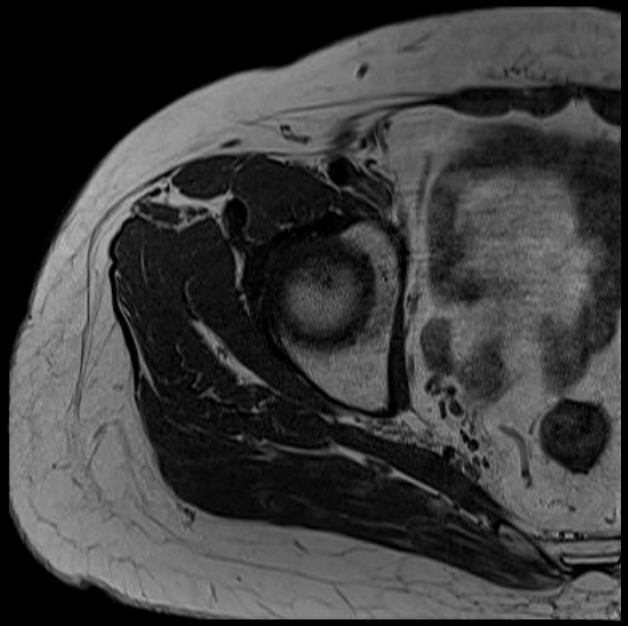
- 65 y F

- The MRI is reviewed, the patient looks like she has a lesion consistent with osteonecrosis although the location is somewhat atypical

Ax T1



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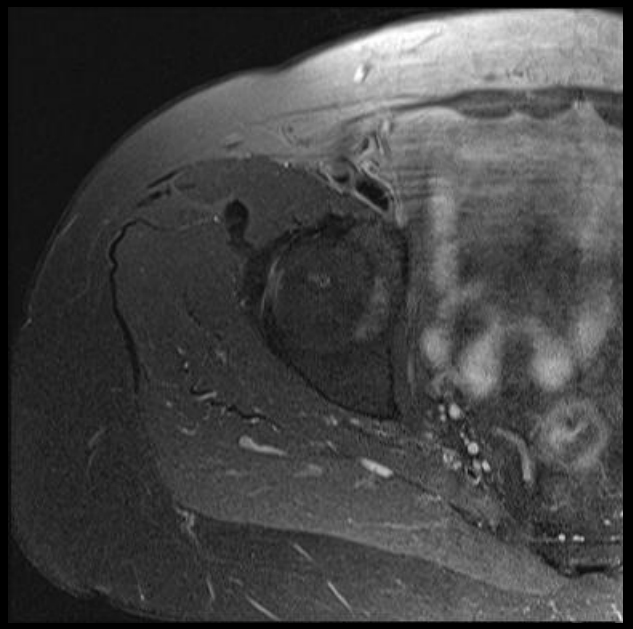

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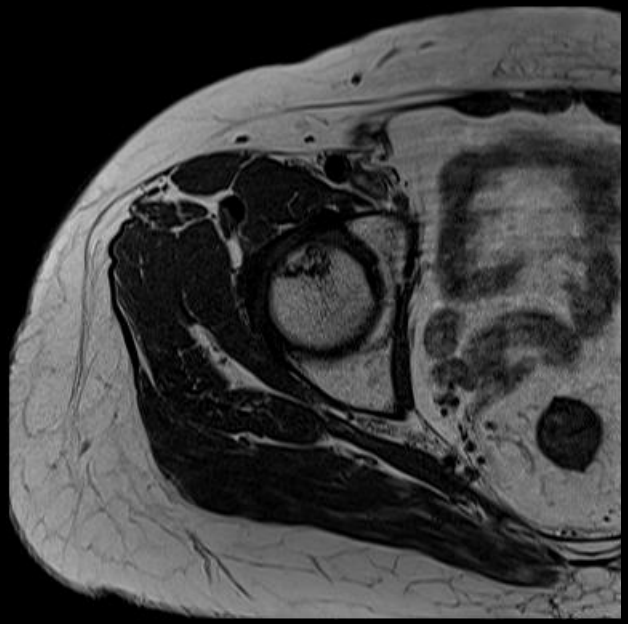

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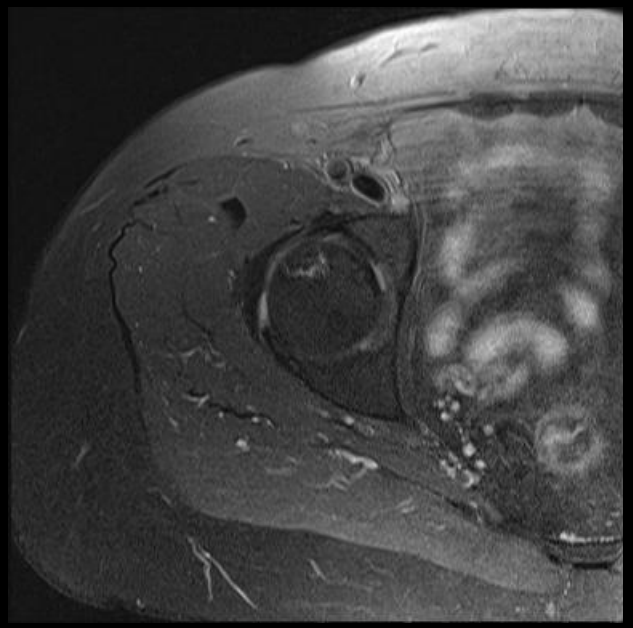

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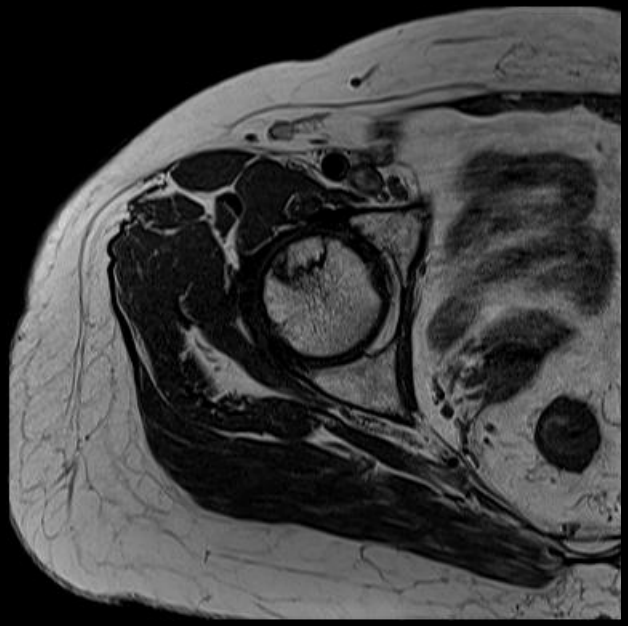

