

Football player with acute lateral knee pain

Cris Beiro, MD

University Orthopaedic
Associates

June 1, 2023



Life In Motion

www.UOANJ.com | 1-855-UOA-DOCS

Outline

- **Present case**
- Diagnosis
- Management
- Conclusion



Case #1 - CP

- 15 y/o male running back s/p football injury, presents w right knee pain, swelling, decreased ROM



History

- What questions to ask in the history?

History

- What happened?
 - Planted foot and pivoted, felt a “pop”
- Contact or non-contact?
 - Non contact
- What symptoms happened at the time?
 - Pain, mild swelling
- When?
 - 3 months prior to presentation
- Current symptoms, area of knee affected?
 - Pain
 - Lateral knee
 - Locking/catching
- Return to play?
 - No
- Treatment?
 - with ATC

Physical Exam

- What do we look for on physical exam?

Physical Exam

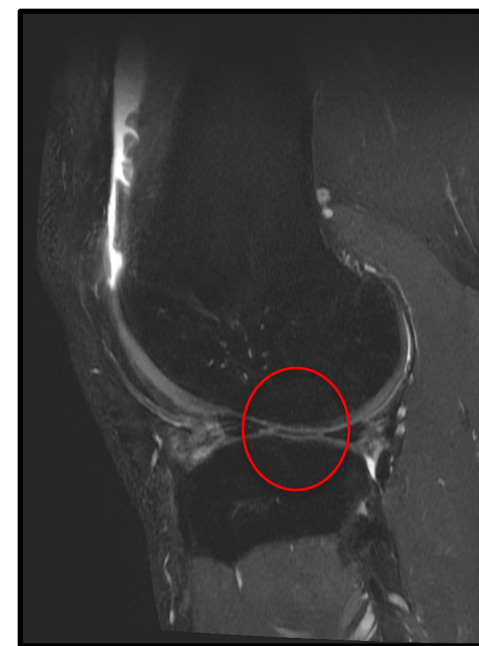
- Pain?
 - Tender at lateral knee joint line
- Swelling?
 - Mild
- Gait?
 - Normal gait
- ROM?
 - Normal with pain on terminal flexion
- Laxity?
 - None
- Neurovascular exam?
 - Intact
- Special tests?
 - Pain with lateral McMurray's test

Imaging

- What imaging to order?

Imaging

- Imaging – Xrays, MRI



Diagnosis

- 15 y/o male with left lateral meniscus radial tear



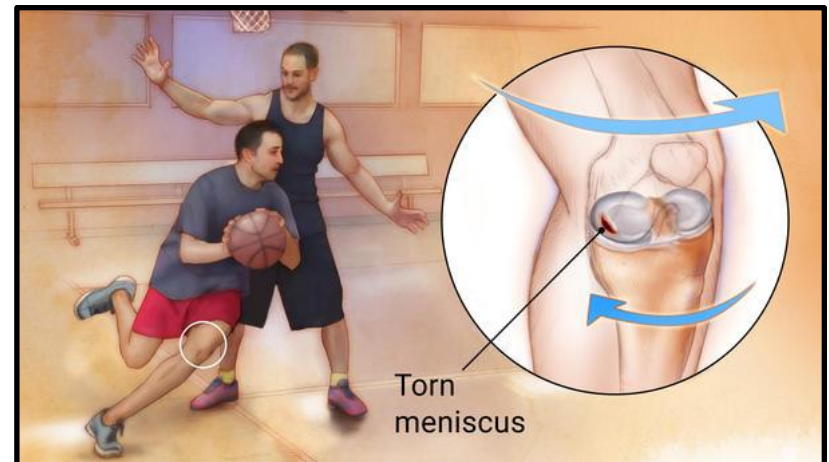
Outline

- Present case
- **Diagnosis**
- Management
- Conclusion



Mechanism of injury

- Meniscus tears can occur with any activity that causes you to forcefully twist or rotate your knee, such as aggressive pivoting or sudden stops and turns.
- Can take place when an athlete twists or turns their upper leg while their foot is planted and their knee is bent.
- Even kneeling, deep squatting or lifting something heavy can sometimes lead to a torn meniscus.



