

Endoscopic Ankle Lateral Ligament Graft Anatomic Reconstruction



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KEYWORDS

- Ankle instability • Anterior talofibular ligament • Calcaneofibular ligament
- Endoscopic reconstruction • Tendoscopy • Gracilis tendon • Autograft • Allograft

KEY POINTS

- Chronic ankle instability is a common complication after an ankle sprain.
- Recently, there has been a move towards endoscopic treatment of lateral ligament instability.
- The endoscopic approach offers the possibility of assessing and addressing associated intra-articular lesions.
- A good knowledge of the local anatomy is indispensable; the anterior tibiofibular ligament, the lateral gutter, the peroneal tendons, and the subtalar joint are used as anatomic landmarks for endoscopic orientation.
- The technique is technically demanding and cadaveric training is needed. If the surgeon lacks the necessary technical skills and experience in endoscopic ankle surgery, open reconstruction is recommended.

INTRODUCTION

Ankle sprains are the most common injuries sustained during sports activities. The most commonly injured ligaments of the ankle are the anterior talofibular ligament (ATFL) and the calcaneofibular ligament (CFL). Most ankle sprains recover fully with

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nonsurgical treatment, but up to 20% of patients develop chronic ankle instability.^{1–4} If conservative treatment fails, surgical treatment should be considered. The surgical techniques can be divided into anatomic repair, nonanatomic reconstruction, and anatomic reconstruction.

Anatomic repairs are still considered the gold standard for treatment of symptomatic chronic instability.^{5–8} The Broström procedure is a true repair of the lateral ligaments and is often associated with the Gould procedure, which uses the extensor retinaculum to augment the repair.^{9,10}

Recently, there has been a move towards endoscopically assisted or full endoscopic repair of the lateral ligaments.^{4,5,7,11–13} The endoscopic approach offers the possibility of assessing and addressing associated intra-articular lesions.^{14–16}

Nonanatomic procedures have fallen out of favor, because they can overconstrain the talocrural and subtalar joints, resulting in limited range of motion and the long-term development of degenerative arthritis.^{8,17,18}

However, an anatomic repair is not always the best option. Several contraindications to anatomic repair have been described in **Box 1**.^{5,6,8,14,19,20} A reconstruction should be considered in these cases.

Several studies have published good results using a hamstring autograft or allograft to perform the reconstruction.^{2,3,21–24} The peroneal tendons should no longer be used as a graft, as they are important dynamic stabilizers of the hindfoot.^{21,25}

This article describes an endoscopic technique, using a step-by-step approach to reconstruct the ATFL and CFL with a gracilis graft.^{18,26–28}

SURGICAL TECHNIQUE

Preoperative Planning

The primary indication for operative intervention is the failure of nonsurgical management. Physical examination is essential to confirm the diagnosis of ankle instability. The anterior drawer test and talar tilt test should be performed, and any varus malalignment should be noted.

Plain standing radiographs should be obtained. A comparative Saltzman view (or Méary view) is useful to assess hindfoot alignment. In case of a hindfoot varus, a calcaneal osteotomy should be considered. If a calcaneal osteotomy is associated with a ligament reconstruction, the osteotomy should be performed before the ligament reconstruction to avoid damage to the calcaneal tunnel. Stress radiographs may be helpful, but there are still some concerns as to their accuracy.

MRI scan can be useful in diagnosing associated injuries. MRI has high specificity and positive predictive value in diagnosing lesions of the ATFL, CFL, and osteochondral lesions; however, its sensitivity is low.^{29,30}

Box 1

Indications for reconstruction

- Failed anatomic repair
- High body mass index
- Incompetent ATFL, as seen during arthroscopic examination
- Congenital ligament hyperlaxity
- Heavy labor occupation or sports requirements
- An ossicle with size ≥ 1 cm

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