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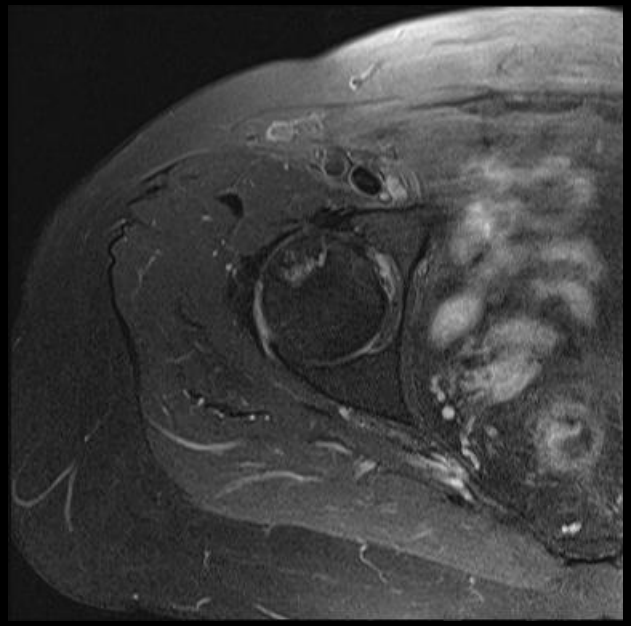

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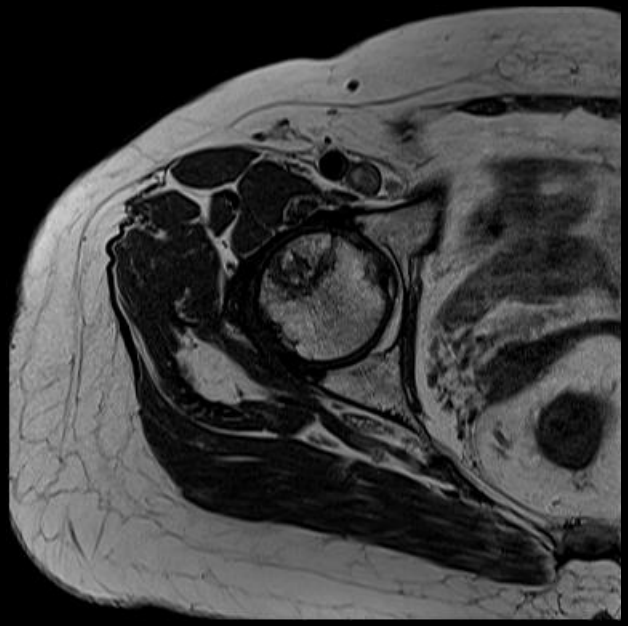

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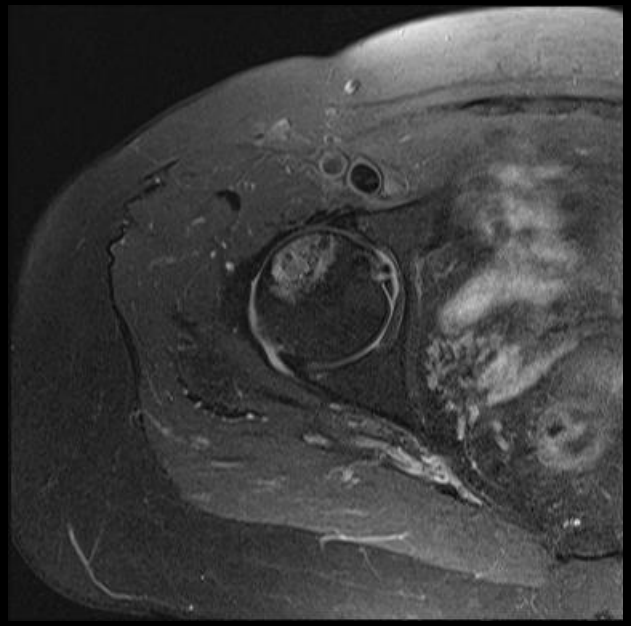

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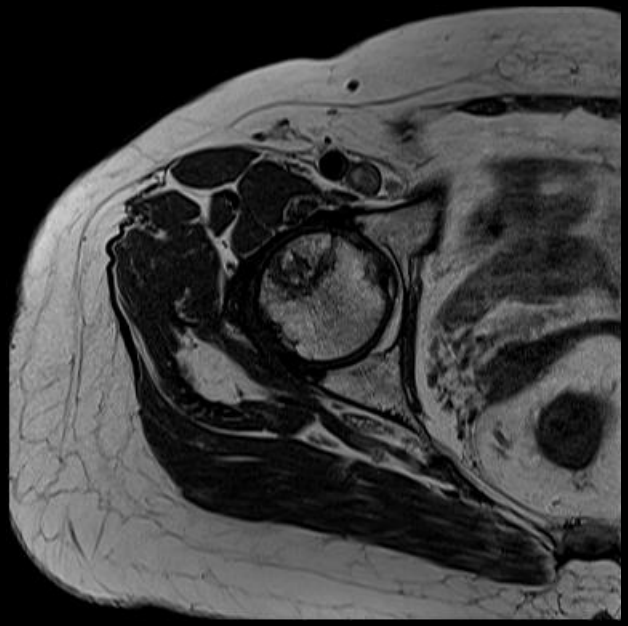

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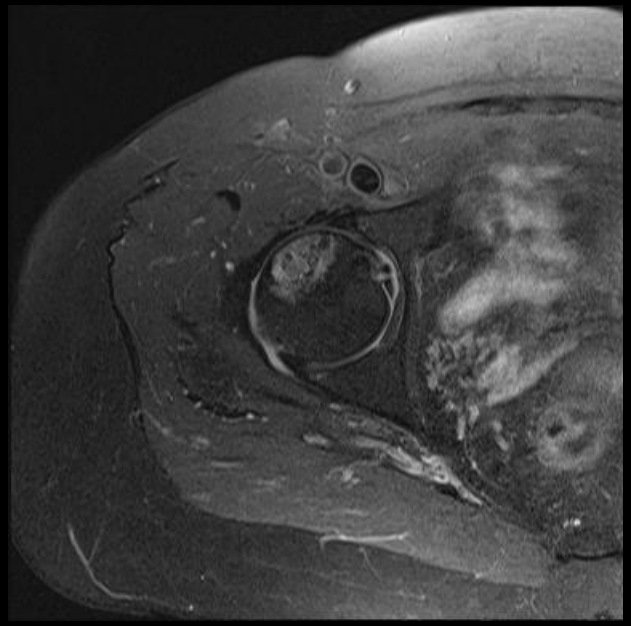

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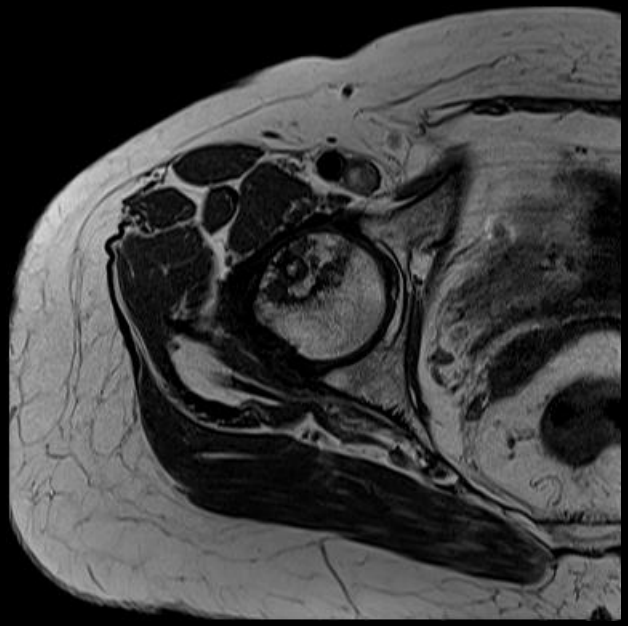

