

**70 M presents with knee catching/locking - MRI contraindicated (cardiac device) so proceeded to CT arthrogram**

Procedure:

- Fluoroscopic guidance 40 mls of dilute contrast and air injected into the knee joint (double-contrast CT arthrogram)
- Mobilise for several minutes (to disperse contrast / coat articular surfaces)
- CT Suite for axial contiguous imaging with reformations

Findings:

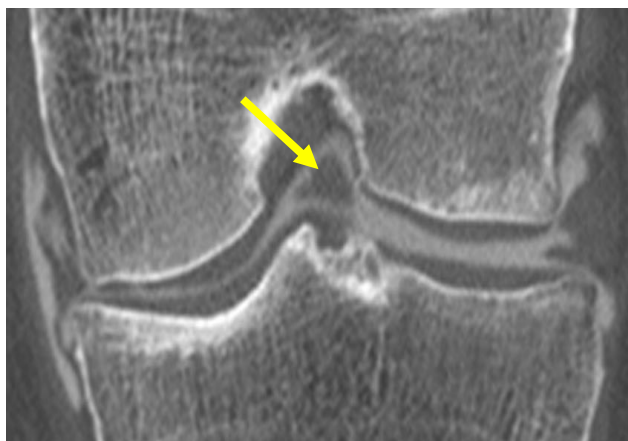
- Vertical cleavage plane coursing through posterior horn lateral meniscus (**Fig I & II**)
- Contrast separates the pieces of fibrocartilage and extends obliquely into the lateral meniscal body (**Fig I & II**)
- Large bucket-handle tear fragment from medial meniscus displaced into the intercondylar notch (**Fig III & IV**)
- Tearing through the peripheral remnant medial meniscus (**Fig V**)
- Chondropathy
- Joint fluid decompresses into a 4.5 cm popliteal/Baker cyst (**Fig VI**)



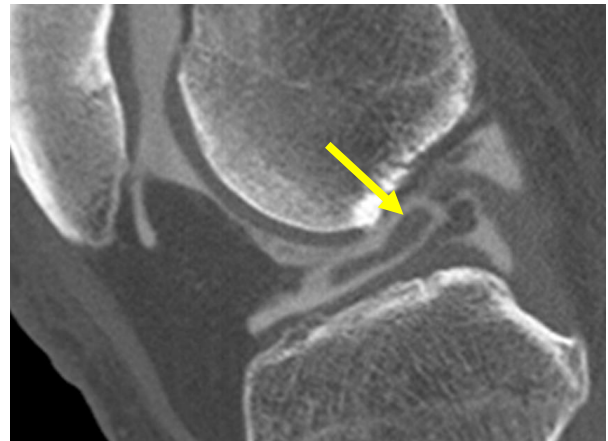
**Figure I**



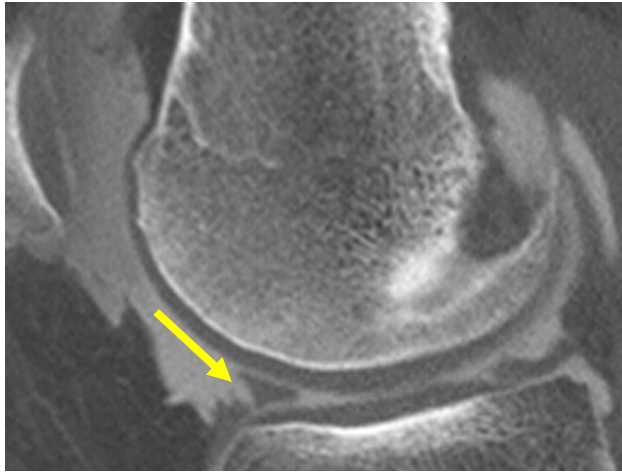
**Figure II**



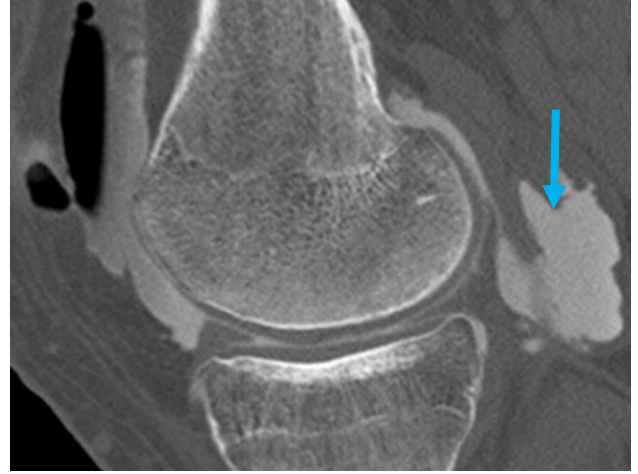
**Figure III**



**Figure IV**



**Figure V**



**Figure VI**

## Discussion

- This case highlights the effectiveness and diagnostic accuracy of single/double-contrast arthrography technique
- CT arthrography usually employed when MR not possible
- Fast scanning capability
- Allows good / similar visualisation of torn ligaments, torn fibrocartilage and hyaline cartilage defects/chondropathy
- Inferior soft tissue detail compared to MR
- Excellent spatial resolution and inherent high contrast b/w contrast and cartilage and b/w cartilage and bone, CT arthrography is an excellent tool for evaluating hyaline cartilage defects
- High accuracy in the postoperative meniscus (and for rotator cuff and labral lesions of the shoulder)
  
- Indications include:
  - Claustrophobia precluding MRI
  - Contraindications to MRI
  - Evaluation of the postoperative joint with significant intra-articular metal
  - Evaluation for calcified structures within the joint in addition to internal derangement
  
- Recent recommendation from the MBS task force to **restrict GP referred MRI of the knee to patients under the age of 50 years old from November 2018** means that CT knee arthrography may a useful alternative in this group.

## Further Reading:

De Filippo M, et al. Multidetector Computed Tomography Arthrography of the Knee: Diagnostic Accuracy and Indications. *Eur J Radiol* 2009; 70:342-351.  
 Toms AP, et al. Imaging the Post-Operative Meniscus. *Eur J Radiol* 2005; 54:189-198.  
 Kalke RJ, et al. MR and CT arthrography of the knee. *Semin Musculoskelet Radiol*. 2012 Feb;16(1):57-68.