

Meniscal Root Tears: Patient Demographics and Clinical Outcomes After Arthroscopic Repair Using Suture Anchors Via a Posteromedial Portal and Trans-Tibial Tunnel Fixation

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Summary:

Arthroscopic repair of posterior horn meniscal root tears via a posteromedial working portal and trans-tibial tunnel fixation is a safe and effective procedure.

Abstract:

Introduction:

Radial root tears of the posterior horn of the menisci result in altered knee biomechanics (1,2) and significant joint pathology if left untreated (3). Arthroscopic repair using an accessory posteromedial portal has been developed to facilitate identification and repair of these tears (4-6). The objective of our study was to evaluate demographics and clinical outcomes of patients who underwent arthroscopic repair of meniscal roots tears using suture anchors via a trans-tibial tunnel through a posteromedial portal.

Methods:

Single center, retrospective case series of adults with a posterior horn meniscal root tear who were treated with arthroscopic repair using suture passage via a posteromedial portal and fixation with a trans-tibial suture button. The study was approved by the institutional review board at our institution. Outcome variables were patient characteristics [age, sex, body mass index (BMI), associated injuries, time between injury and index procedure], intra-operative Outerbridge scores, postoperative surgical complications, and need for re-operation. Descriptive statistics were used to describe the patient population and their outcomes. Outerbridge scores were compared between compartments using a paired student t-test.

Results:

Twenty patients were studied (female – 14; male – 6; average age 45.0 years, range 19.6 – 64.3 years). The average BMI was 26.7 (range 18.2 - 41.0). Associated injuries included 9 ACL tears, one PCL tear, one lateral femoral condyle osteochondral defect, and 3 ipsilateral knee meniscal tears. Three patients had a previous ipsilateral knee injury that required surgery. Three lateral root tears and 17 medial root tears were treated arthroscopically. Average time between the injury and the index procedure was 196.5 days (range 16 – 877 days). Average intra-operative Outerbridge scores were significantly greater in the medial compartments (1.5) than the lateral compartments (0.5; $p < 0.05$) and patellofemoral joint (0.8; $p < 0.05$). The average follow-up was 7.5 months (range 0.2 – 40.7 months). Complications included one root tear re-rupture and one patient with a persistent knee effusion. No patients had a neurovascular complication or required re-operation for their root tear. None of the patients had further knee surgeries.

Conclusions:

In this series, posterior horn meniscal root tears are more commonly seen in overweight, middle-aged females and are associated with concomitant cruciate ligament and cartilage injuries. Our early results suggest that arthroscopic repair of posterior horn meniscal root tears via a posteromedial working portal and trans-tibial tunnel fixation is a safe and effective procedure; however, a clinical series with longer follow up is necessary before we can make final

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recommendations regarding functional outcomes and patient satisfaction.

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