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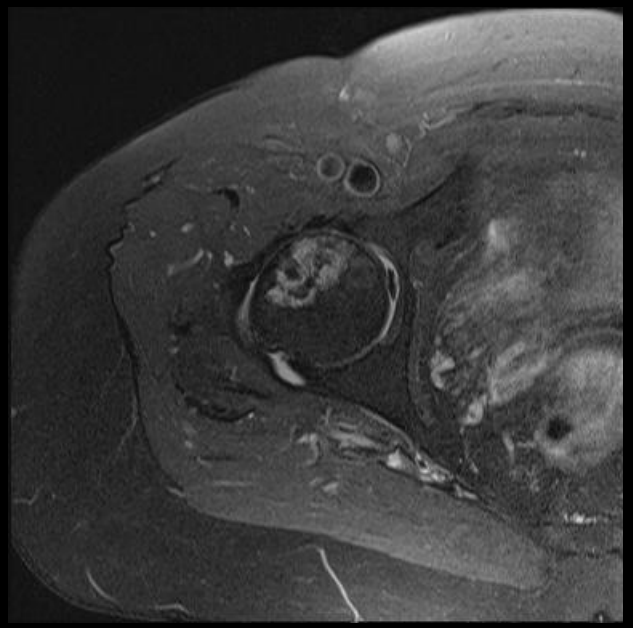

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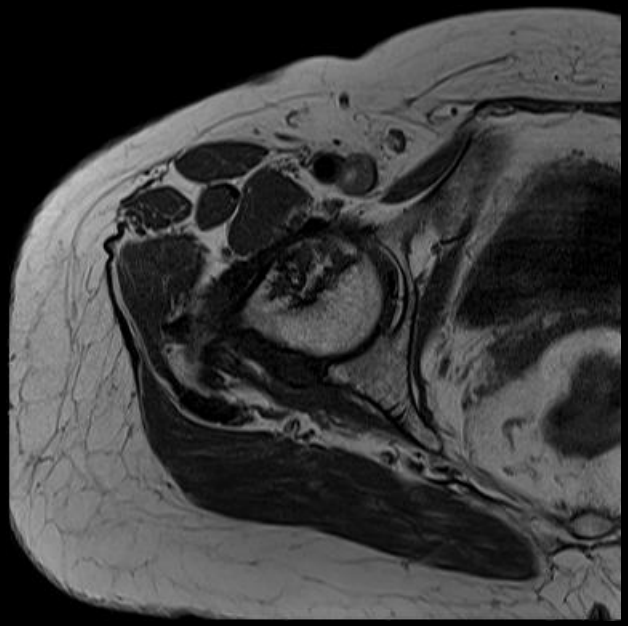

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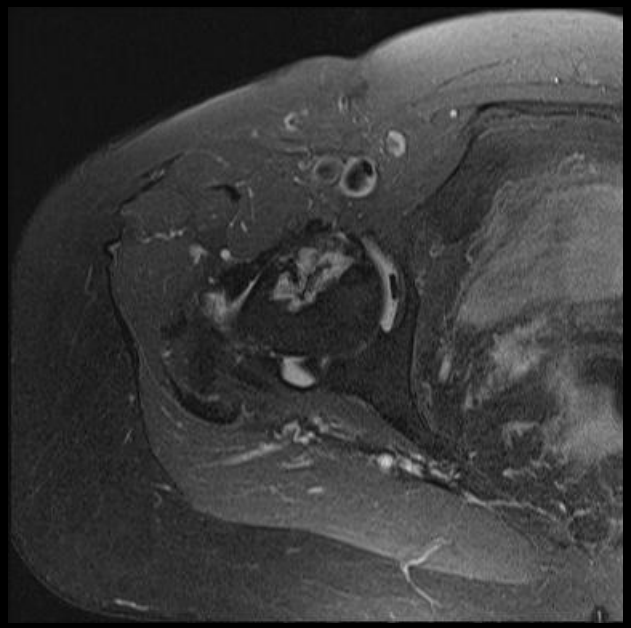

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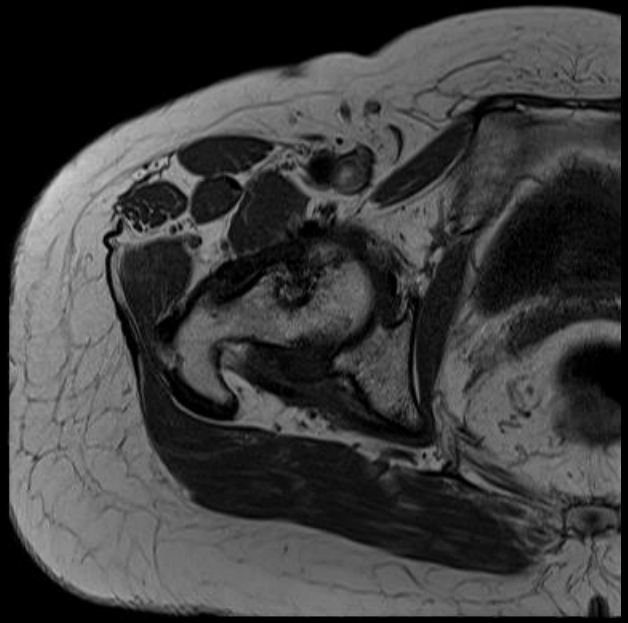

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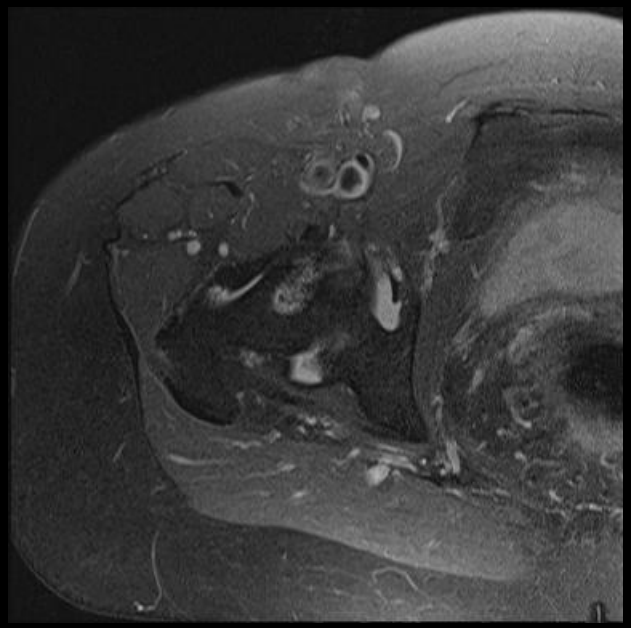

