

Imaging Options in Knee Pathology

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Outline

- Introduction
- General overview of the different modalities that can be used in knee imaging
- Conclusion

Introduction

- Disorders of the knee are responsible for a major source of referrals to the musculoskeletal radiologist.
- Most cases have suspected abnormalities within the joint either following an acute injury or a more insidious development of symptoms.



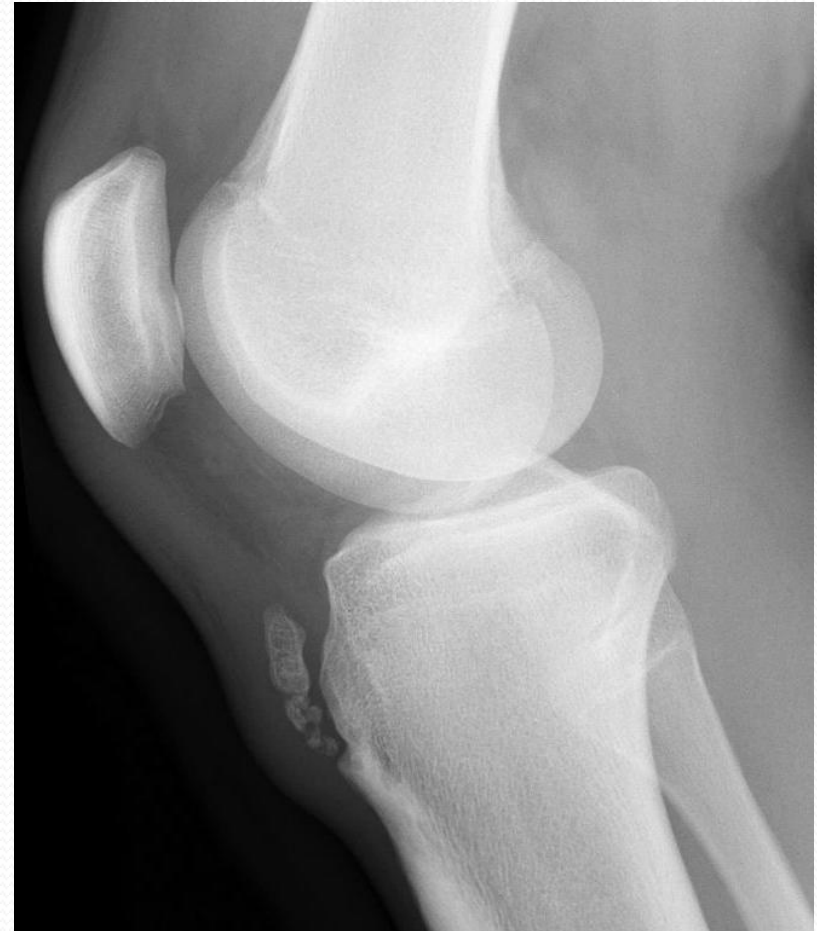
Imaging options

- Plain films
- Ultrasound
- CT and CT arthrography
- MR and MR arthrography
- Nuclear medicine

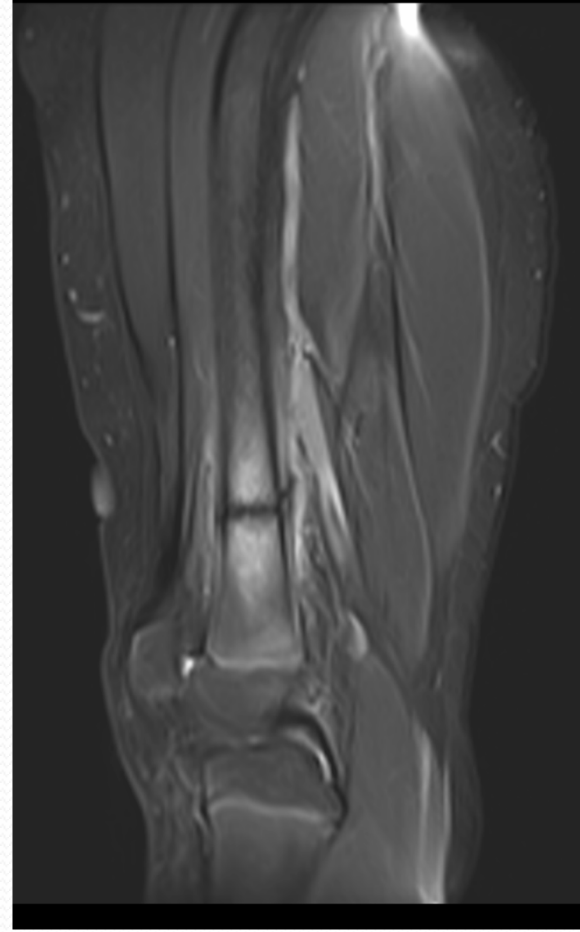
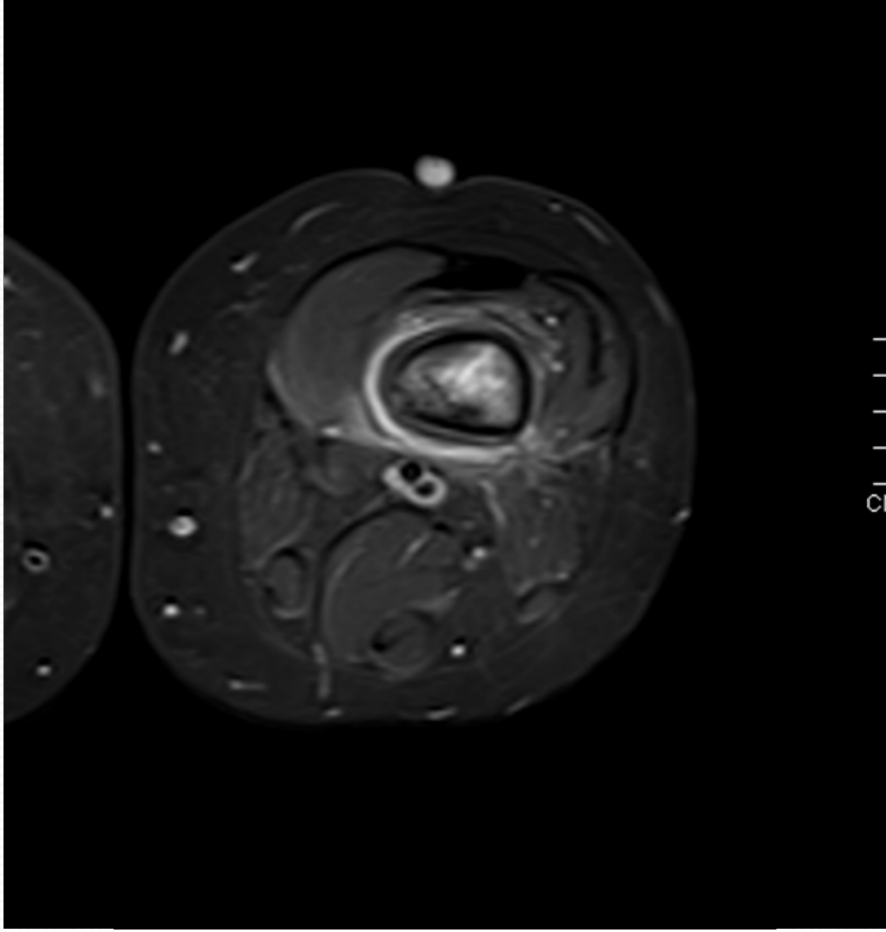


