and nicotine, vaping and marijuana use. She denied recent travel; however, originated from Ireland and spent periods of her childhood in Romania, Indonesia and India. Flexible nasoendoscopy revealed laryngeal oedema involving the aryetenoid complex, aryepiglottic folds, left true vocal cord and epiglottis with copious slough and plaque. She was commenced on IV ceftriaxone and oral nystatin for suspected bacterial supraglottitis or fungal laryngitis. Systemic antifungals were avoided due to teratogenic risk. Investigations including tongue base bacterial and fungal cultures, viral respiratory panel, serum Angiotensin Converting Enzyme level and rheumatological panel were negative. Sputum samples were collected; however, cultures were not performed due to oropharyngeal contamination. Computed Tomography of the neck conducted five days later demonstrated supra- and infrahyoid soft tissue oedema with effacement of the piriform sinus. Cavitating lesions were observed in the lung apices with patchy and nodular infiltrates. Panendosocopy was eventually performed and biopsies taken due to persistent diagnostic uncertainty and failure to improve with empiric treatment. Intraoperative findings revealed a lesion focussed on the left pharyngoepiglottic fold and epiglottis and ulcerative changes involving multiple laryngeal subsites. Histopathology demonstrated suppurative and non-necrotising granulomatous inflammation and the presence of acid-fast bacilli. Mycobacterial culture and nucleic acid amplification test confirmed *mycobacterium tuberculosis.* She was diagnosed with laryngeal and pulmonary TB and commenced on antitubercular medications.

Conclusion
This case emphasises the importance of increased clinical awareness in identifying unusual presentations of upper airway conditions and highlights the diagnostic challenges of laryngeal tuberculosis during pregnancy, especially in Australia, where TB remains a rare disease.

P63

Analyzing the drainage and complications experienced by one surgeon during the learning period at endoscopic thyroidectomy

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OBJECTIVE: This study evaluated clinical factors associated with complications in video-assisted neck surgery (VANS), a type of endoscopic thyroid surgery, for thyroid tumors during the learning period.
METHODS: We retrospectively reviewed patients who underwent hemithyroidectomy or enucleation by VANS or open thyroid surgery (OTS) for thyroid tumors by a single surgeon who was in the learning period at a single hospital between October 2019 and August 2024. The clinical parameters evaluated were age, sex, body mass index, operation time, blood loss, maximum tumor diameter, postoperative drainage volume, duration of hospital stay, pathological diagnosis, and postoperative complications.
RESULTS: Twenty-four patients underwent VANS and 26 underwent OTS. The VANS group had a significantly longer operation time and significantly greater drainage volume. The other clinical parameters and complications were not significantly different between the groups.
CONCLUSIONS: This study showed that although drainage volume was greater with VANS compared with OTS during the learning period, there was no difference in the incidence of complications, including seroma formation. This suggests the effectiveness of drainage in VANS, but a conclusion cannot be reached because we did not compare patients with and without drainage. Drainage might be recommended during the learning period. Further studies are needed to determine the necessity of drainage in VANS.

P64

Endoscopic Sodium Tetradecyl Sulfate Injection for Recurrent nasal and tongue bleeding in Hereditary Hemorrhagic Telangiectasia : A case report

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A 65-year-old male patient had experienced repeated episodes of epistaxis and tongue bleeding for more than 10 years. He was genetically diagnosed as Hereditary hemorrhagic telangiectasia (HHT) type II with mutations in ACVRL1. No arteriovenous malformation was found in the brain, lung , or heart under MRI scan. Given his poor response to multiple electrocauterization, endoscopic sodium tetradecyl sulfate (STS) injection was implemented as an alternative minimal invasive sclerotherapy for recurrent epistaxis. Its underlying mechanisms included vessel collapse/damage, thrombosis, vessel wall sclerosis, and eventually resulted in reducing bleeding. An office-based endoscopic injection was performed under local anesthesia. A 3% solution of sodium tetradecyl sulfate (STS) was mixed with air in a 2:8 mL ratio using a T-connector to rapidly produce foam. The foamed mixture was injected into the telangiectatic mucosa of the nasal turbinates and septum until mucosal blanching was observed. A similar procedure was performed in the telangiectasias region of the ventral tongue. The patient received continuous treatment sessions for epistaxis at intervals of 2–3 months for one year and two treatment sessions for tongue bleeding in this period of time. Currently, a bleeding-free interval of more than 5 months has been achieved. Epistaxis severity score(ESS) had dramatically decreased from pretreatment score of 8 to posttreatment score of 1.4-1.9. No major complications including vision loss, reduced visual acuity or cerebrovascular accident happened to our patient. A minor complication of a small nasal septal perforation measuring 1 cm in diameter was observed, without associated nasal crusting, whistling sounds, obstruction, or deformity. Continuous sessions of nasal STS injection was a safe and effective treatment for epistaxis in HHT patients. In Hank et al, some other minor complications were found including eye pain, nasal pain, worsened epistaxis, foul odor, nasal crusting, and compromised nasal breathing, which did not appear during other treatment sessions. Tongue STS injection was also an effective treatment for tongue bleeding and no complication was observed in this patient. But further studies may be needed to confirm its safety.