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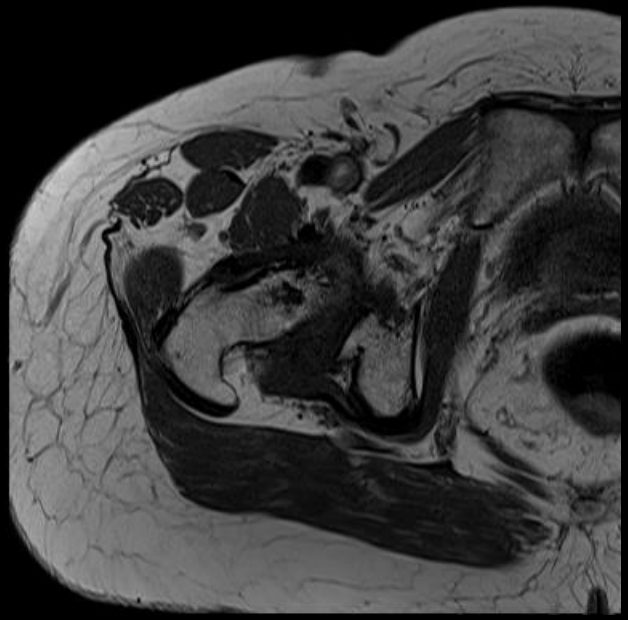

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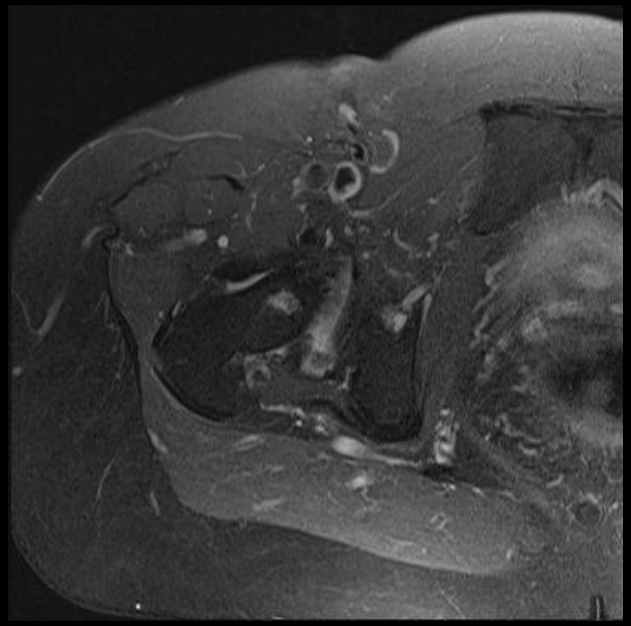

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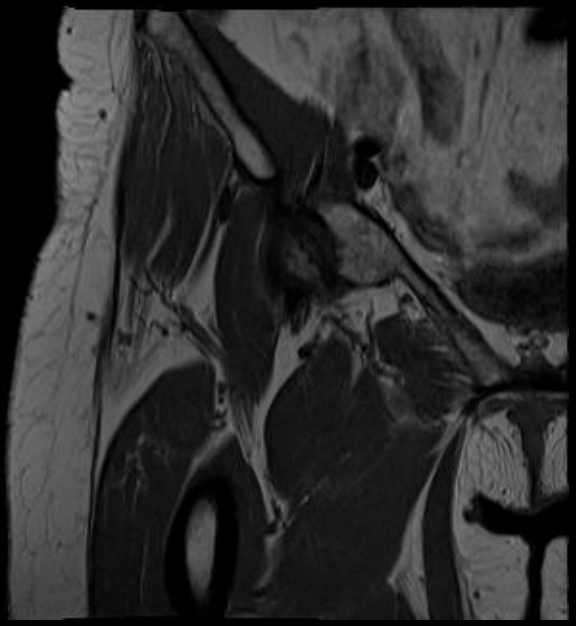

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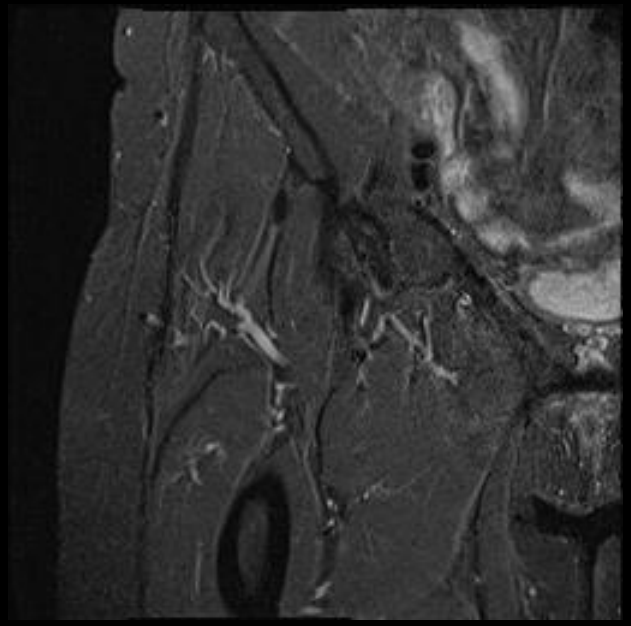

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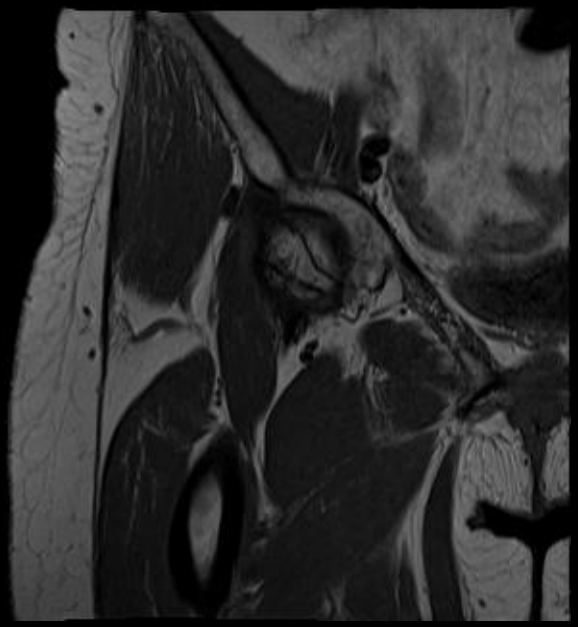