Plain films

- First imaging study
- Can be diagnostic
- Add information esp. with regards to osseous anatomy

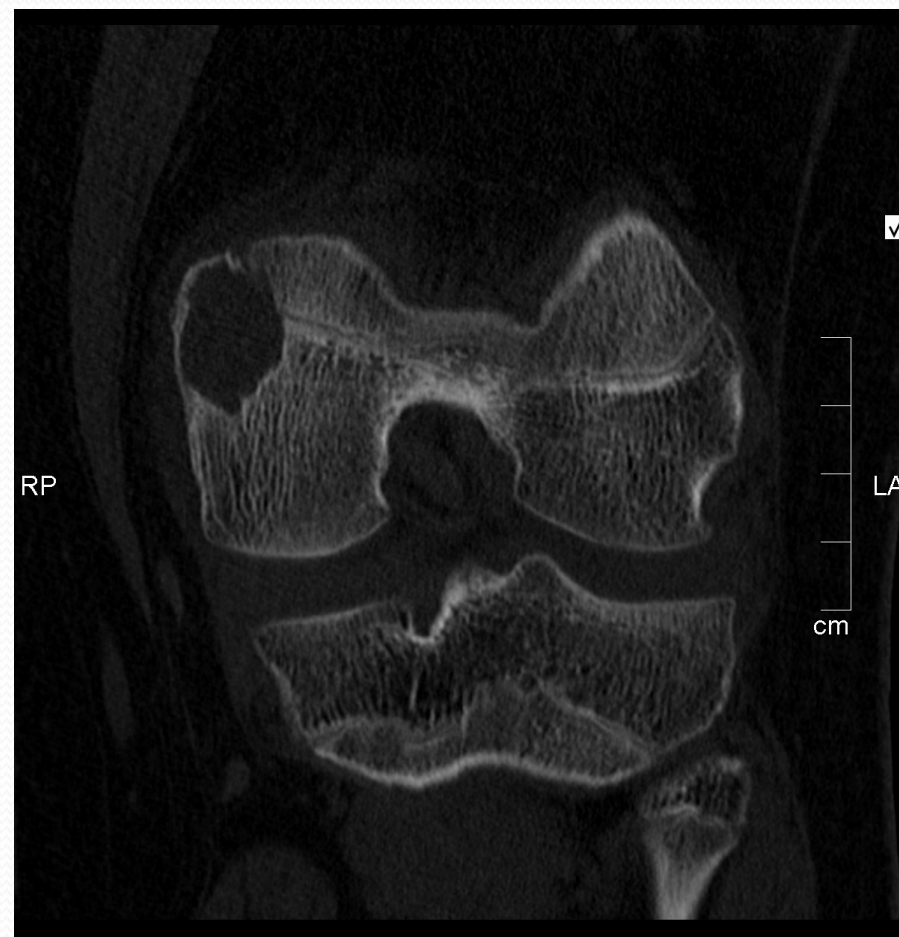
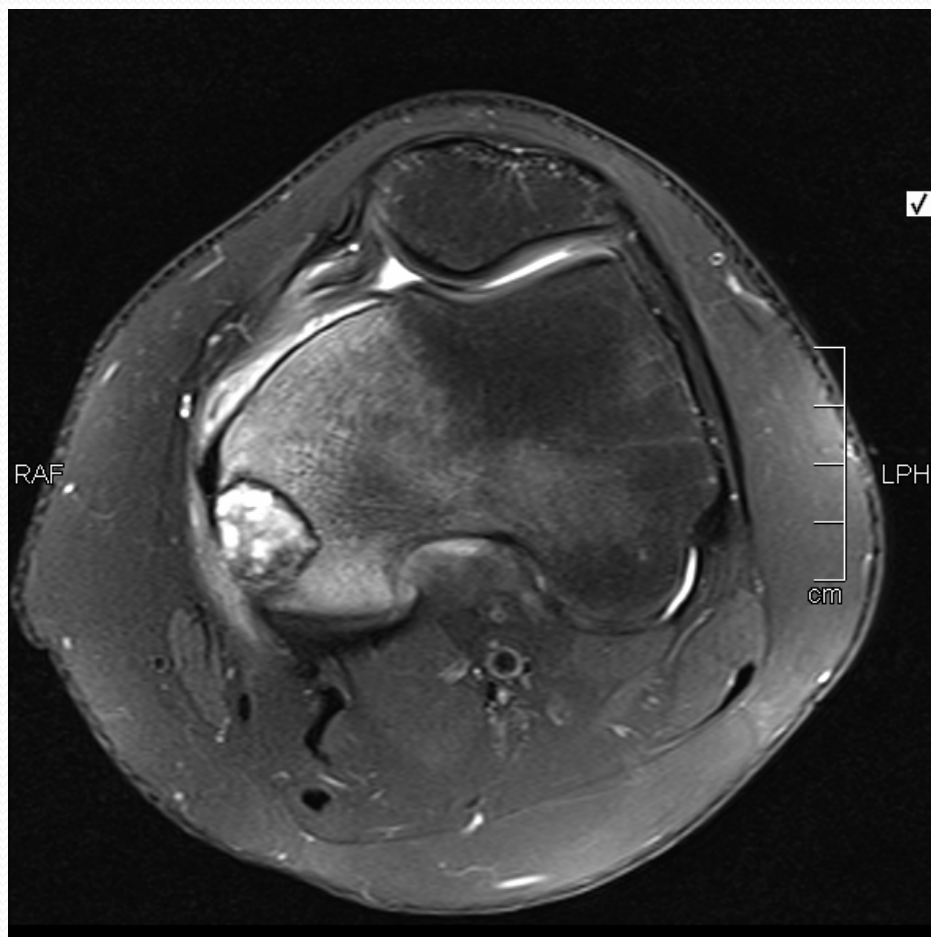






