Meniscal Root Tears – Two Tunnel Technique

ISAKOS
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Posterior Meniscal Root Repair Techniques

Transosseous pullout technique
• facilitates anatomic repair with a high degree of accuracy and reproducibility
• transtibial tunnel drilling may enhance meniscal healing due to biologic augmentation
• able to restore tibiofemoral contact mechanics

Suture anchor technique
• all-inside meniscal root repair at the native root attachment site and eliminates the need for tunnel drilling
• suture anchor may loosen and protrude into the joint over time

Further optimization of both techniques should focus on eliminating nonanatomic displacement following repair

Repair of a posterior meniscal root tear is essential because of the consequences related to meniscal root deficiency
1 vs 2 Transtibial Tunnels

- Displacement after 1000 testing cycles:
  - 1 tunnel repair: 3.32 mm
  - 2 tunnel repair: 3.23 mm
  *not significant

- 2 tunnel repair had 10.2% higher ultimate failure load (135 N vs 123 N) *not significant

- Similar biomechanical properties between 1 and 2 transtibial bone tunnels

Diagnosis and Preparation of Root Bed

- The bony attachment site should be cleaned with a curette to ensure adequate healing
- Probe every root attachment, every time!

Tibial Tunnel Drilling

- The two tibial tunnels are drilled with an offset guide to increase fixation of the meniscal root
Passing First Suture

Passing Second Suture

Verification of Repair and Fixation
Rehabilitation of Meniscal Root Repairs

- NWB x 6 wks
- “Safe Zone” ROM x 2 wks (0-70° or 0-90°)
- WBAT at 6 wks; ± unloader brace
- Avoid deep leg presses/squats > 70° x 4 months

Clinical Outcomes

- Lee et al. (Arthroscopy 2009): MM root pull-out suture repair
  - 2 yr follow-up: almost complete healing in 27 knees at second-look arthroscopy
  - HSS Score: 61.1 pre-op → 93.1 post-op
  - Lysholm Score: 57.0 pre-op → 93.1 post-op
- Kim et al. (Arthroscopy 2011): MM root repair
  - 48.5 months follow-up: 14 patients better clinical and radiographic results compared to meniscectomy
- LaPrade et al. (AJSM, 2016): MM vs LM root repair
  - 50 patients (15 lateral, 35 medial), minimum 2 yr follow-up
  - Lysholm Score: 53.0 pre-op → 78.0 post-op
  - No differences in outcomes between medial versus lateral meniscus root repair

Thank You