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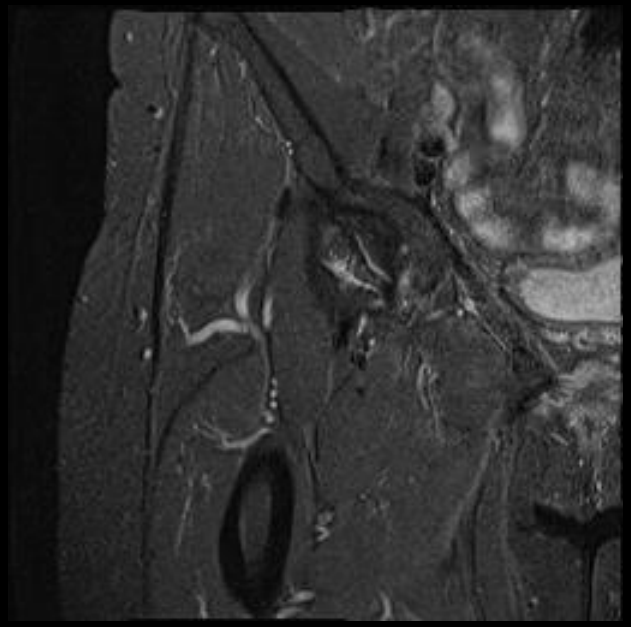

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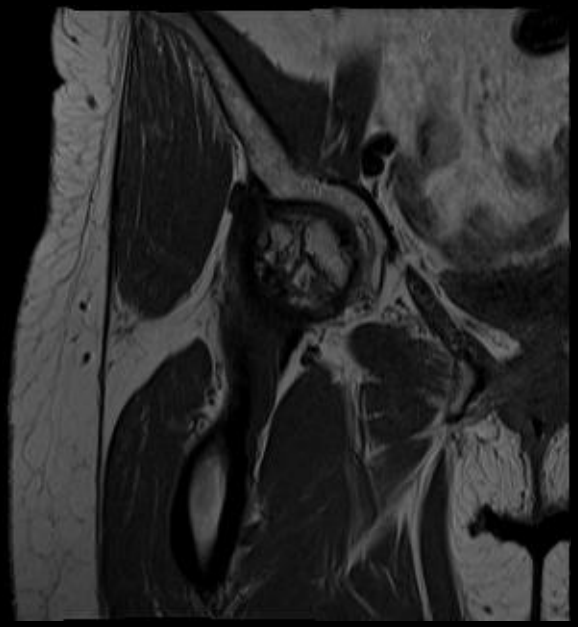

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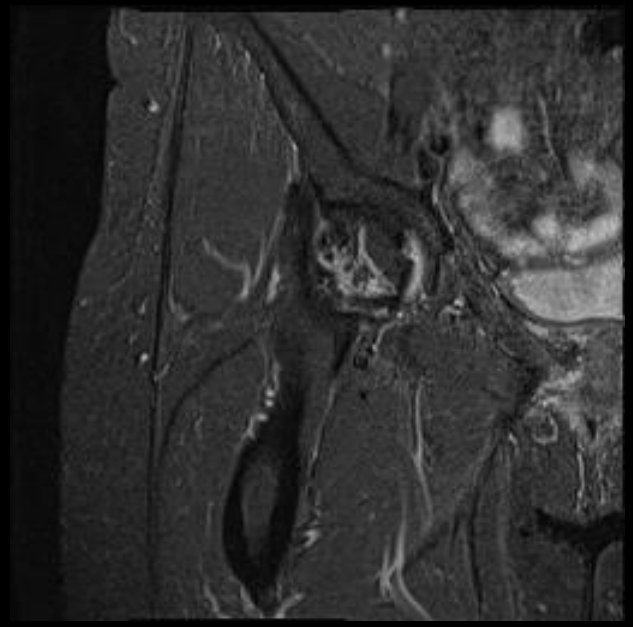

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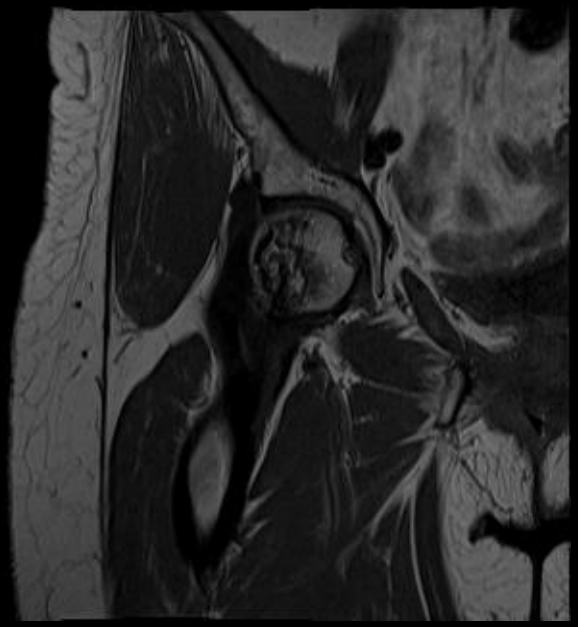

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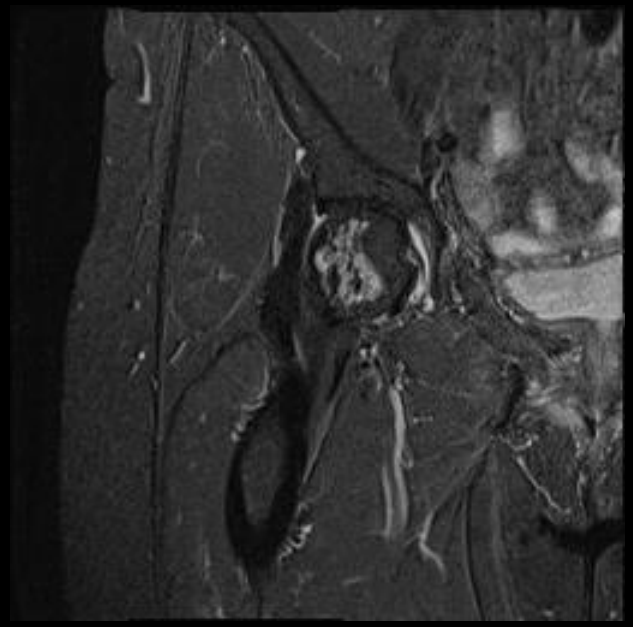

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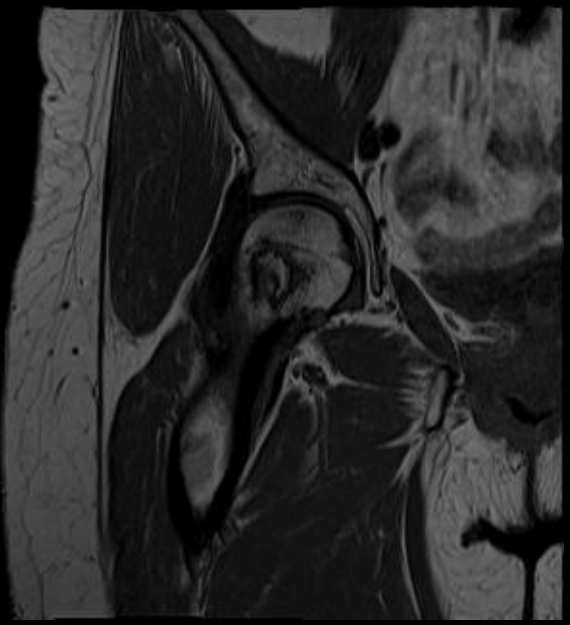

