KEY PROCEDURES

MEDIAL PATELLOFEMORAL LIGAMENT RECONSTRUCTION IN SKELETALLY IMMATURE PATIENTS

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Investigation performed at the Hospital for Special Surgery, New York, NY

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Abstract

Patellofemoral instability is a common problem affecting children and adolescents, with recurrent instability often requiring surgical intervention. Medial patellofemoral ligament (MPFL) reconstruction has become a mainstay for the treatment of patellofemoral instability because of the biomechanical importance of the MPFL against lateral dislocation as well as the high frequency of MPFL injury following traumatic patellar dislocation. The concern in managing skeletally immature patients is the potential for injury to the distal femoral physis. Here, we highlight 2 techniques for MPFL reconstruction. The first technique utilizes a hamstring autograft. The steps include: Step 1: Harvest the semitendinosus graft from a 2-cm posteromedial incision with use of an open tendon harvester proximally and a closed tendon harvester distally. Step 2: Prepare the graft for double-bundle reconstruction, allowing for approximately 50 to 60 mm for the reconstructed MPFL and 15 to 20 mm for graft placement within the patella and femoral sockets. Step 3: Use a guidewire and reamer to create 2 patellar sockets approximately 15 mm long each. Step 4: Use a guidewire under fluoroscopy to position and create a femoral socket distal to the distal femoral physis approximately 15 mm long. Step 5: Fix the graft on the femur with use of a tenodesis screw, pass the graft through the soft-tissue space between the fascia and synovium to the superior half of the patella, then dock the free ends of the graft onto the 2 patellar sockets with “PEEK (polyetheretherketone) SwiveLocks (Arthrex)” while the knee is in 30° of flexion. We also review a second technique of docking the hamstring graft onto the adductor tubercle and suturing it proximally to the deep distal medial aspect of the quadriceps tendon. Although only a limited number of studies have reported the outcomes of MPFL reconstruction in skeletally immature patients, such studies have demonstrated a high return to preoperative level of sports activity and a reduced prevalence of recurrent patellar instability.

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