International Symposium

IS-1

Controversies in management of squamous esophageal cancer

C S Pramesh
Thoracic Surgery, Department of Surgical Oncology,
Tata Memorial Centre, India

In Asia, squamous cancer is still the major problem involving almost 80% of patients with esophageal cancer. Several controversies exist related to the management of esophageal squamous cell carcinoma (ESCC). These controversies include (1) role of screening in ESCC, (2) whether definitive chemoradiation is an acceptable alternative to surgery, (3) whether neoadjuvant chemotherapy (NACT) or chemoradiation (NACTRT) followed by surgery should be the optimum treatment strategy, (4) role of radical lymphadenectomy in operable esophageal cancer and (5) role of adjuvant therapy. The role of screening in ESCC has not been established. Lack of a non-interventional, acceptable screening tool sensitive enough to detect early lesions is an obstacle. We are currently conducting a large randomized trial to evaluate whether screening with a double-contrast barium swallow can reduce mortality related to esophageal cancer in rural India.

Encouraged by the high rates of complete responses to chemoradiation, many authors in the western world consider definitive chemoradiation as an acceptable alternative to surgery; however, our view is that this is premature, lacks evidence to support it and should not be considered acceptable unless randomized trials support this conclusion. Efforts to decrease perioperative morbidity and mortality could make this question irrelevant. Both NACT and NACTRT improve survival compared to surgery alone in ESCC. However, in the absence of quality trials directly comparing these two strategies, strong recommendations cannot be made for one over the other. While NACTRT has better response rates than NACT, it is also associated with higher perioperative morbidity and mortality. We are currently conducting a phase II randomized trial comparing NACT with NACTRT in ESCC.

The extent of lymphadenectomy is a controversial issue in ESCC. While the western world predominantly believes in a standard two field or even a transhiatal esophagectomy, Asian surgeons are more inclined to perform a radical three-field lymphadenectomy. While the morbidity of more radical lymph node dissection (LND) is definitely higher than less radical lymphadenectomy, it also has the potential to improve survival. We are currently conducting a large randomized trial comparing standard two-field with radical three-field LND. The role of adjuvant therapy in ESCC has never been established, with NACT being proven to be superior to postoperative chemotherapy and no benefit seen with adjuvant radiotherapy. We are currently initiating a large multicentric randomized trial evaluating the role of adjuvant Aspirin in esophageal cancer.

Future research needs to be coordinated between countries where ESCC is a major problem to conclusively settle these controversies in management of ESCC. This is an important call for researchers in Asia to create a collaborative network with interest in ESCC research and management including proposing a different staging system, treatment protocols and surgical treatment distinct from adenocarcinomas.

International Symposium

IS-2

Surgery in the era of multimodality treatment for esophageal cancer

Simon Law
Division of Esophageal and Upper Gastrointestinal Surgery,
The University of Hong Kong

Esophagectomy remains the mainstay of treatment for patients with cancer of the esophagus. Multimodality treatment has also gained popularity in the last two decades, and neoadjuvant chemotherapy (CT) or chemoradiation (CRT) is standard management strategies in many centers in the world. Both CT and CRT have been shown to be effective in downstaging tumor, and the CROSS trial has demonstrated survival advantage compared to surgical resection.

The key questions are as follows. (1) Does neoadjuvant treatment make esophagectomy more difficult? In theory, downstaging would make tumor resection easier if a bulky tumor is made smaller and therefore more easily manipulated, especially when VATS esophagectomy is performed. On the other hand, the fibrosis produced by radiation (less so with chemotherapy alone) may make dissection more hazardous and the tissue planes are often obliterated, the mediastinal pleura and tissue surrounding the tumor is also thickened. To perform extended lymphadenectomy, in particular around both recurrent laryngeal nerve, is more problematic, and increased vocal cord palsy rates may be expected. (2) Does neoadjuvant therapies increase postoperative morbidity and mortality rates? This issue is controversial and the literature is not conclusive. Intuitively this may be true ; the patients' general physical condition may be weakened by prolonged CRT, they may be immunocompromised, the lengthened operation (with expected difficulties mentioned above) and higher recurrent laryngeal nerve palsy rates may predispose to more pulmonary complications in addition to radiation pneumonitis. Certainly many have reported higher complication rates when patients undergo salvage esophagectomy post definitive CRT. The lower dose of RT given in the neoadjuvant setting may be less damaging. (3) Can the extent of lymphadenectomy be modified after neoadjuvant therapy? After neoadjuvant therapy, restaging often will show significant downstaging, previously enlarged lymph nodes may no longer be visible or when PET scans are performed, no longer FDG-avid. Given the increased difficulty, can we forgo extended lymphadenectomy. Unfortunately there is in adequate data in the literature to support this hypothesis. More research will have to be done.