- 18 y/o male footballer with knee pain

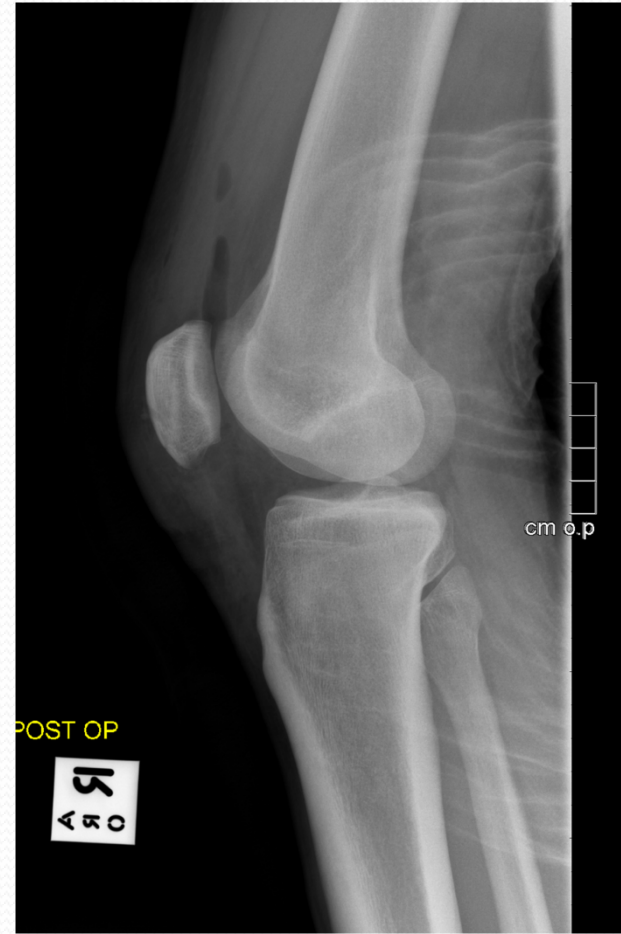






- 23 y/o gymnast with pain





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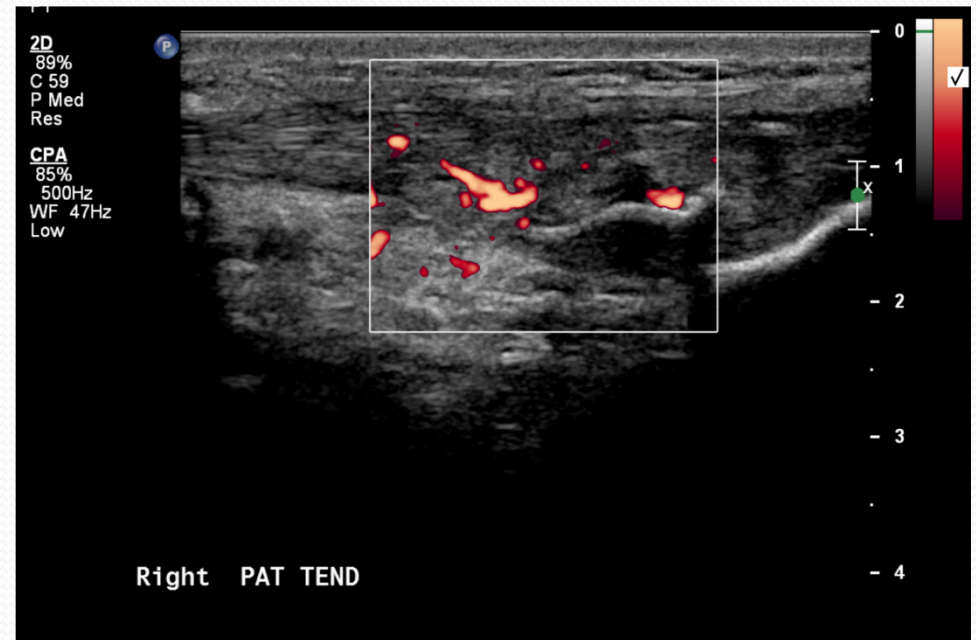
13 y/o boy complains of pain

Plain films can be diagnostic



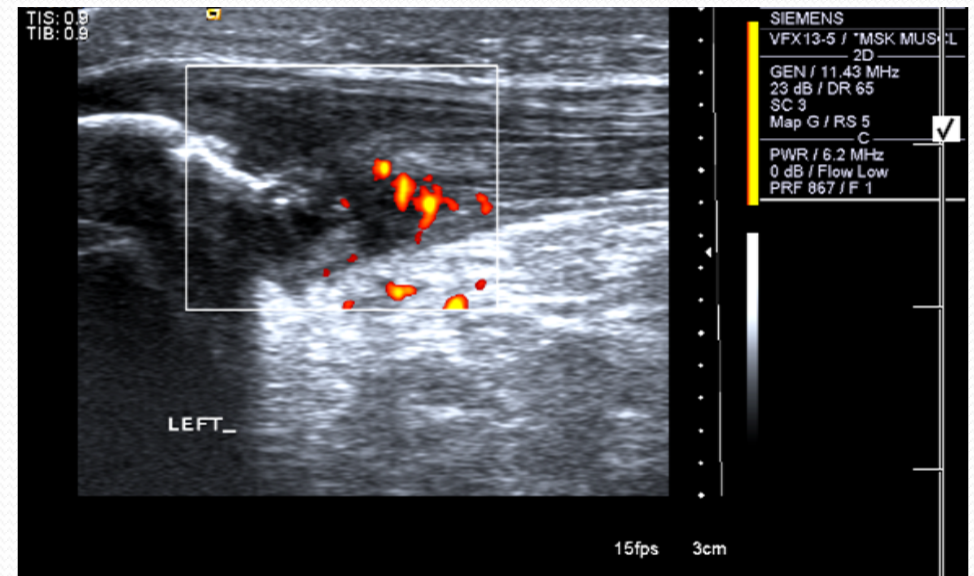
Ultrasound

- Success of US varies depending on the training and experience of the person performing the examination, as well as the ultrasound equipment.
- Dynamic imaging



