I. Background
   A. Basic science/biomechanics
   B. Anatomy and pathophysiology

II. Demographics
   A. Medial/lateral tears

III. Case Examples
   A. Isolated Medical Meniscus Root Tears (MMRT)
   B. MMRT & PCL (Grade II)
   C. Lateral Meniscus Root Tears (LMRT) with Grade III ACL tear (approximately 15-20% of ACL tears I see have LMRT)
   D. Isolated LMRT (rare)

IV. Conclusion

V. References

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I. Background
   A. Meniscal root tears have been increasingly visible in the orthopaedic and radiology literature.
   B. Basic science studies have shown that posterior horn medial and lateral meniscus root tears cause significant changes in joint biomechanics (increase contact stress and decrease contact area) and that concomitant repair can restore knee joint biomechanics to normal.
   C. Understanding insertion site anatomy is critical to diagnosis and surgical treatment.
II. Demographics
   A. Medial Meniscus Root Tears (MMRT)
      1. Most medial meniscus root tears (MMRT) are in middle aged patients and are usually associated with minor trauma. Often, the patients try to cope with the posterior medial pain and, often, when they present, they usually have some degree of articular cartilage wear (Gr II-IV).
      2. They can be associated with combined injuries, but this is not as common. The 2 most common combined injuries are with PCL and/or multiple ligament injured knee.
   B. Lateral meniscus root tears (LMRT)
      1. Almost always occur in association with ACL injuries. In my experience, approximately 15-20% of ACL injuries have an associated LMRT. Approximately 50% of LMRT are off of bone. The other 50% are within 1 cm of the boney insertion. Often, there will be an associated radial split tear in the mid lateral meniscus.
      2. Not all LMRT can be repaired.
      3. Occasionally, you will see LMRT in isolation.

III. Surgical Indications
   A. MMRT
      1. Significant tear with a repairable root and relatively intact articular cartilage (minimal joint space and narrowing and less than Grade III chondrosis).
   B. LMRT
      1. Relatively easy to repair when off of bone. The tears that are in the body of the meniscus (ie not avulsions) are more difficult to repair.

IV. Techniques of Root Repair
   A. Please see references

V. Case Examples
   A. Isolated medial meniscus root tear in a 52 y/o female tennis player
   B. Medial meniscus root tear and Grade II PCL in a 17 y/o high school football player
   C. Lateral meniscus root tear with ACL tear in a 19 y/o female basketball player
   D. Isolated lateral meniscus root tear in a 19 y/o female volleyball player

VI. References