The two pillars of modern treatment for esophageal cancer are chemo (radiotherapy) and surgical resection. How one should integrate the two requires careful individualization. With effective CRT, and performing safe surgery with adequate lymph node dissection will lead to the best outcome.

International Symposium

IS-3

Minimally invasive esophagectomy in the National Taiwan University Hospital and Taiwan

Jang-Ming Lee
Division of Thoracic Surgery, Department of Surgery, National Taiwan Unisersity Hospital, Taipei, Taiwan

Minimally invasive esophagectomy（MIE）has evolved an important surgical option in treating esophageal cancer worldwide. This novel surgical approach has been started since 2002 in Taiwan. It was started with VATS esophagectomy in the very beginning, followed by hand-assisted laparoscopic gastric mobilization and esophageal reconstruction. Now the abdominal procedure has been replaced by the pure laparoscopic procedure with or without minimal incision for gastric tube shaping. The MIE is therefore performed with combined thoracoscopic and laparoscopic approaches, termed as total MIE. Up to now, there are totally 647 patients received total MIE in the four major medical centers in Taiwan, including esophagogastrostomy in the chest（Ivor Lewis）and in the neck（McKeown）. 452（69.9%）of the patients neoadjuvant chemoradiation. The rate of anastomotic leakage was 6.6%（43/647）and pneumonia 2.8%（18/647）. From the experience of the National Taiwan University Hospital, three field lymph node dissection was performed in total MIE irrespective of Ivor Lewis or McKeown approaches. The major surgical complications and mid-to-long term survival results is essential the same between these two approaches. However, the rate of vocal cord palsy and duration of postoperative ventilator support can be significantly reduced with the Ivor Lewis approaches in MIE as compared to that of McKeown MIE. With the advancement of minimally invasive surgery, various novel approaches including robotic-assisted procedures and single-port approaches has been adopted. In conclusion, total MIE has gaining more popularity for treating esophageal cancer in Taiwan. Their role, however, is subjected to be evaluated in oncological surgery.

International Symposium

IS-4

Esophageal cancer surgery in Korea : In the view of minimally invasive surgery together with the SMC experience

Young Mog Shim
Samsung Medical Center, Korea

Esophageal cancer is among the 10 most frequent cancers in the world. The annual incidence reported in Korea is 4.6 per 100,000, which account for 1% of all malignancy. Esophageal cancer remains one of the most lethal malignancies, which is known to 9th common cause of death in all malignancy in Korea. Once a diagnosis established, the prognosis of esophageal cancer is known to be poor even after multimodal treatment including surgery, chemotherapy and radiotherapy. Since management of esophageal cancer is stage dependent, for early esophageal cancer, surgical treatment showed excellent outcomes. However, high incidence of postoperative morbidity and mortality is troublesome.

Between 2012 and 2013, 1751 esophageal cancer surgery were performed by 82 institutions in Korea. Overall mortality rate was 4.98%. During the same period, Samsung Medical Center performed 404 esophagectomies that is 24% of all cases. Overall mortality rate was less than 1% in SMC cases.

