Imaging the Knee: What Role Is There For Ultrasound?

Jon A. Jacobson, M.D.
Professor of Radiology
Director, Division of Musculoskeletal Radiology
University of Michigan

Tendon Abnormalities
- Tendinosis:
  - Enlarged, hypoechoic, no inflammation
- Tear:
  - Partial-thickness tear
  - Full-thickness tear: retraction

Disclosures:
- Consultant: Bioclinica
- Book Royalties: Elsevier
- Advisory Board: Philips
- Educational Grant: RSNA
- None relevant to this talk

Outline
- Extensor mechanism
- Baker cyst and other bursa
- Snapping conditions

Quadriceps Tendon: tendinosis

Quadriceps Tendon: Partial Tears
Case 1: Rectus Femoris tear (1 layer)
Case 2: Vasti tear (2 layers)
Quadriceps Tendon: full-thickness tear

Patellar Tendon: tendinosis

Patellar Tendon: full-thickness tears: 3 patients

Outline
- Extensor mechanism
- Baker cyst and other bursa
- Snapping conditions

Knee Bursae

Baker Cyst:
- Semimembranosus-medial gastrocnemius bursa
- 50% over age of 50 have communication with knee joint
- Cyst communication to posterior knee between SM-MG tendons required

AJR 2001; 176:373
Baker Cyst

Superficial Infrapatellar Bursa

Transverse Longitudinal

SM MG

MG

Baker Cyst: rupture

Longitudinal Coronal T2w

Prepatellar Bursa: aseptic fluid

Pes Anerinus: bursal fluid

Tibia PT PT

Pes Anerinus: bursal fluid

Longitudinal Transverse
Adventitious Bursae:

- Site of friction
- Myxomatous degeneration of fibrous tissue
- Medial epicondyle:
  - Rider’s bursa: horseback riding
  - Limbo-dancing
    - Trinidadian art form of limbo dancing

Outline

- Extensor mechanism
- Baker cyst and other bursa
- Snapping conditions

Take Home Points

- Extensor mechanism:
  - Tendinosis and tendon tear
- Baker cyst:
  - Must see neck or channel to diagnose
- Other bursae:
  - Anatomic and adventitious
  - Snapping tendons
Syllabus on line and other educational material:
www.jacobsonmskus.com
Twitter handle: @jacoban