Ultrasound

- 28 y/o volleyball player with pain

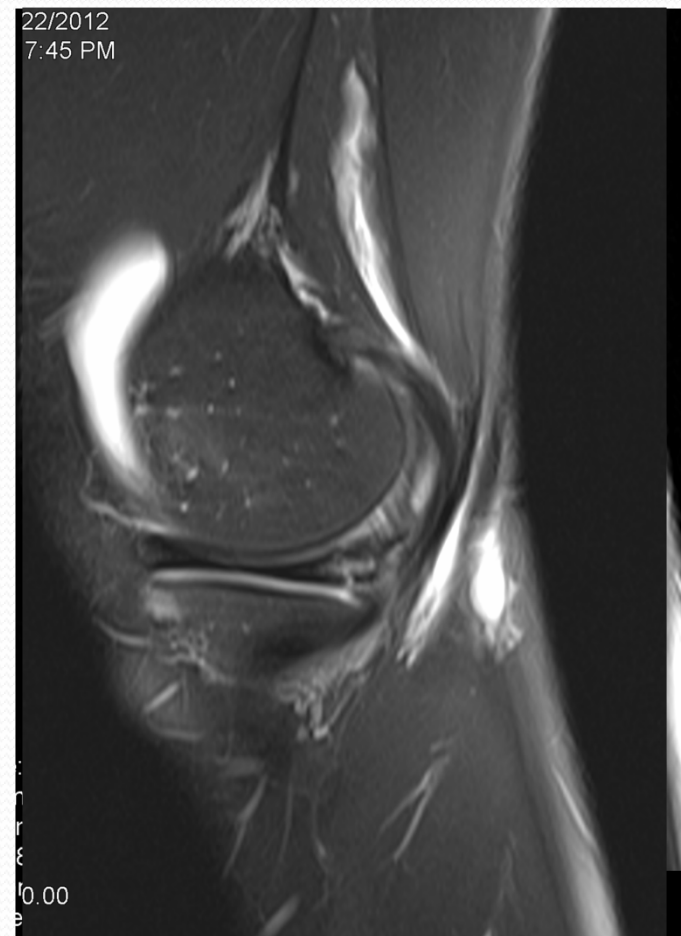
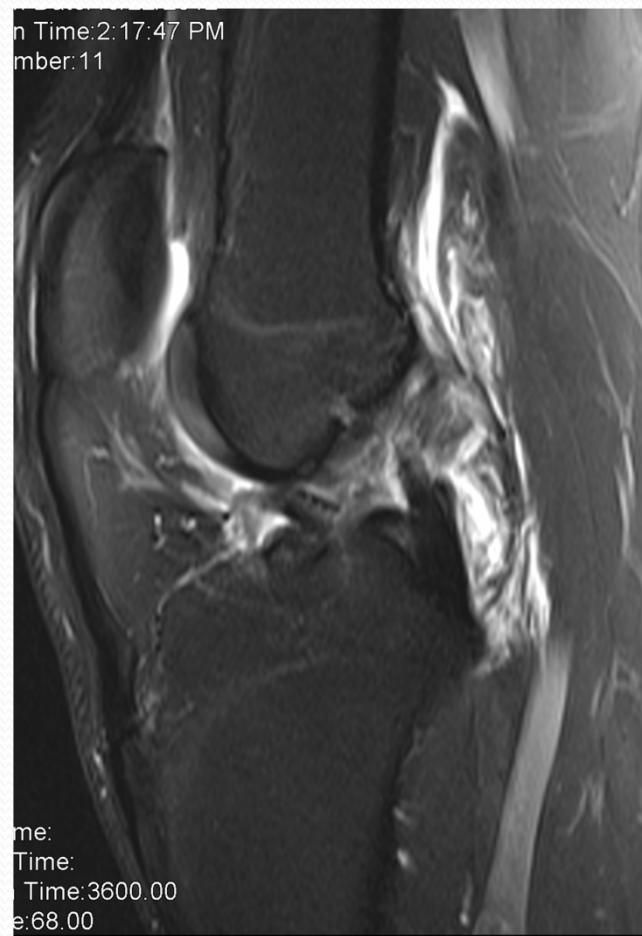


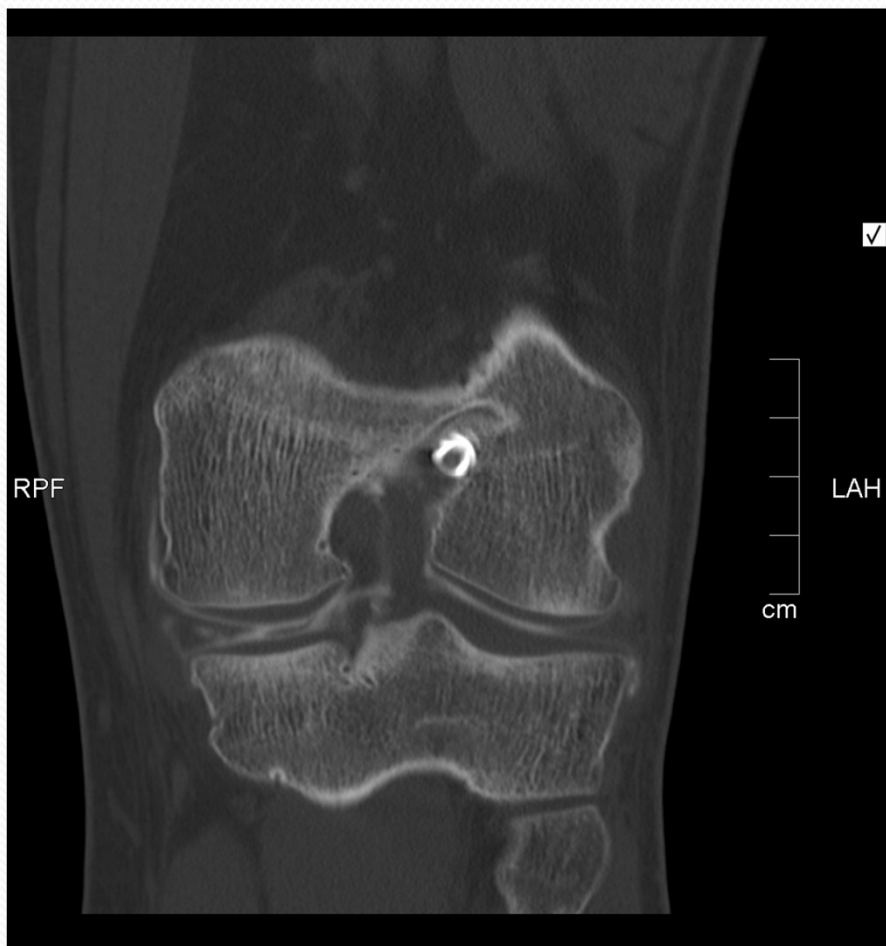
CT/CT arthrography

- CT arthro allows excellent assessment of cartilage surface and thickness
- Can be used when MR is not available or contraindicated
- Cannot assess purely intrachondral lesions and poor for soft tissue evaluation
- Radiation exposure is a weakness