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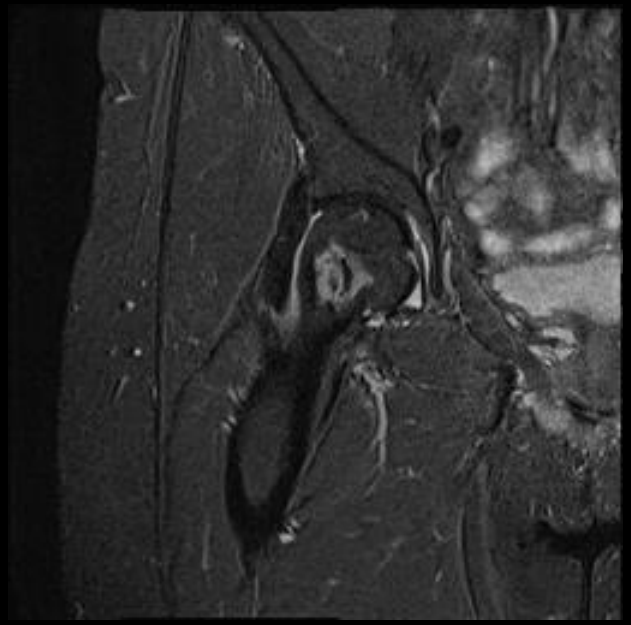

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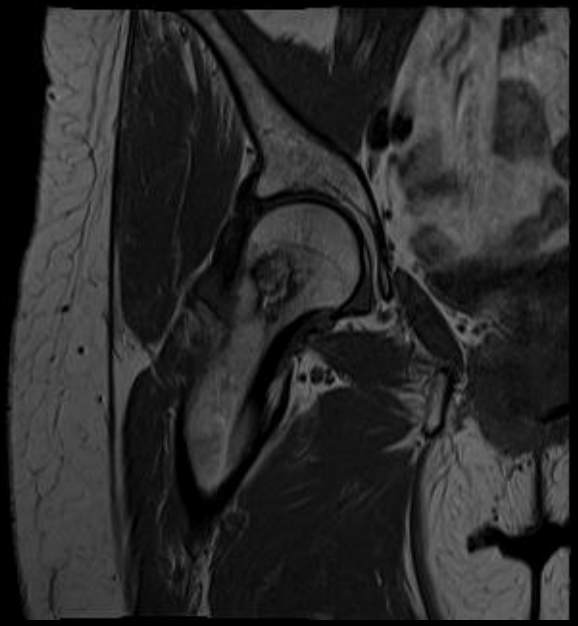

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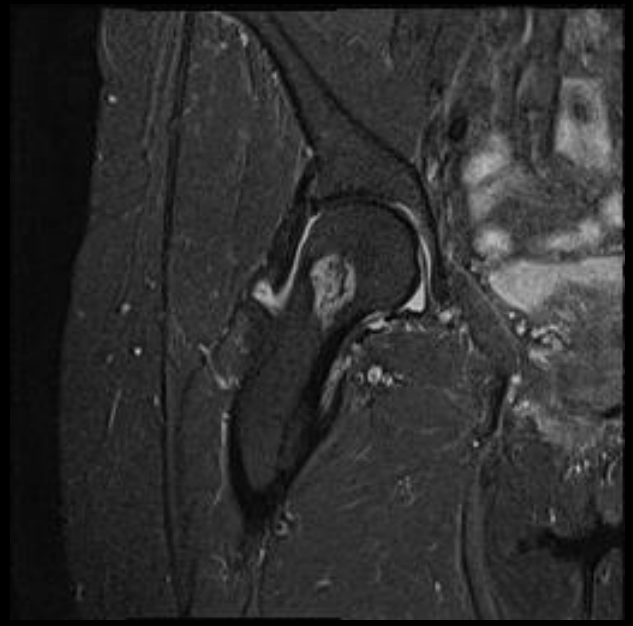

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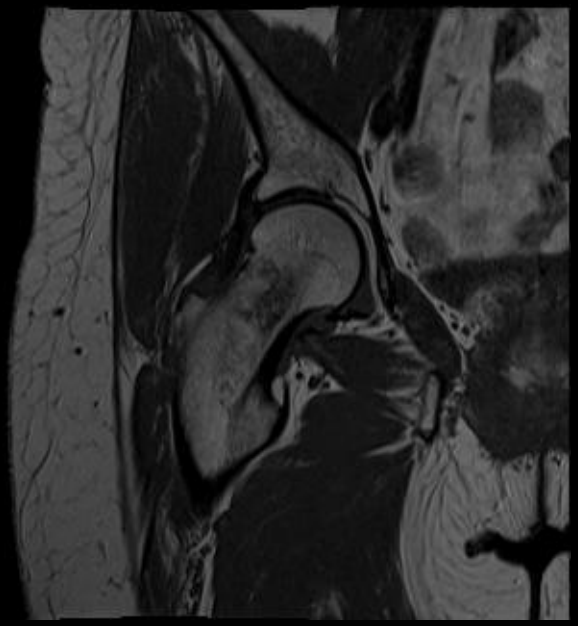

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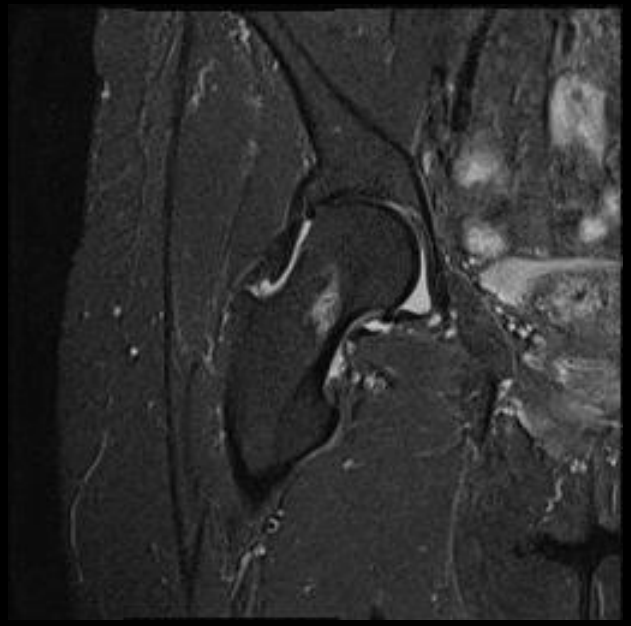

