All-Inside Repair for Radial Tear at the Posterior Horn of the Lateral Meniscus: A Mason Allen Suture Technique

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INTRODUCTION:

The lateral meniscus plays a crucial role in force distribution and cartilage protection. Untreated radial tears can worsen tibial plateau pressure and potentially accelerate osteoarthritis. Caution is necessary during repair, especially for posterior horn tears, as inside-out or outside-in techniques risk neurovascular injuries. Hence, the preferred method is all-inside repair. We report a Mason Allen suture construct, ensuring stabilization and positive clinical outcomes.

REPORT:

We document a case of 45 years old man presented with right knee pain following a fall from stairs. The pain was sharp and excruciating with immediate effusion. However, he was still able to ambulate without assistance. Physical examination revealed range of motion from 5° to 90° of flexion, 2+ effusion, positive lateral joint line tenderness and grade 1 positive Lachmann test. Plain radiograph was acquired and demonstrated no acute fractures or traumatic malalignment with preserved joint spaces. Magnetic resonance imaging (MRI) was done demonstrated grade 3 tear of the posterior horn of the lateral meniscus with concomitant partial tear of anterior cruciate ligament (ACL).

Patient underwent diagnostic arthroscopy 3 weeks post trauma. Intraoperatively noted complete radial tear of the posterior horn lateral meniscus while the ACL both fibers intact however lax upon probing. Debridement of the meniscal tear site and micro-fracturing of the notch were performed to enhance healing. Repair procedure using Mason Allen suture technique was utilized. First suture was made approximately 5mm to the fragment near the root in radial manner while subsequent suture was constructed perpendicular to the rip stop suture crossing the tear.

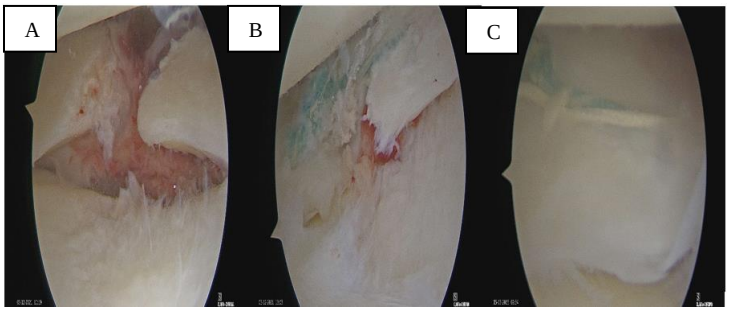

Figure 1: **A** radial tear at the posterior horn of the lateral meniscus in right knee, **B**: Mason Allen suture construct with well reduced meniscus tear with fibrin clot within, **C**: Well healed meniscus post operative 1 year

Prior to tightening the construct fibrin clot as introduced to further enhance the healing process. Non-weight bearing ambulation with crutches for 6-weeks and flexion up to 90° was part of the rehabilitation protocol at which patient was compliant to. His recovery was uneventful with ROM improved significantly to 120° of flexion. At 1 year post repair he complaints of persistent right knee instability. Examination revealed Lachmann test and Dial test positive. A diagnosis of right knee ACL and PLC injury was made. Patient underwent second operation to address the multi-ligament laxity with reconstruction using allograft. During the second scope it was noted that the radial tear of lateral meniscus posterior horn was completely healed despite the deficient ligament.

CONCLUSION:

This relatively straightforward technique facilitates precise reduction and stabilization of the meniscus, resulting in favorable clinical outcomes even in a setting of multiligamentous injuries.

REFERENCES:

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