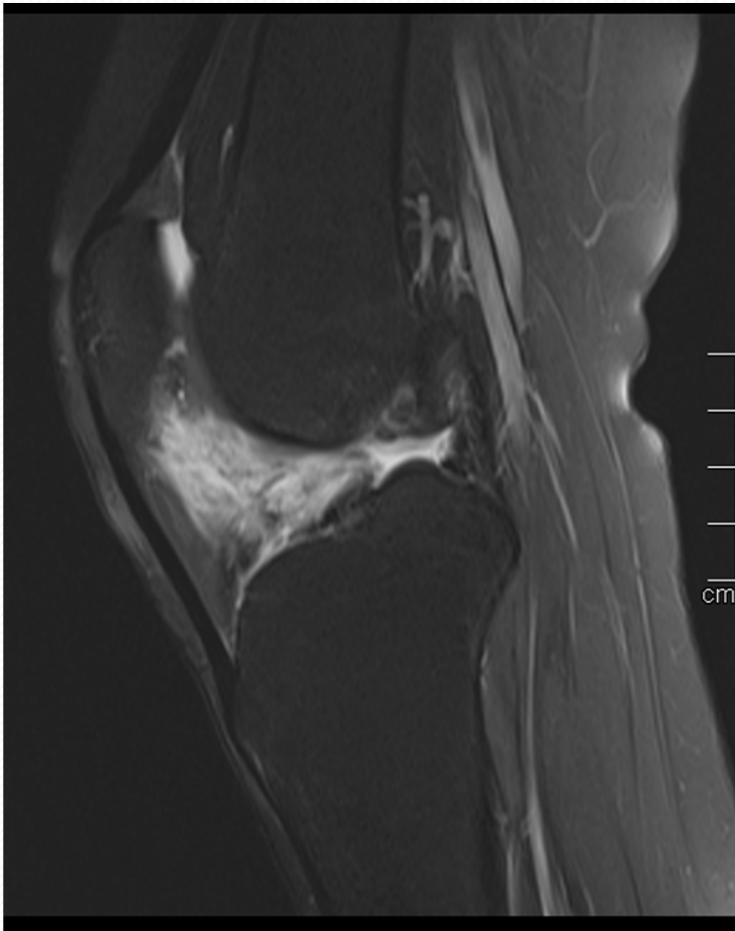
MR/MR athrography

- Modern high field MR imaging is an excellent diagnostic modality for the assessment of knee pathology.
- Excellent assessment of bony and soft tissue pathology, including intra and extra articular pathology



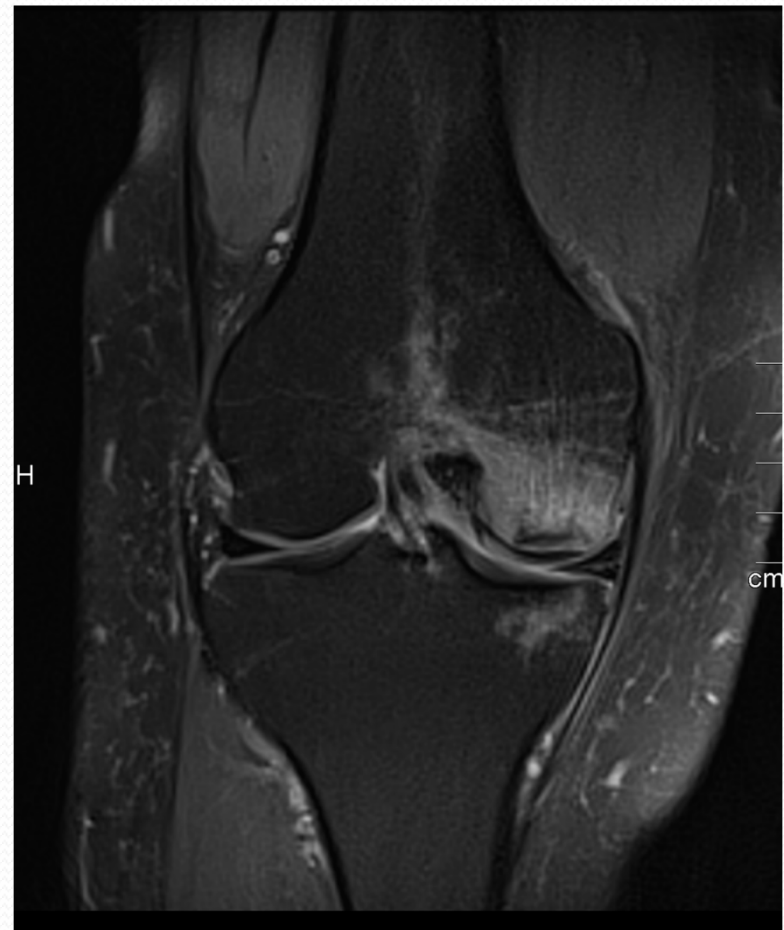
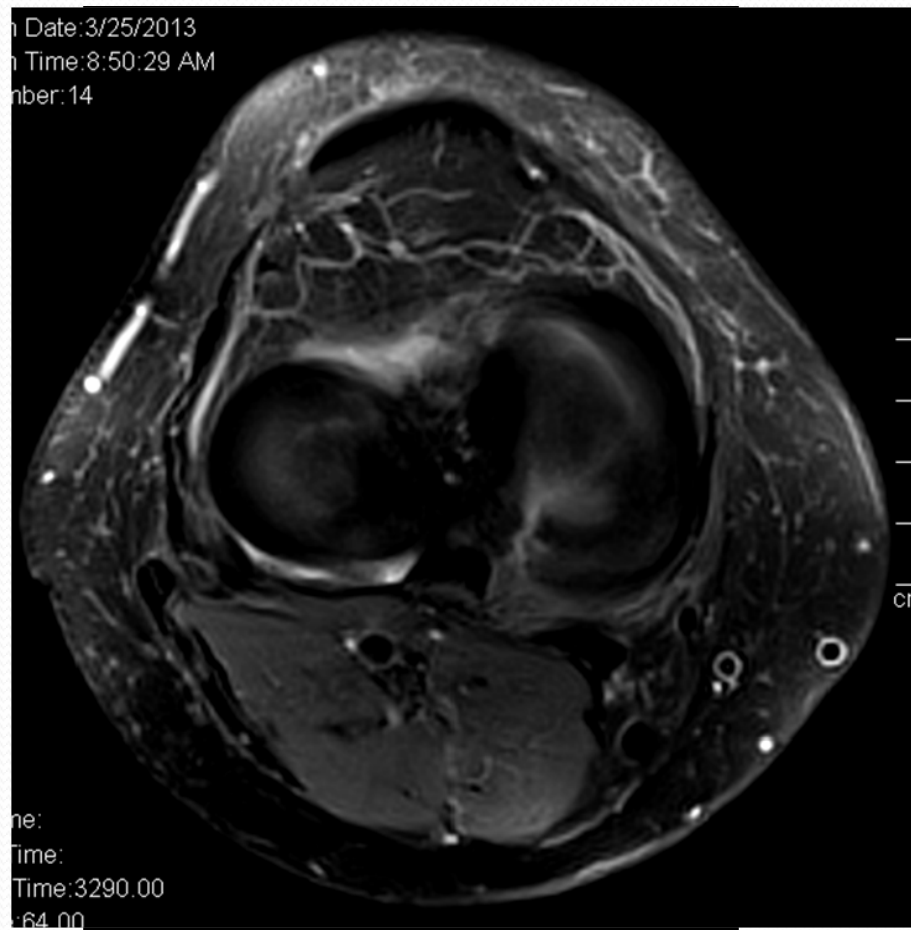
- 20 y/o female with long standing h/o knee pain