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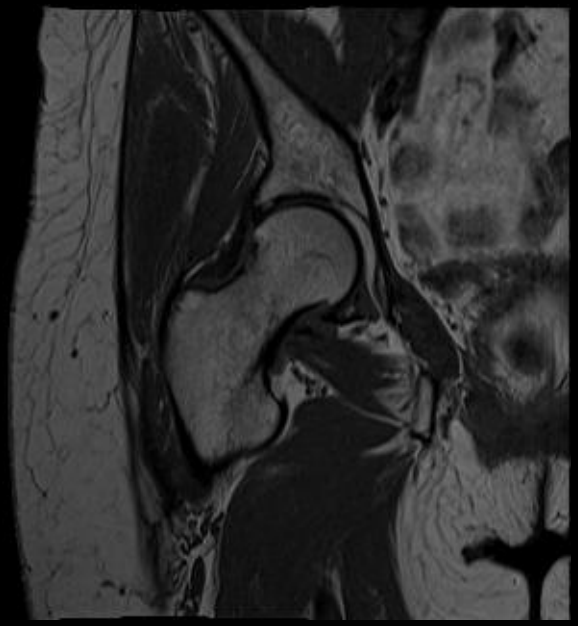

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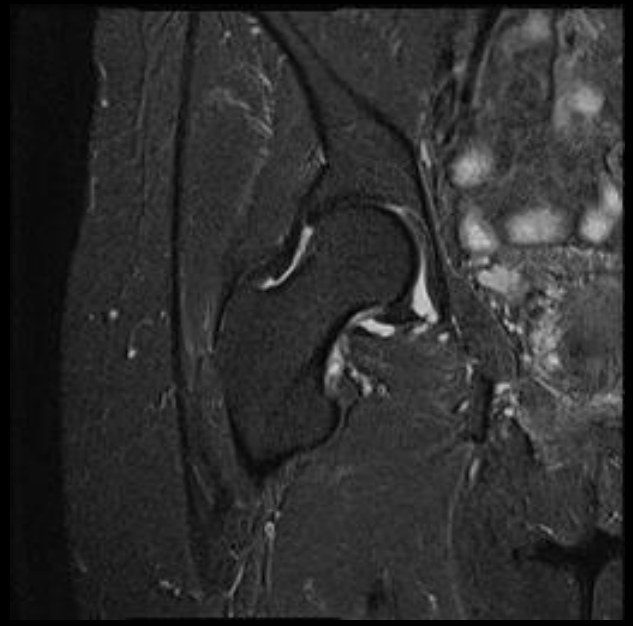

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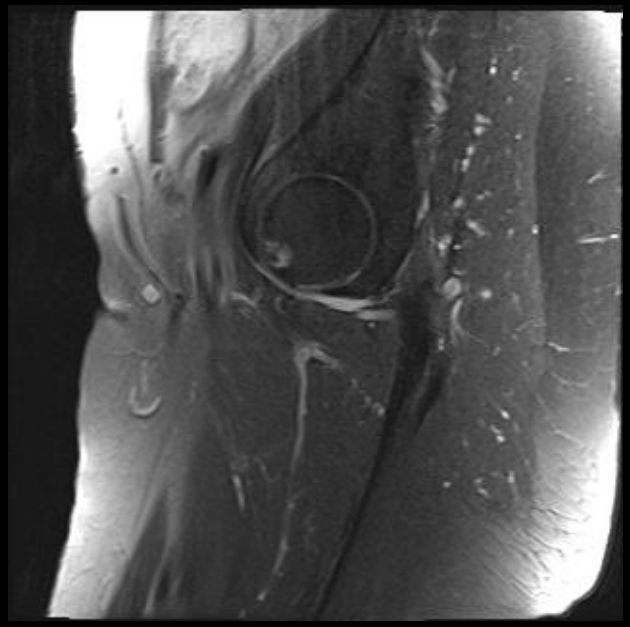

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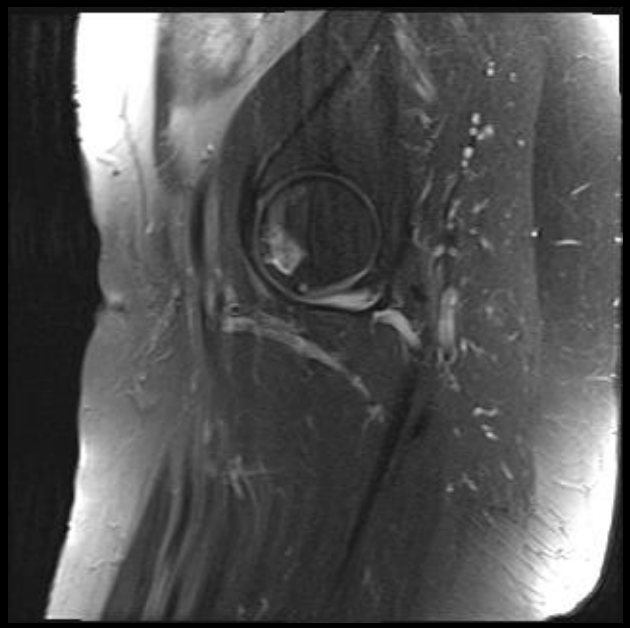

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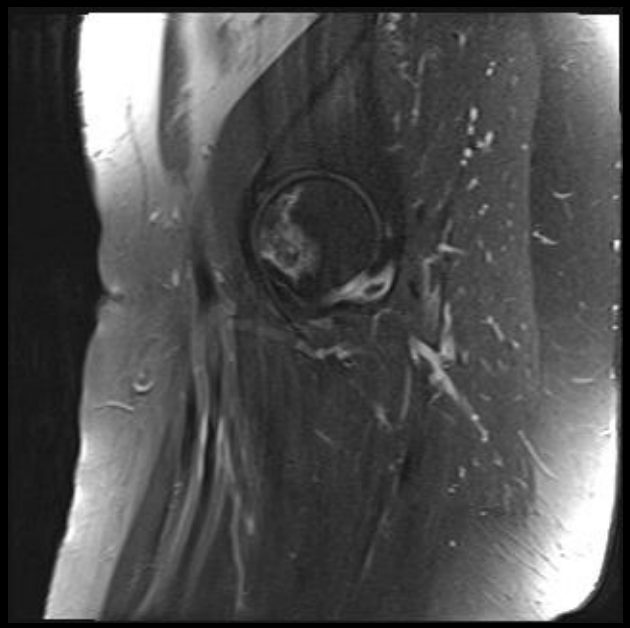

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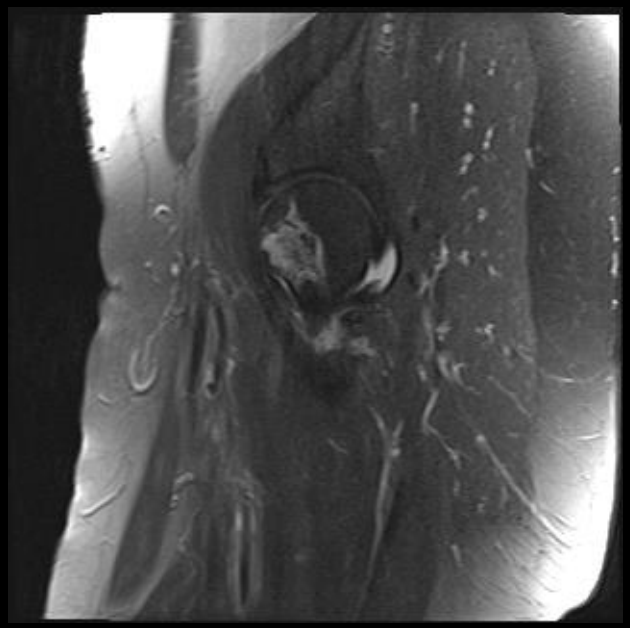

