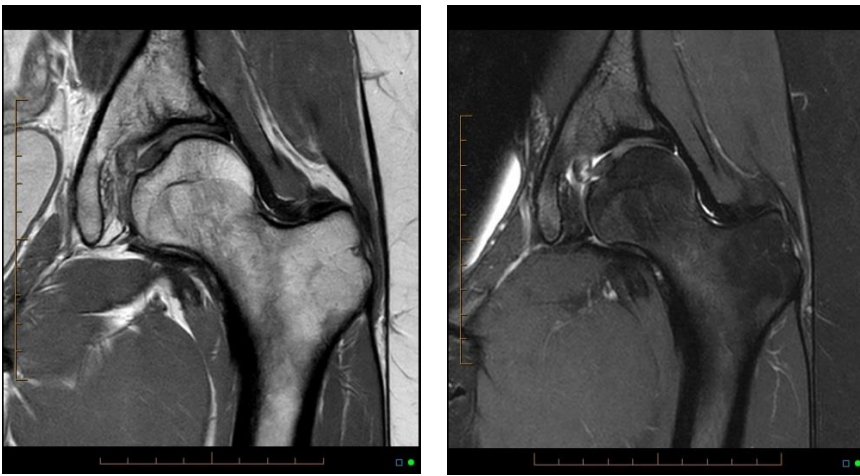


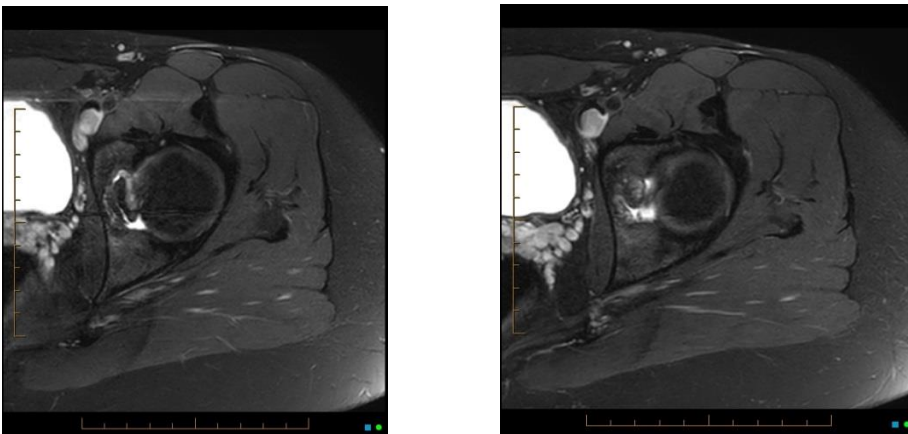
21 yr old female trapeze artist/contortionist felt sudden “clunk” and left anterior hip pain when holding extreme hip hyperextension/abduction

MRI Left Hip (Triplanar PD and PD fat-sat sequences):

- Acute tear and avulsion of the femoral attachment of the ligamentum teres (LT) near fovea capitis
- Small hip joint effusion
- Mild acetabular over-coverage and a mildly elongated labrum
- Probable subtle labral tear anterosuperiorly with a small ganglion cyst
- Mild strain at the origin of rectus femoris



PD and PD SPAIR Coronal – Abnormal signal and avulsed/discontinuous LT close to fovea capitis



PD SPAIR axial (consecutive slices) – Demonstrates lax/avulsed LT with high signal in and around the injured structure

Discussion

- Limited radiology or orthopaedic reports/literature regarding ligamentum teres injuries (particularly acute tears)
- Increasing use of MRI and hip arthroscopy and identification of more LT lesions has spiked interest in this structure
- Exact function of LT remains unclear although recent theories/studies suggest it plays a mechanical role in stabilization
- LT has drawn similarities (in function) to the anterior cruciate ligament (ACL) of the knee: a strong intrinsic stabilizer that resists joint subluxation forces
- Surgical repair or debridement are now important management considerations

Imaging

- Normal LT is low signal intensity, slightly increased at insertion onto fovea capitis
- MR and MR arthrography equally effective for visualising complete tear
- MR arthrography more accurate in diagnosis of partial tear
- MR/MR arthrography findings
 - Avulsion from fovea capitis or midsubstance tear
 - Partial-thickness tear: Elongation or thinning of ligament, irregular ligament contour
 - Full-thickness tear: Discontinuity or absence of ligament
 - Hypertrophic ligament: Thicker than thickness of fovea capitis
 - Scarred ligament: Scarred to adjacent structures

Pathology

- Classified as partial, complete or degenerative
- Associated with
 - Femoroacetabular impingement
 - Low lateral centre-edge angle
 - Labral tear or cartilage injury

Clinical Issues

Aetiology:

- hip dislocation, twisting or hyperabduction injury
 - fall on flexed knee
 - atraumatic tear in ballet dancers or FAI
 - degenerative
-
- Clinically difficult to diagnose and although may present as hip and groin pain, locking, catching, and instability... all of these symptoms are *nonspecific* and may be encountered in the setting of other intraarticular conditions
 - Hence warrants high index of suspicion
 - Debridement or surgical repair are management options

Differential Diagnoses

- Iatrogenic excision (such as during open hip procedures for CDH or FAI)
- Congenital absence (associated with CDH)

Further Reading:

- Chahla J et al: Ligamentum teres tears and femoroacetabular impingement: prevalence and preoperative findings. *Arthroscopy*. 32(7):1293-7, 2016
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- Chang CY et al: Use of MR arthrography in detecting tears of the ligamentum teres with arthroscopic correlation. *Skeletal Radiol*. 44(3):361-7, 2015
- Dahir A et al: Diagnostic utility of MRI and MR arthrography for detection of ligamentum teres tears: a retrospective analysis of 187 patients with hip pain. *AJR Am J Roentgenol*. 203(2):418-23, 2014
- Cerezal L et al: Anatomy, biomechanics, imaging, and management of ligamentum teres injuries. *Radiographics*. 30(6):1637-51, 2010
- Byrd JW, Jones KS. Traumatic rupture of the ligamentum teres as a source of hip pain. *Arthroscopy*. 2004; 20(4):385-91.
- Stat Dx online