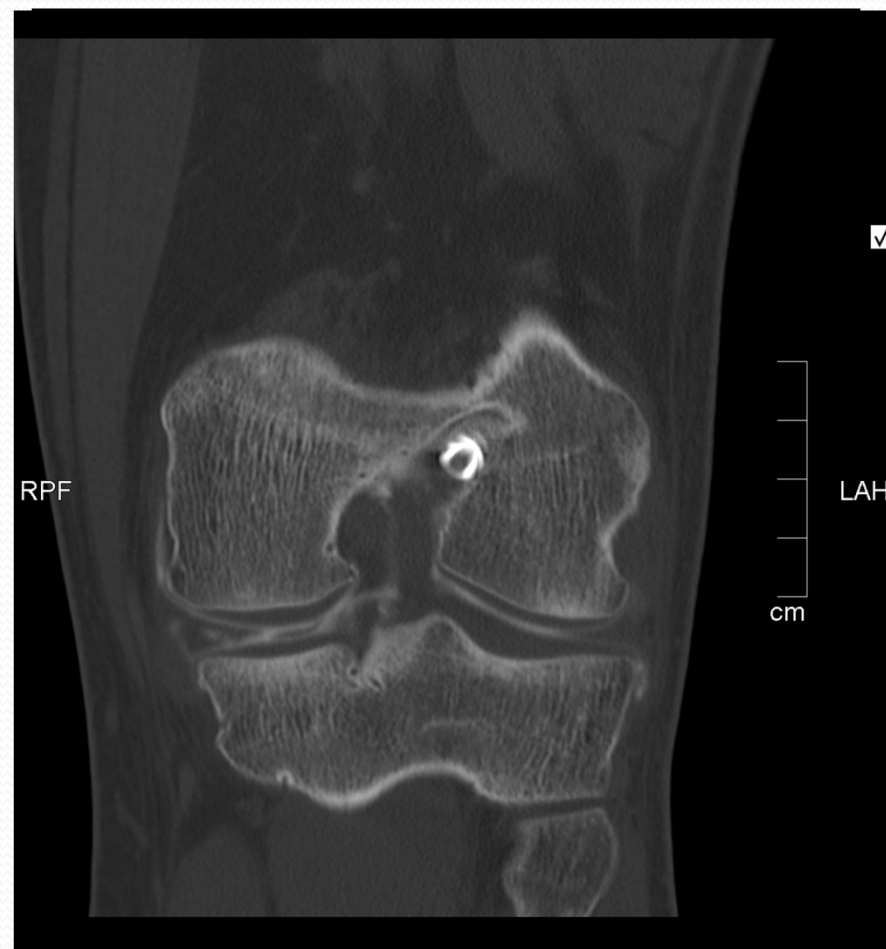




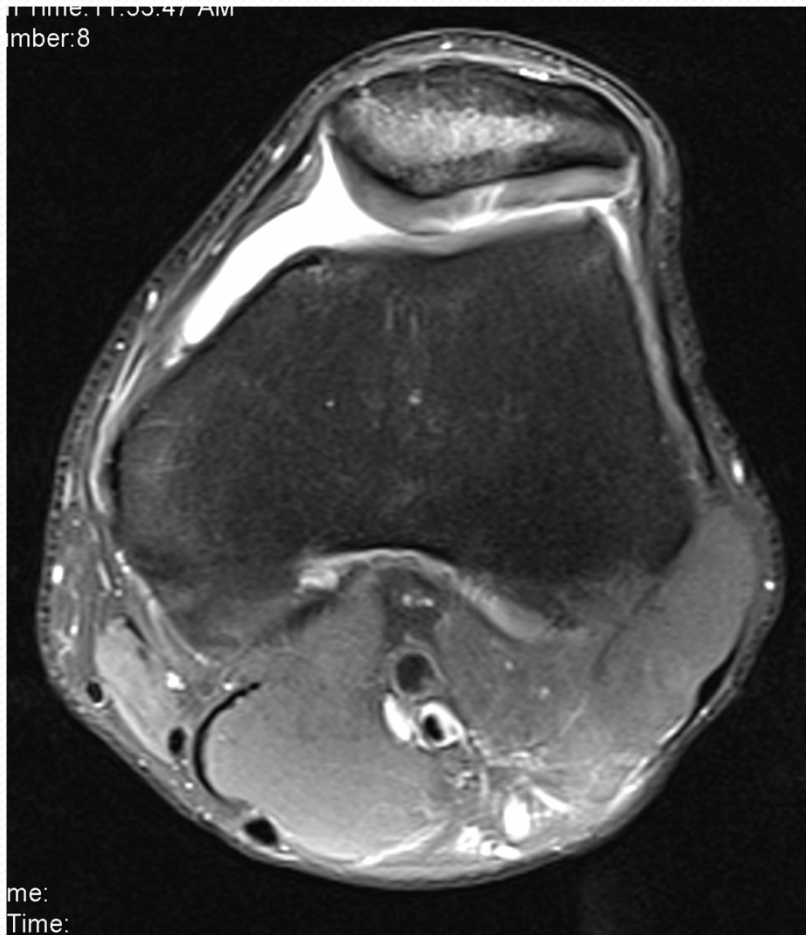
- 36 y/o male with knee pain







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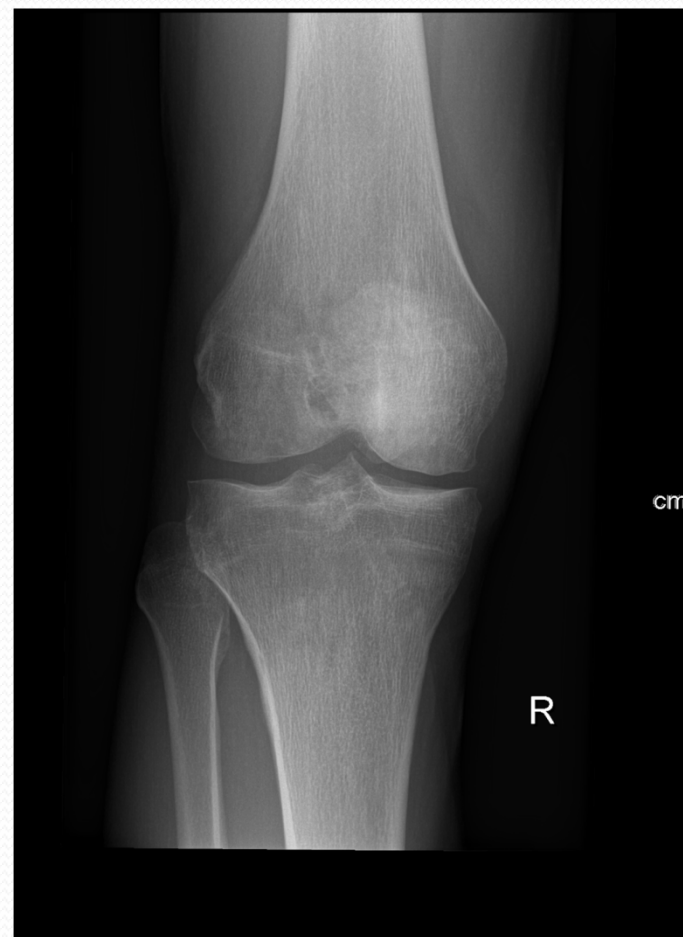