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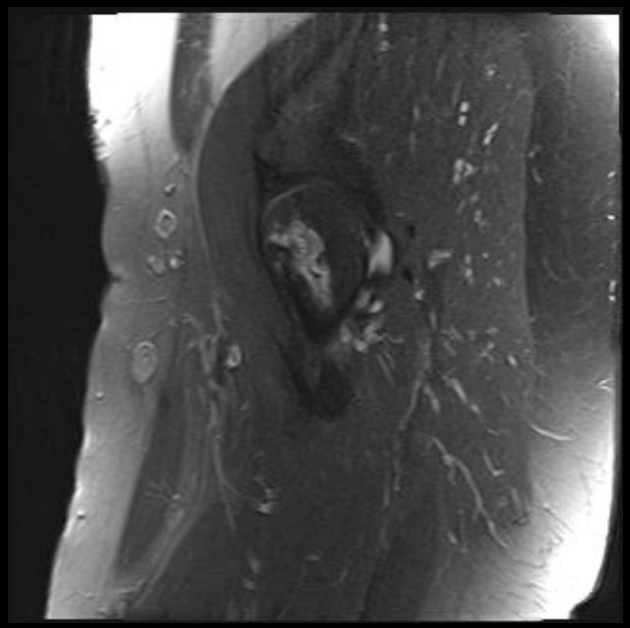


Atypical AVN

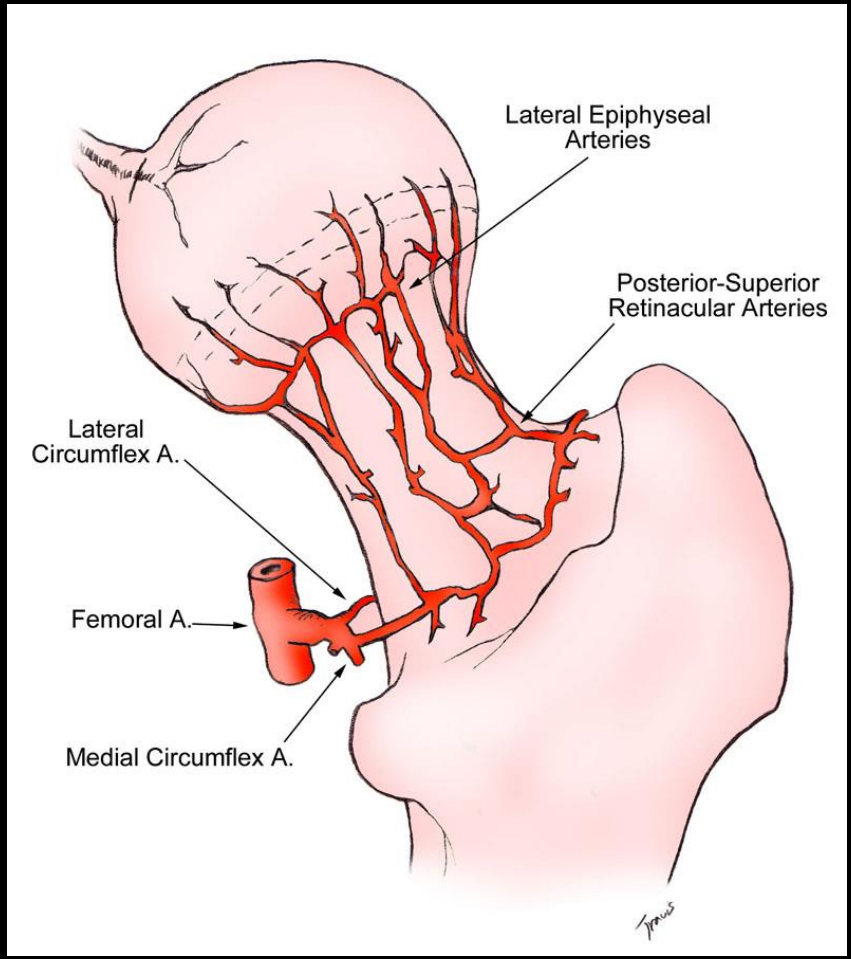
- Distinct focal lesions of the femoral head: imaging features suggesting an atypical and minimal form of bone necrosis

- Theodorou D.J., Theodorou S.J., Haghihi P, Resnick D.. (2002). Skeletal Radiology 31:435-444

- 11 patients with 16 lesions
  - 10 men and 1 woman
  - 32-55 yrs old
- All central lesions extended to the femoral head-neck junction area.
- MR Signal characteristics followed fluid
- Specimens for histology = osteonecrosis

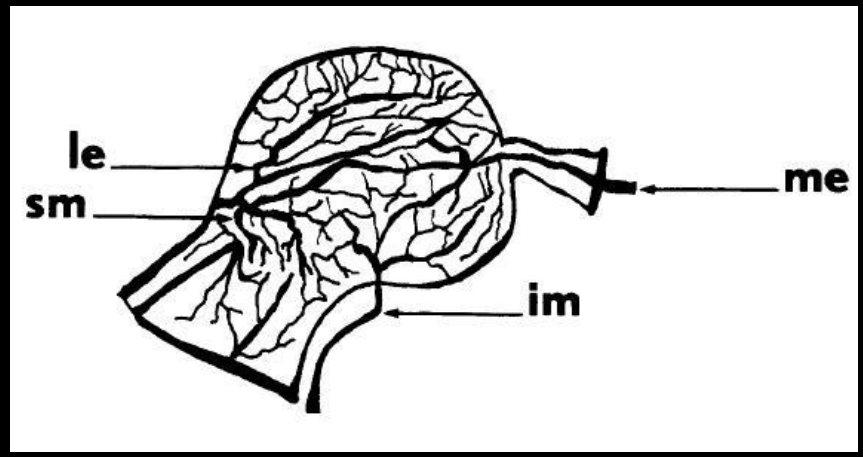
Vascular Anatomy

- Medial and lateral circumflex arteries arise from the femoral artery and are the major blood supply to the femoral head with a lesser contribution from the ligamentum teres artery



Vascular Anatomy - Intraosseous

- Lateral epiphyseal arteries
  - Supply 50-75% of the upper femoral epiphysis
- Superior and inferior metaphyseal arteries
  - Supply the metaphysis and anastamose with the epiphyseal and cervical arteries
- Medial epihyseal artery
  - Continuation of the artery within the ligamentum teres



- Minimal osteonecrotic lesions corresponded to a particular blood supply
  - 63% lateral epiphyseal artery
  - 6% medial epiphyseal artery
  - Remainder in the superior and inferior metaphyseal arterial territories
- Only one case had contralateral typical osteonecrosis
- None developed subchondral collapse

Article Summary

- Small region affected with similar imaging and histopathologic characteristics of osteonecrosis
- Located within segmental arterial supply suggesting single ischemic event
- Decreased chance of progressing to subchondral collapse