P65

Is a routine chest x-ray necessary in chronic cough patients?

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Background:
Chronic cough, defined as lasting more than eight weeks, affects about 10% of adults worldwide and contributes significantly to healthcare burden. While often linked to benign causes such as asthma, postnasal drip, or gastroesophageal reflux disease, clinicians remain concerned about serious pathologies including lung cancer, interstitial lung disease, and tuberculosis. Chest radiography (CXR) is recommended by major guidelines as part of initial evaluation; however, its diagnostic yield in patients without red flag symptoms is debated. Although inexpensive and low-dose, CXRs are limited by variable sensitivity, specificity, and the risk of cumulative radiation. This review aimed to assess the diagnostic utility of routine CXR in chronic cough and evaluate whether selective imaging strategies are justified.
Methods:
A systematic review was conducted following PRISMA guidelines. PubMed, EMBASE, and Web of Science were searched in December 2024, yielding 1,509 records. Six studies met inclusion criteria, enrolling adults (≥21 years) with chronic cough. Data on design, populations, diagnostic yield, and accuracy metrics were extracted. Owing to heterogeneity, findings were synthesised narratively without meta-analysis.
Results:
Six studies (633 patients) were included, with 521 undergoing CXR and 361 confirmatory CT scans. Diagnostic performance of CXR was inconsistent: sensitivities ranged from 24.2–67.6%, specificities from 50.0–90.4%, and negative predictive values from 45.9–84.9%. Several patients with normal CXR findings later had CT-detected abnormalities such as pulmonary nodules and early interstitial lung disease. Many CT findings, however, were incidental and unrelated to cough. Final diagnoses frequently involved non-pulmonary conditions, particularly asthma, gastroesophageal reflux disease, rhinosinusitis, and ACE inhibitor use. Abnormal CXRs increased the probability of significant pulmonary disease, but false positives were common.
Discussion:
Evidence indicates CXRs offer limited diagnostic yield in chronic cough, particularly without alarming features. Their main role lies in accessibility and low cost as first-line tests, but they are insufficient as stand-alone diagnostics. CT provides higher sensitivity, yet introduces concerns of cost and radiation exposure. Selective CT use appears most appropriate when symptoms persist despite a normal CXR, or when clinical suspicion or red flag features are present.
Conclusion:
Routine CXR retains value in the initial workup of chronic cough, but its limitations highlight the need for targeted, risk-based approaches. Imaging decisions should be guided by history, examination, and patient risk factors, with CT reserved for higher-risk or refractory cases. Larger prospective studies are needed to refine diagnostic pathways balancing accuracy, safety, and cost.

P66

Comorbid Insomnia and Obstructive Sleep Apnea (COMISA) Is Associated with Increased Cardiovascular Risk: Implications for ENT-led Integrated Sleep Care