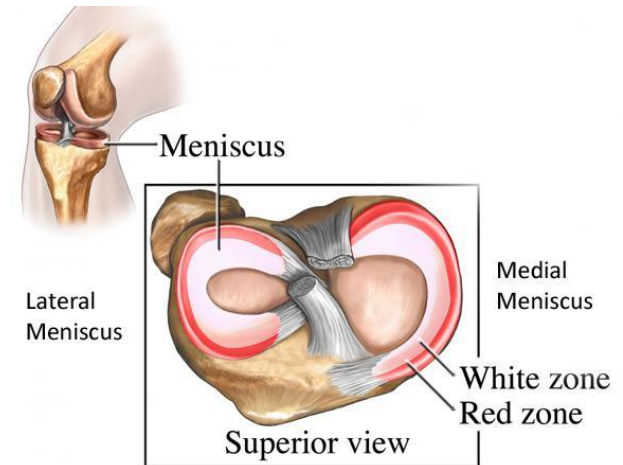
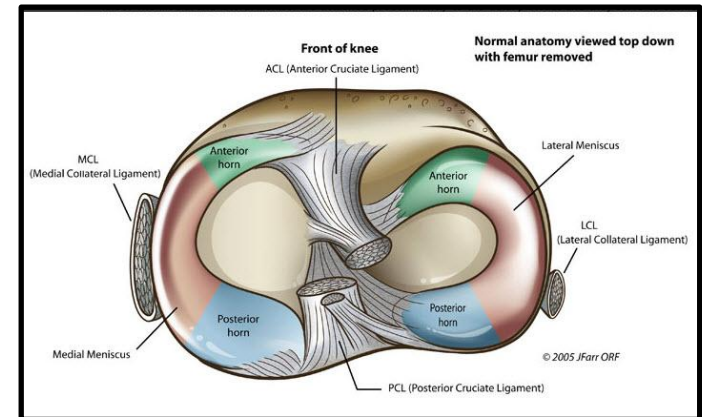
Epidemiology

- Meniscus tears are the most common indication for knee surgery
- Meniscus tears are common sports-related injuries in young athletes
- Can also present as a degenerative condition in older patients
- Diagnosis can be suspected clinically with joint line tenderness and a positive McMurray's test
- Can be confirmed with MRI studies
- Higher risk for tear in ACL deficient knees



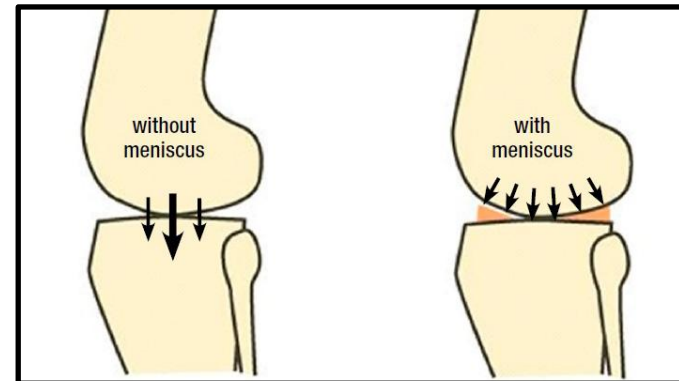
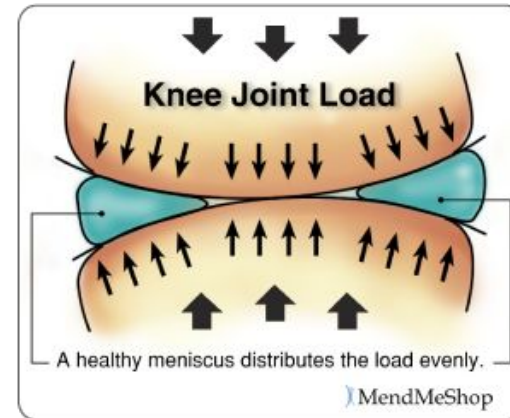
Meniscus anatomy

- Two “C-shaped” rings between the femur and tibia
- Medial and lateral
- Divided into “horns” – anterior, body, posterior
- Made of fibroelastic cartilage (Type I collagen)
- 3 Zones:
 - Red zone (peripheral)
 - Red-White zone
 - White zone (central)



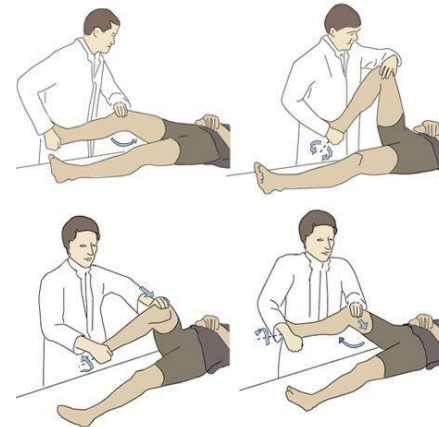
Meniscus function

- Shock absorption
- Provides stability for femorotibial articulation
- Increases congruency to distribute axial load
- Provide joint lubrication and nutrition



