

Anterior Cruciate Ligament Reconstruction Using an Endoscopic Technique With Patellar Tendon Autograft

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Summary: The single-incision endoscopic-guided ACL reconstruction using patellar tendon autograft is advocated for its high ultimate strength, bone to bone healing, and interference fixation. Optimal outcomes are obtained when attention is paid to crucial technical aspects of the procedure. In addition, attempts should be made to reestablish full range of motion in the affected knee prior to surgery. The technically-demanding graft harvest portion of the procedure focuses on obtaining a graft with appropriately-sized bone plugs and adequate tendon girth while minimizing trauma to the knee. Notch preparation and tunnel placement allow for the graft to be appropriately oriented without impinging in the notch in extension. Metal interference screws are used for fixation both at the femur and the tibia. An aggressive physical therapy program is initiated postoperatively. **Key Words:** Patellar tendon—Single-incision—Endoscopic—Technique.

Anterior cruciate ligament (ACL) reconstruction is one of the most common surgical procedures performed by orthopaedic surgeons. The number of ACL tears continues to rise because of the growing population and the increased involvement in sport at many levels, especially among young women and the middle-aged. There are over 100,000 ACL reconstructions performed annually in the United States using a variety of techniques according to the American Academy of Orthopaedic Surgery.

Most orthopaedists agree that a patient with an ACL tear who wishes to return to activities that involve cutting or pivoting would benefit from reconstruction. However, there is controversy as to the best type of graft, fixation, and surgical technique that should be used. Regardless of the technique used, the primary goal of ACL reconstruction surgery is to provide a pain-free knee that will be functionally stable. The bone-patellar tendon-bone (BPTB) autograft is the most widely chosen graft

source and has the longest and most reviewed track-record.^{1-4,6,7,9,11,18,26,29,31,33,36} Advocates emphasize its high ultimate strength, bone to bone healing, and interference fixation. This article describes our endoscopic single incision technique using a central third ipsilateral BPTB autograft. Surgical pearls and potential pitfalls are discussed.

SURGICAL TIMING

When assessing a patient with an ACL deficient knee, contraindications to surgical fixation using BPTB autograft must be considered. Inappropriate candidates include those with severe degenerative changes in the knee, patients unable or unwilling to comply with rigorous postoperative rehabilitation, skeletally immature patients, and people with inadequate or poor quality patella tendon. Those that may not tolerate kneeling discomfort or numbness on the anterior knee should be considered for an alternate graft choice.

Surgical timing is controversial, but much of the literature will support delaying surgical reconstruction until the patient has achieved near full range of motion, strength, and control of the knee with little or no effusion.^{23,30,34} The risk of arthrofibrosis is higher in those patients who undergo early reconstruction while the knee

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