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Background:
Obstructive sleep apnea (OSA) is commonly managed by otolaryngologists, yet many patients also experience comorbid insomnia (COMISA), a phenotype associated with increased symptom burden and potentially worse outcomes. Despite its prevalence, COMISA remains under-recognized in ENT clinics. This study investigated whether COMISA patients have higher risks of mortality and cardiovascular events compared to those with OSA alone.
Methods:
We conducted a population-based cohort study using Taiwan's National Health Insurance Research Database (NHIRD). Adults diagnosed with OSA, with or without insomnia, between 2013 and 2017 were identified. After 1:1 propensity score matching (n = 26,107 per group), we compared the incidence of all-cause mortality and major adverse cardiovascular events (MACEs), including myocardial infarction (MI), ischemic stroke, and coronary or peripheral revascularization procedures. Patients were followed until death or December 31, 2022. Multivariable Cox regression was used to estimate adjusted hazard ratios (HRs), additionally controlling for residual differences in diabetes and obesity.
Results:
During a median follow-up of 6.5 years, the COMISA group exhibited significantly higher rates of adverse outcomes. The incidence of all-cause mortality was 5.1% in the COMISA group versus 3.5% in the OSA-alone group. COMISA was independently associated with a 46% increased risk of mortality (HR = 1.46; 95% CI: 1.32–1.61; $p < 0.001$) and a 52% increased risk of MACEs (HR = 1.52; 95% CI: 1.43–1.62; $p < 0.001$). Subtype analysis showed higher risks for both acute myocardial infarction (HR = 1.49) and ischemic stroke (HR = 1.50). These associations remained significant even after adjusting for residual imbalance in diabetes and obesity prevalence following propensity score matching.
Conclusion:
COMISA represents an independent and clinically meaningful cardiovascular risk phenotype. For ENT clinicians, these findings emphasize the importance of routinely screening for insomnia symptoms in patients with OSA. A comprehensive, integrated care approach—beyond airway-focused treatments—may be essential to improve long-term outcomes in this high-risk group.

P67

Effectiveness of preoperative drug-induced sleep endoscopy (DISE) for assessment of pediatric obstructive sleep apnea

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【Background】Drug-induced sleep endoscopy (DISE) is a method of evaluating the sites of obstruction in the upper airway during sleep. Some recent studies have reported that DISE before AT would be useful to predict the post-AT outcome, but the prospective studies are not sufficient. In this study, we evaluated preoperative DISE effectiveness by comparing with awake endoscopy (AE).
【Subjects】This was a prospective study of 26 consecutive patients who underwent AT for OSA between February 1, 2024 and November 1, 2024 at Tokyo Metropolitan Ohtsuka Hospital. The children aged 3 to 15 years with a mean age 6.3 years was included. Children with underlying diseases which could affect OSA, such as Down syndrome and craniofacial anomalies, were excluded.
【Methods】DISE was performed during induction of general anesthesia using propofol and fentanyl. Both AE and DISE endoscopies were scored according to Chan scale.

1) The Mann-Whitney U test was used to compare the AE and DISE endoscopic findings of each site in the upper airway.
2) Student's t-test was performed to compare the 3% Oxygen Desaturation Index (3%ODI) between Group 1, with less than 2 sites of complete obstruction, and Group 2, with two or more sites of complete obstruction.

【Results】1) The degree of obstruction with DISE at the velopharynx and tonsils was greater than that with AE (P=.0.0085, P=.00003). 2) DISE results show that the 3%ODI in Group 2 was significantly worse than Group 1 (P=0.03), whereas AE results showed no significance.
【Discussion】In this study, upper airway obstruction at tonsils and velopharynx worsened under sleep compared with that in awake. Implementing DISE to accurately evaluate airway conditions at tonsils and velopharynx may lead to better interpretation of the involvement of those sites in association with OSA.

P68

Evaluation of the Efficacy of Oral Appliances for Obstructive Sleep Apnea in the Elderly