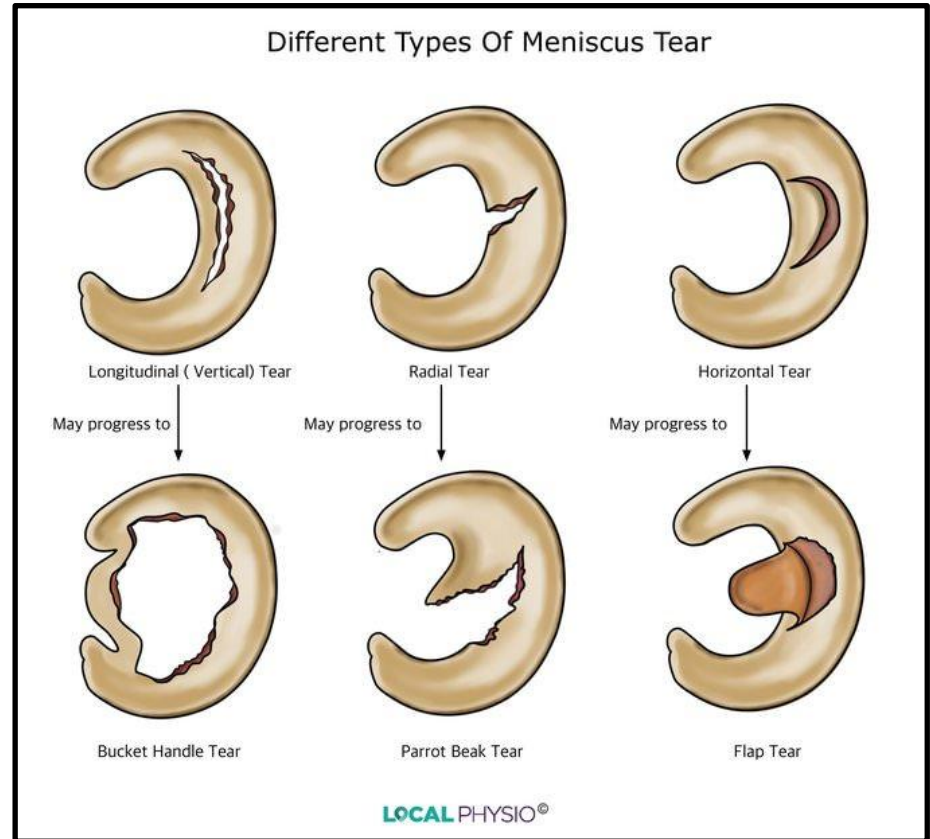
Meniscus tear signs/symptoms

- Symptoms
 - pain localizing to medial or lateral side
 - mechanical symptoms (locking and clicking), especially with squatting
 - delayed or intermittent mild swelling
- Physical exam
 - Joint line tenderness is the most sensitive physical examination finding
 - effusion
- Provocative tests
 - McMurray's test
- Imaging
 - Xrays
 - MRI



Types of Meniscus tears

- Horizontal
- Vertical
- Flap
- Parrot beak
- Bucket handle
- Complex
- Degenerative



Outline

- Present case
- Diagnosis
- **Management**
- Conclusion



Management

- Treatment options?
 - Non-operative vs operative?
 - What kind of surgery?



Non Operative

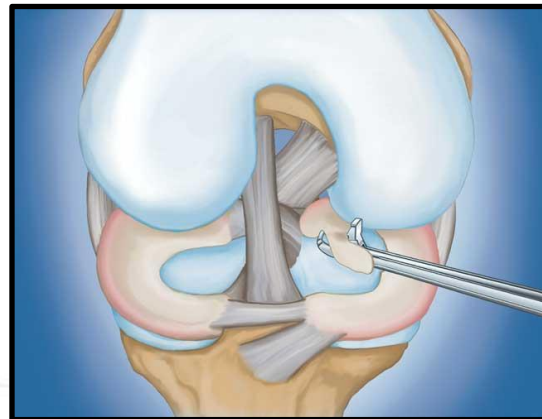
- **Rest, NSAIDS, PT, activity modification**
- Indicated as first line treatment for degenerative tears
- “Noninferior” when compared to arthroscopic partial meniscectomy

Arthroscopic Partial Meniscectomy versus Sham Surgery for a Degenerative Meniscal Tear

Raine Sihvonen, M.D., Mika Paavola, M.D., Ph.D., Antti Malmivaara, M.D., Ph.D.,
Ari Itälä, M.D., Ph.D., Antti Joukainen, M.D., Ph.D., Heikki Nurmi, M.D.,
Juha Kalske, M.D., and Teppo L.N. Järvinen, M.D., Ph.D.,
for the Finnish Degenerative Meniscal Lesion Study (FIDELITY) Group