The success rate for treatment of esophageal cancer with surgery alone is related to the disease stage. For most patients with localized esophageal cancer, surgical resection affords the best chance for cure. In Korea, screening esophagogastroduodenoscopy is recommended for general population over 40 years old. Recently, early esophageal cancer is getting increased. Between 2008 and 2011, 664 patients underwent curative esophageal resection for esophageal cancer without neoadjuvant treatment in Samsung Medical Center. Of those, 70 percentages of patients were pathologic stage I or stage II. The 5-year survival rate of pathologic stage I and II was 89% and 83%, respectively. Even for patients with N1 diseases, the 5-year overall survival rate was more than 76%. However in the patients with N2 or N3 disease, the overall survival rate and disease free survival rate is apparently low, other treatment strategy such as induction treatment following surgery would be required.

Open surgical procedures remain the standard of care for esophageal resections. However, the technical improvements have been required owing to the morbidity and mortality associated with open procedures. Recently, many thoracic surgeons prefer minimally invasive esophagectomy in Korea, and they said there is no compromising oncologic outcomes. From Jan 2009 to March 2015, a total of 151 minimally invasive esophagectomy were performed in Samsung Medical Center. Since the end of 2012, robot assisted esophagectomy was introduced, the number of minimally invasive esophagectomy has increased rapidly.

Between January 2013 and December 2014, total of 106 patients underwent minimally invasive esophagectomy for esophageal cancer. There were 97 males and 9 female patients with mean age of 62 years (range : 40～78). Except two patients, all patients underwent surgery without induction treatment. Of these, 74 patients underwent robot-assisted transthoracic esophagectomy and remaining 32 patients underwent VATS esophagectomy. All patients underwent abdominal and mediastinal LN dissection, 13 patients (12.3%) also underwent cervical LN dissection. Mean number of dissected LN was 34.9. There was no significant difference in number of dissected LN between robotic esophagectomy and VATS esophagectomy (33.6 vs 38.1, $p = 0.110$). Postoperative complications frequently observed were vocal cord palsy ($n = 28$), atrial fibrillation ($n = 7$), anastomotic leak ($n = 6$). Incidence rates of laryngeal nerve palsy was somewhat higher in comparison with that of in open esophagectomy, however most vocal cord palsy were temporary, incidence of stationary vocal cord palsy was not different between MIE and open esophagectomy. We found minimally invasive esophagectomy feasible in cases of esophageal cancer. The procedure allowed precise dissection with lymphadenectomy in mediastinum with acceptable morbidity.

International Symposium

IS-5

Efficacy of lymph node dissection for each area based on esophageal tumor location

Yuji Tachimori
Division of Esophageal Surgery, National Cancer Center Hospital, Japan

Background : During the past two decades, patients with adenocarcinoma of the distal esophagus or gastroesophageal junction have increased in Western countries. The present UICC/AJCC staging system was based on data of the Worldwide Esophageal Cancer Collaboration. In this series, tumor location was lower esophagus in two thirds. The extent of lymph node dissection in esophageal cancer surgery is estimated by the number of resected regional lymph nodes, irrespective of the area of dissection. However, in Asian patients, squamous cell carcinoma remains the predominant type of esophageal cancer and more than a half tumors locate mid and upper esophagus. The pattern of lymph node metastases reflects the location of the primary tumor. Many doctors accept considering the extent of nodal dissection should be modified by the tumor location.

Method : Efficacy of nodal dissection area by the tumor location was evaluated based on a large nationwide registry of esophageal cancer maintained by the Japan Esophageal Society. The Efficacy Index (EI) was calculated by multiplying the incidence of metastases to a station and the 5-year survival rate of patients with metastases to that station, by tumor location.

Results : In patients with upper tumors, the EIs of recurrent nerve nodes, cervical paraesophageal nodes and supraclavicular nodes were highest. In patients with middle tumors, the EIs of recurrent nerve nodes, cardiac nodes and lesser curvature nodes were highest, and the EIs of supraclavicular nodes and cervical paraesophageal nodes were not negligible. In patients with lower tumors, the EIs of cardiac nodes, lesser curvature nodes and left gastric artery nodes were highest, and the EIs of recurrent nerve nodes were also high.

Conclusion : The EIs of certain node stations were different by location of the primary tumor. Node stations for dissection should be modified by the location of the primary tumor. For upper and middle esophageal tumors, the three-field approach is recommended. Dissection of the upper mediastinum is recommended for patients with lower esophageal tumors.