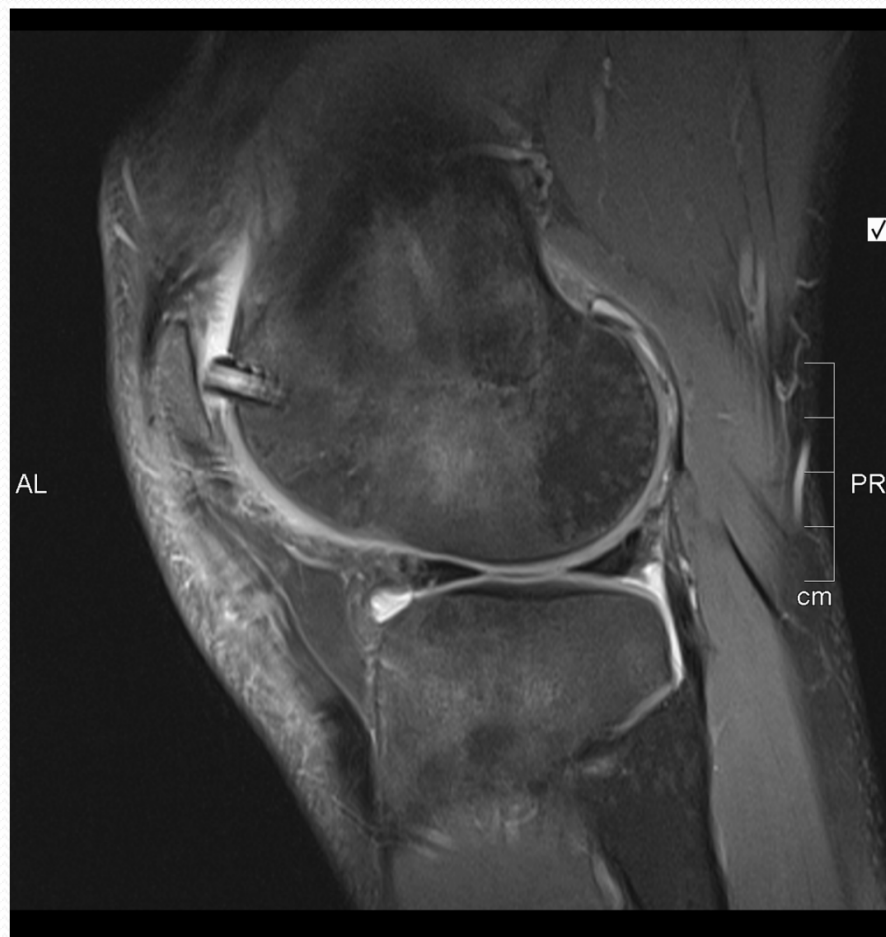
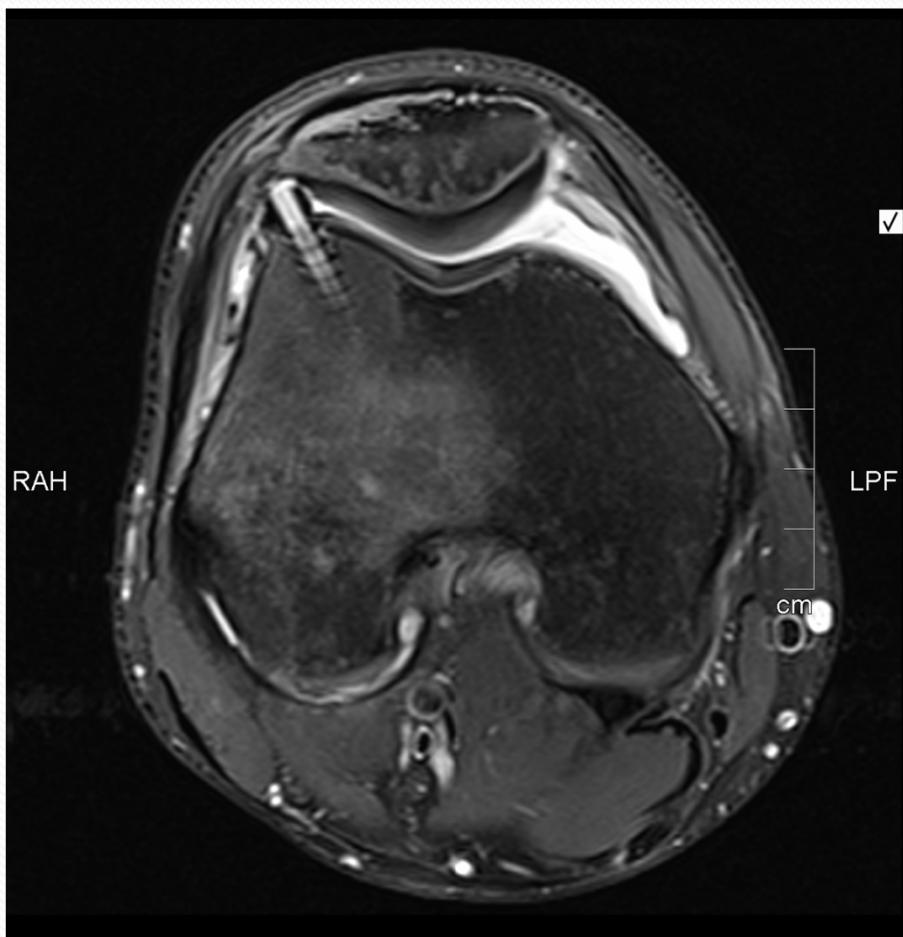
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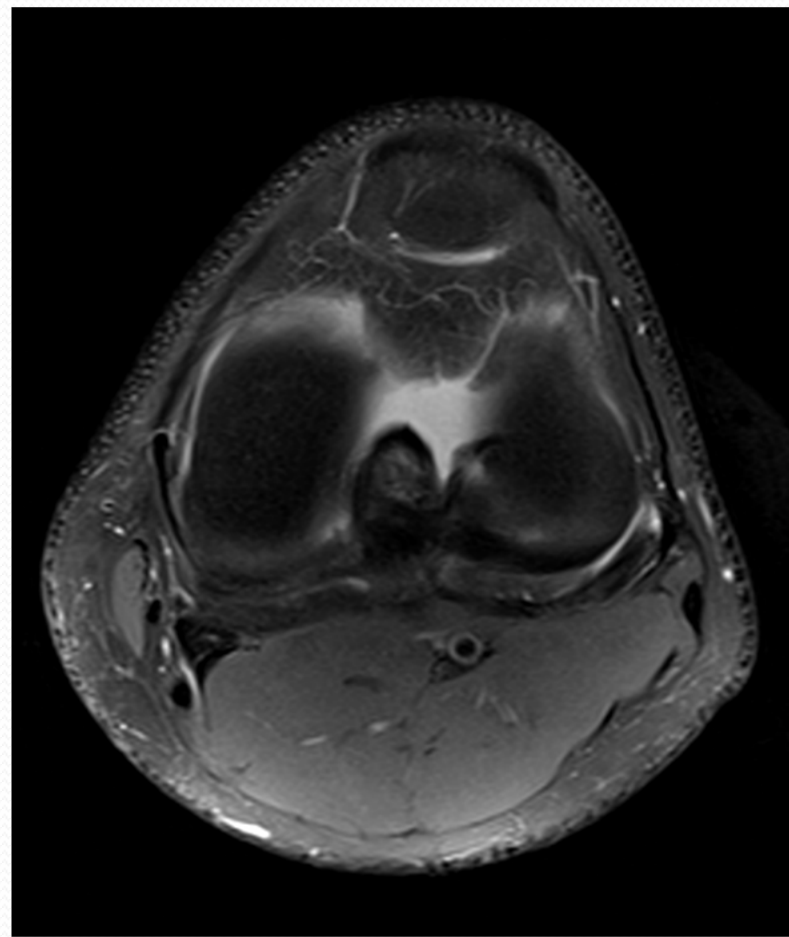


