

KD-III-M and KD-IV Surgery: Superficial Medial Collateral Ligament Reconstruction with Suture Anchors to Reduce Collision Risk in Multi-Ligament Knee Injury

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Abstract

Due to the constrained working space during multi-ligament knee injury surgery, Medial Collateral Ligament (MCL) reconstruction might be difficult. The guiding pin, pulling sutures, reamer, tunnel, implant, and graft of the various ligament reconstructions could collide with one another. In this Technical Note, we describe the methods used by our senior author to reconstruct the cruciate ligament utilizing all-inside methods and the superficial MCL employing suture anchors. By focusing the reconstructive process and implants for MCL fixation on the medial femoral condyle and medial proximal tibia, the approach reduces the danger of collision.

Keywords: MCL • Spinal accessory nerve • Medial collateral ligament • Medial proximal tibia

Introduction

Spinal Accessory Nerve (SAN) is a purely motor nerve which innervates the It is superficial. One of the key stabilizers for knee anteromedial instability is the MCL. Medial Collateral Ligaments (MCL) in Grade I and II are often treated conservatively. For persistent grade III MCL tears that cause symptoms, surgery is advised. The working space is constrained when this is done as part of surgery for a Multifilament Knee Injury (MLKI). There is a chance of collision between the guide pin, pulling sutures, reamer, tunnel,

implant, and graft of the various ligament reconstructions, depending on the methods utilized for Scheck classifications KD-III-M and KD-IV. The MCL reconstruction runs the risk of colliding with the Posterolateral Corner (PLC) femoral tunnels in the distal femur as well as the Posterior Cruciate Ligament (PCL) femoral tunnel at the medial femoral condyle. All-inside procedures are used for ACL and PCL reconstructions, whereas the reconstruction procedure and implants for MCL fixation are restricted to the medial femoral condyle and medial proximal tibia reconstruction procedure and implants for MCL fixation are restricted to the medial femoral condyle and medial proximal tibia. There are numerous approaches for MCL reconstruction that have been described and to reduce the risk of collision. These techniques must be applied selectively to a KD-III-M and KD-IV reconstruction with a thorough preoperative plan. We outline technological options that can help these difficult surgeries have a successful outcome.

Discussion

Here are numerous efficient methods for the repair of grade III MCL injuries with ongoing symptoms. Suspensory devices and compression screws are two frequently utilized fixing methods. In KD-III-M and KD-IV, there is a possibility of collision. Particularly in patients with tiny frames, the MCL and PCL femoral tunnels are close together at the medial femoral condyle. The PCL femoral tunnel is reamed using an anterolateral portal in the inside-out procedure, and as a result of the limitations imposed by the soft tissue and bony architecture, the femoral tunnel is more acutely angled at the intra-articular aperture. Additionally, it brings the cortical end of the PCL femoral tunnel closer to the MCL reconstruction's femoral attachment. The outside-in approach is a substitute that offers more. It is consistently possible to put it farther medially in the femoral condyle. Compared to the inside-out method, this maintains a greater distance from the femoral fixation of the MCL reconstruction. A full femoral tunnel, which consumes more bone, and a larger cortical aperture are the outcomes of the outside-in approach. In comparison to the outside-in technique, the all-inside technique requires less working space at the cortical end of the femoral tunnel and decreases bone loss. It also has a lower intra-articular aperture angulation than the inside-out technique. It also keeps the arthroscopic fluid tamponade in place. The authors use the Aciero method for reconstructing the PLC in a KD-IV. There is a risk of collision in the distal femur with the PLC femoral tunnels, the fixation devices, and tugging sutures when a compression screw or suspensory device is utilized for MCL femoral fixation. When suture anchors are used, the reconstruction is constrained, and the implant for MCL femoral fixation is only placed on the medial femoral condyle.

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