Operative

- Meniscus repair
 - Vascular tear patterns
 - Younger patients
 - Increased success rate w ACLR
 - Role for adjuncts (Marrow venting, blood clot, PRP?)
 - Prolonged rehab & recovery
- Partial meniscectomy
 - Avascular tear pattern
 - Degenerative
 - Conservative removal
 - Short recovery



Operative

Meniscal Repair for Radial Tears of the Midbody of the Lateral Meniscus

Nam-Hong Choi,^{*,†} MD, Tae-Hyung Kim,[‡] MD, Kyung-Mo Son,[§] MD, and Brian N. Victoroff,^{||} MD
Investigation performed at Eulji Medical Center, Seoul, Korea

Management of traumatic meniscal tear and degenerative meniscal lesions. Save the meniscus

P. Beaufils^{*}, N. Pujol

Service d'orthopédie et rhumatologie, centre hospitalier de Versailles, 177, rue de Versailles, 78150 Le Chesnay, France

Repair of Radial Tears and Posterior Horn Detachments of the Lateral Meniscus: Minimum 2-Year Follow-Up

Libby Anderson, B.Com., B.Sc., M.B.B.S.,
Mark Watts, B.Sc.App.H.M.S.(Ex-Sc)(Hons), M.Phil.,
Oliver Shapter, M.Chem.(Hons), M.B.Ch.B.,
Martin Logan, B.Sc.(Hons), M.D., F.R.C.S.(Tr&Orth),
Michael Risebury, M.A.(Hons), F.R.C.S.(Tr&Orth),
David Duffy, M.B.B.S., F.R.C.S.(Tr&Orth), and Peter Myers, M.B.B.S., F.R.A.C.S.

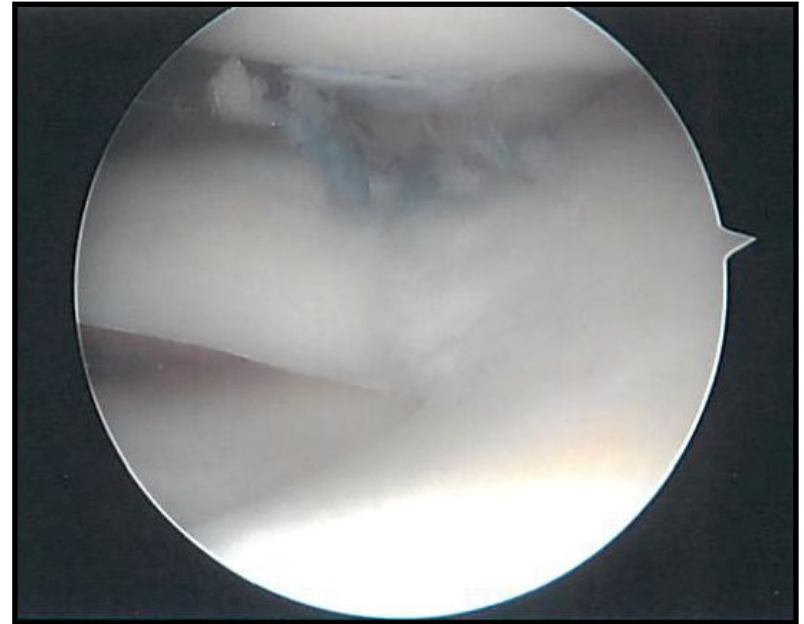
Platelet-Rich Plasma Reduces Failure Risk for Isolated Meniscal Repairs but Provides No Benefit for Meniscal Repairs With Anterior Cruciate Ligament Reconstruction

Joshua S. Everhart,^{*} MD, MPH, Parker A. Cavendish,^{*} BS, Alex Eikenberry,^{*} BS,
Robert A. Magnussen,^{*} MD, MPH, Christopher C. Kaeding,^{*} MD, and David C. Flanigan,^{*,†} MD
Investigation performed at Sports Medicine Research Institute, The Ohio State University, Columbus, Ohio, USA

- Repair success rates range from ~70-90%
- Indications for meniscus repair expanding
- Role for adjuncts in isolated meniscus repair to assist w healing

Case CP - What was done?

- Meniscus repair w PRP – 4 mos out, doing well



Outline

- Present case
- Diagnosis
- Management
- **Conclusion**



Conclusion

- Consider meniscus tears in athletes w knee rotational injuries, joint line tenderness
- May occur in conjunction w ligamentous/chondral injuries
- If any suspicion for meniscus tear, refer to orthopaedist ASAP to develop a plan for definitive management



Thank You