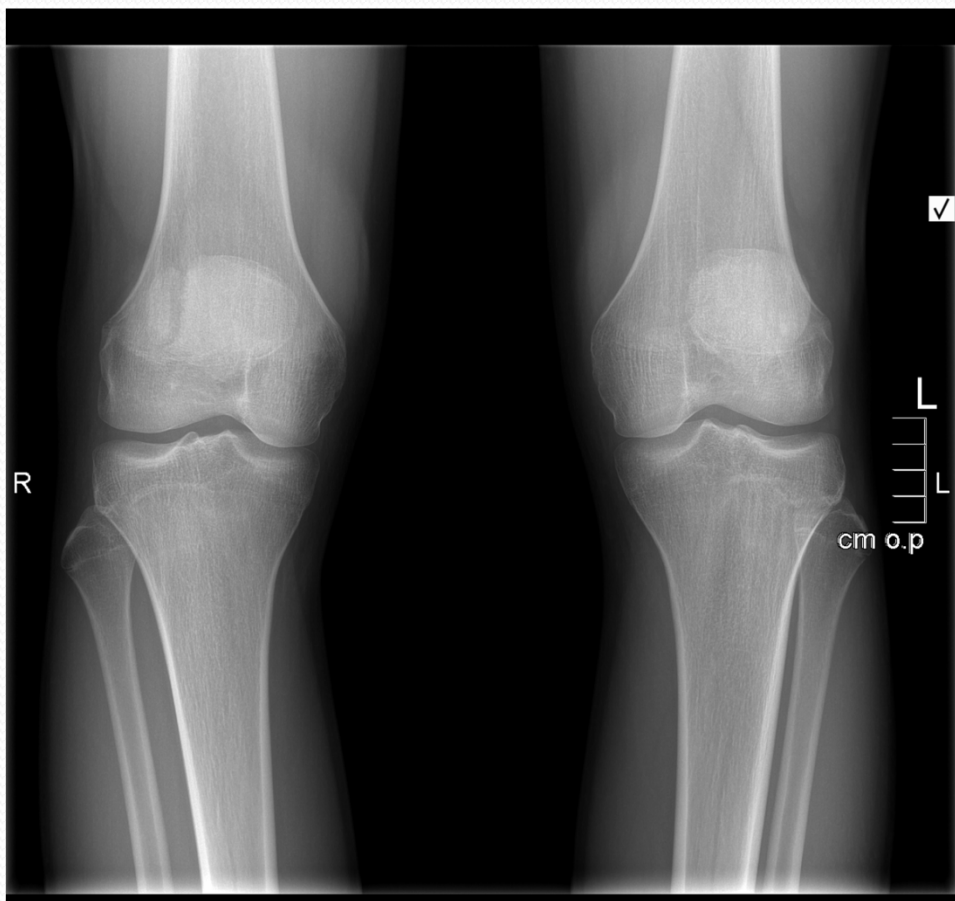




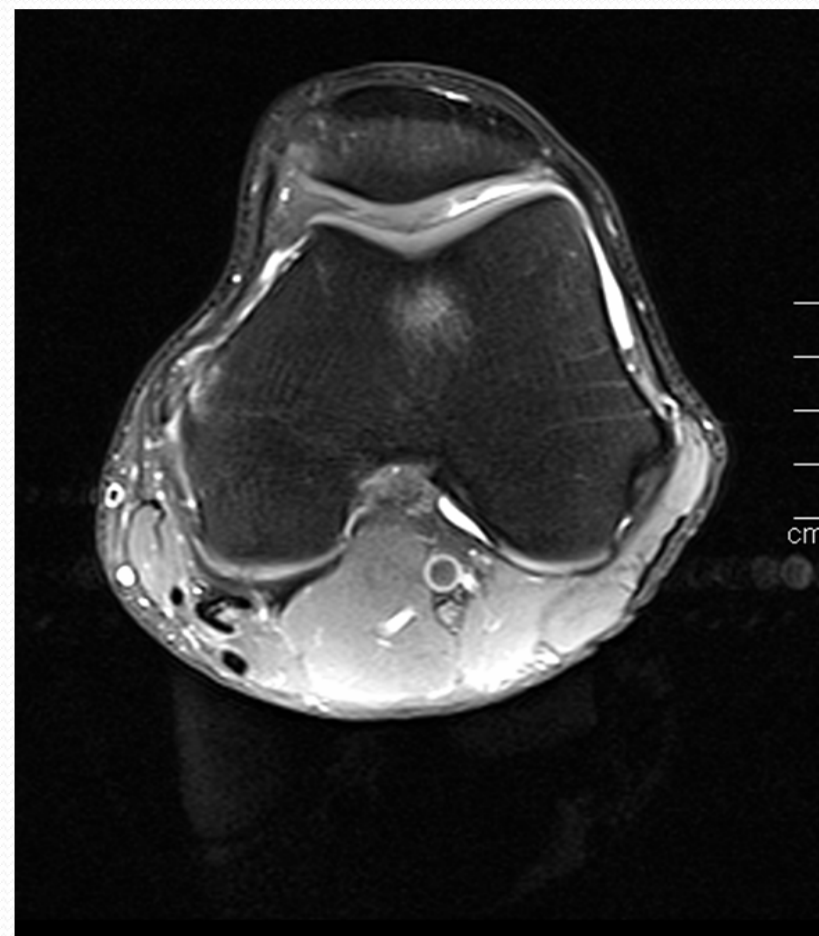
- 22 y/o male with a twist type injury











Conclusion

- Plain radiography remains an important modality in the evaluation of knee pathology.
- US is useful for evaluating the soft tissue structures particularly tendons and ligaments.
- CT can further show osseous abnormalities with multiplanar reformatted images and 3D surface rendering.
- MRI is a powerful tool for assessing both the soft tissue and bony structures .



Thank You