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[Objective] The prevalence of obstructive sleep apnea (OSA) in the elderly is high, ranging from 30 to 80%. However, it is often problematic that many individuals lack subjective symptoms such as snoring, apnea, or daytime sleepiness, leaving a significant proportion untreated. Beyond symptoms specific to the elderly, such as nocturia, dementia, depression, and dry mouth (xerostomia), OSA is also associated with the incidence of cerebrovascular and cardiovascular diseases and leads to reduced quality of life. Therefore, testing for early diagnosis and treatment are considered essential.
[Methods] Among 369 patients referred from medical departments to our department for OSA treatment with oral appliances (OA) between January 2015 and December 2023, we evaluated the efficacy of OA therapy in 34 elderly patients aged 65 years or older (19 men, 15 women; mean age 71.0 ± 4.8 years). The efficacy of OA treatment was evaluated based on the apnea-hypopnea index (AHI)/respiratory event index (REI): a reduction rate of ≥50% or a value ≤10 was defined as marked improvement, a reduction rate of 0–50% as effective, and no reduction as ineffective. Statistical analysis was performed using EZR, a GUI for R.
[Results and Discussion] Regarding AHI/REI improvement with OA therapy, 25 patients showed marked improvement, 3 showed improvement, and 5 showed no improvement (overall improvement rate: 85.3%, p=0.0431), demonstrating a high OSA improvement effect with OA in the elderly. Among patients with severe OSA (AHI/REI ≥ 30), the improvement rate was 72.1%. The Epworth Sleepiness Scale (ESS) also showed a reduction rate of 61.1% (p<0.001), and for those with ESS ≥ 11 indicating strong daytime sleepiness, the improvement rate was 54.5% (p<0.001). While CPAP is considered the first-line treatment for OSA, the issue of low adherence associated with continuous positive airway pressure (CPAP) therapy persists in the elderly. Advantages of OA therapy include the simplicity of the device itself and its handling, along with high adherence rates. However, disadvantages include inferior improvement effects compared to CPAP, the lack of regular management constraints under the health insurance system, and dependence on the skill level of the fabricating dentist. Alongside raising awareness of the need for sleep apnea treatment among the large number of untreated individuals, there is a requirement for the development of devices that can be monitored similarly to CPAP and for the implementation of regular management for oral appliances.

P69

Comparison of Bacteriologies between Geriatric Rhinosinusitis with and without Nasal Polyps and Adult Rhinosinsitis with and without Nasal Polyps

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Objectives: The elderly population is increasing around the world. Chronic rhinosinusitis (CRS) has been reported to be the sixth most common disease affecting the elderly population. In this study, we attempted to compare the bacteriology of CRS with and without nasal polyps between geriatric and adult patients.
Methods: This retrospective cross-sectional study included 751 patients with CRS who underwent bilateral primary functional endoscopic sinus surgery. Before surgery, swab samples were collected from the middle meatus for bacterial cultures using cotton-tipped sticks. Subjects were divided into geriatric (65 and more years, n=68) and adult (20 to 64 years, n=683) groups. The results of the bacteria culture were analyzed according to the age group and the presence of nasal polyps.
Results: The rate of bacterial culture was higher in geriatric patients (55.9%) than in adults (44.9%), but the difference was not significant (p=0.11). However, in patients without nasal polyps, geriatric patients showed a higher bacterial culture rate (57.6%) than adults (29.6%). The difference was statistically significant (p=0.002).
Conclusions: Geriatric patients with CRS exhibited higher bacterial culture rates, particularly on the non-polyp side. These findings suggest a possible age-related susceptibility to microbial colonization, underscoring the need for age-specific infection management strategies.

P70

Development and In Vivo Evaluation of a Novel Bioabsorbable Polylactic Acid Middle Ear Ventilation Tube

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Background: Otitis media with effusion (OME) is a widespread condition causing hearing impairment, particularly in pediatric populations. Existing non-absorbable middle ear ventilation tubes frequently necessitate secondary surgical removal. Bioabsorbable polylactic acid (PLA) offers a promising alternative due to its inherent biocompatibility and tunable degradation characteristics. This study aimed to design, fabricate, and comprehensively evaluate a novel PLA middle ear ventilation tube.
Methods: Bioabsorbable PLA tubes were designed and fabricated based on commercial models. In vitro biocompatibility was assessed according to ISO 10993 guidelines. In vivo evaluations were performed in a guinea pig model, including otoscopic examinations, auditory brainstem response (ABR) measurements, micro-computed tomography (micro-CT) imaging, and histological analyses.
Results: The PLA tubes were successfully designed and fabricated, exhibiting dimensions comparable to commercially available products. In vitro testing confirmed their biocompatibility. In vivo observations demonstrated that the PLA segments remained stable, with no significant inflammation detected. ABR measurements revealed no adverse impact on hearing function. Micro-CT imaging confirmed tube integrity and displayed initial signs of degradation over a 9-month period. Histological analyses indicated a favorable tissue response with minimal foreign body reaction.
Conclusion: The developed PLA middle ear ventilation tube represents a highly promising alternative to conventional non-absorbable tubes. It demonstrates excellent biocompatibility, preserves auditory function, and exhibits a controlled degradation profile. This preclinical study provides strong support for further investigation and subsequent clinical trials to validate its safety and efficacy in human patients.

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