

CURRENT PROBLEM CASE

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Dislocation of the proximal tibiofibular joint**A new method for fixation**

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Abstract We introduce a new method for fixation of a rare, isolated, proximal tibiofibular dislocation. One third of the biceps femoris muscle tendon was used for fixation of the dislocated proximal fibular head. The fixation was achieved by using a soft threaded interference ACL screw.

Introduction

Dislocation of the proximal tibiofibular joint is a rare injury that may be isolated or associated with combined major knee trauma. Isolated dislocation of the proximal tibiofibular joint has been described after horseback riding, parachute jumping and water-skiing accidents. There are four types of dislocation: subluxation, anterolateral, posteromedial and superior [6, 7, 9]. The diagnosis of dislocation of the proximal tibiofibular joint is based on clinical examination, plain anteroposterior and lateral radiographs, and in suspected cases, axial computed tomography (CT)-scanning is the investigation of choice [5]. Initial treatment of proximal tibiofibular joint dislocation is closed reduction in all cases, and surgery is rarely needed. Occasionally, surgical treatment is indicated when the reduction is not maintained. The surgical options are: reconstructing the joint by using an iliotibial band fascial graft, internal fixation, arthrodesis and proximal resection of the fibular head [4, 8].

Case report

We introduce a new method for fixation of proximal tibiofibular joint dislocation. The one third of the biceps femoris muscle tendon was harvested, leaving the distal end intact in the proximal fibular head. The tendon graft was constructed by doubling the

tendon over a #5 non-absorbable suture, which subsequently acts as a lead pulling suture. The doubled graft should be 5–6 mm in diameter and 4 cm in length. The beath pin is drilled through the tibia perpendicular to the tibial axis just in front of the proximal head of the fibula from the lateral to the medial side. A 4.5-mm cannulated drill is passed along the pin, and a 4-cm-long preliminary drill canal is made. After this, the router is passed along this pin, and a 5–6-mm drill hole corresponding to the graft is made.

Fig. 1 A picture of the treatment method. A screw is driven over the guidewire into the drilled tibial tunnel fixing the graft

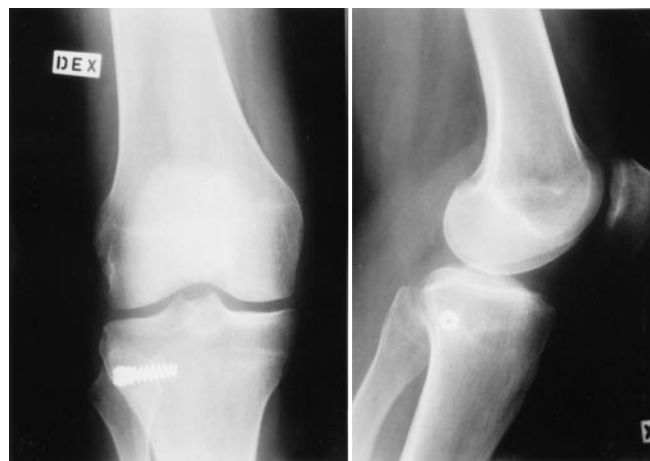
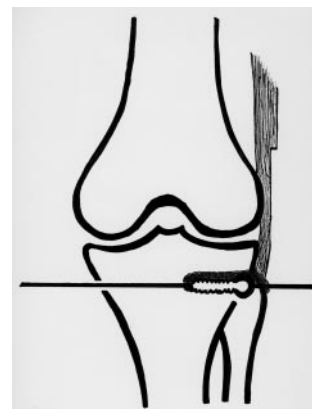


Fig. 2 Postoperative X-ray 6 months after the operation. The proximal head of the fibula is in its normal anatomical position

The router is removed, and the lead suture from the graft construct pulled through the tibia. The second guide wire is introduced through the portal, and the tip placed at the tibial tunnel entrance. A soft threaded interference ACL screw and driver are run over the guidewire into the tibia. Maintaining traction on the graft, the screw was advanced until the head of the screw was completely buried within the tunnel by tightly fixing the graft into the tunnel (Fig. 1).

The postoperative treatment includes partial weight-bearing for 6 weeks with range of motion from 0 to 90 deg in the knee joint. After 6 weeks, full weight-bearing is allowed with progressive muscle training.

We used this technique on an isolated proximal tibiofibular joint dislocation of a female student without problems after 8 months of conservative treatment. At follow-ups she has not described any problems with her previously continually painful dislocating proximal tibiofibular joint after this operative treatment (Fig. 2).

Discussion

The rare proximal tibiofibular joint dislocation can be accompanied by ligament injuries in knee joint and tibial shaft and ankle fractures [1–3]. The initial treatment of the proximal tibiofibular joint dislocation is closed reduction, and surgery is rarely needed. However, continuously troublesome dislocation of this joint will develop in some patients. In the literature, rather radical treatment methods have been published [4, 9]. Our operative method is simple and rapid and maintains the anatomical reduction of the proximal tibiofibular joint.

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