

4-MBT6

Topics and future of the management of chronic instability of the ankle

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Introduction: Lateral ankle sprain is a very common injury. In the majority of cases it is successfully treated conservatively but approximately 10% of patients will go on to develop chronic lateral ankle instability (CLAI). Open anatomical reconstruction of the lateral ankle ligaments has become an established technique, but there are few reports describing an arthroscopic approach for this surgery. We have previously reported our method for an All-Arthroscopic technique for anatomical reconstruction of the anterior talofibular ligament (ATFL) and the calcaneofibular ligament (CFL) by gracilis graft. The purpose of this study is to report the clinical results of this technique with a minimum of 2 years follow up. The key points of our technique are as follows: 1. Identify the anatomical attachments of the ATFL and CFL to create the fibular, talar and calcaneal bone tunnels 2. Introduce the tendon graft to each bone tunnel. 3. Fixation of the tendon graft in the fibular bone tunnel with an endobutton and interference screws for the talar and calcaneal tunnels. The results were assessed by the Karlsson-Peterson Ankle Score (Karlsson) and American Orthopedics Foot, Ankle Society Ankle Hindfoot Scale (AOFAS) and Ankle Activity Score. Of the patients, (67.6 %) played competitive or recreational sports before the injury (Ankle Activity Score: 5.5 ± 3.0). At a mean follow-up of 32.5 ± 5.1 months (range, 24-43 months), the Karlsson and AOFAS score improved significantly from 47.4 ± 11.5 and 57.8 ± 12.0 preoperatively to 88.3 ± 9.9 and 94.7 ± 6.3 points postoperatively ($P < 0.01$). After operation all patients recovered their pre-injury sports activity level except 1 patient (due to ankle pain -Ankle Activity Score 5.2 ± 2.9) (N.S.). Our All-Arthroscopic technique for anatomic reconstruction for CLAI leads to good clinical results after 2 years. Further studies need to confirm the indications and superiority of this procedure.

4-MBT7

Arthroscopy Assisted Lateral Ankle Ligament Reconstruction Using a Newly Developed Drill Guide System

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To minimize the surgical invasion in lateral ankle ligament reconstruction, arthroscopy must be used as an effective device. However, the articular space of the ankle is narrow and the sites for tunnel construction are just beneath the cutaneous tissue. Maintaining a sufficient field of view throughout the surgical process remains a challenge. We developed a new drill guide system to provide assistance in constructing accurate bone tunnels at the origin and insertion sites of the ATFL and CFL.

Methods: A 2.7mm arthroscope was used under an ankle distraction system. Under arthroscopic observation from the central portal of the ankle, the distal tip of the articular surface of the distal fibula was identified and a short 2.4mm pin was inserted from the lower part of the ATFL footprint to the posterior aspect of lateral malleolus. Another pin was inserted into the talus from the center of the footprint of the ATFL insertion. The pin for the CFL insertion was inserted from the anterolateral portal to the site beneath the peroneal tendons, observing from the sinus tarsi portal. After confirmation via X-ray, a drill guide in 6mm overlapped each pin to make an accurate bone tunnel in the LM and two sockets that were 10 mm in depth. An additional pin was inserted from the posterior margin of the LM bone tunnel entrance in the antero-proximal direction and enlarged using a 5.5 mm drill to create the bone tunnel for CFL reconstruction. Therefore, the entrance of the bone tunnel expanded distally to avoid an acute bending of the CFL substitute. Two double-stranded Gracilis tendon substitutes were made. A ω -loop anchor was inserted into the socket and connected at one end of the substitute. Another end was connected to polyester mesh, inserted into the LM, and fastened with two staples on the LM. This guide system was useful for ligament reconstruction procedures.