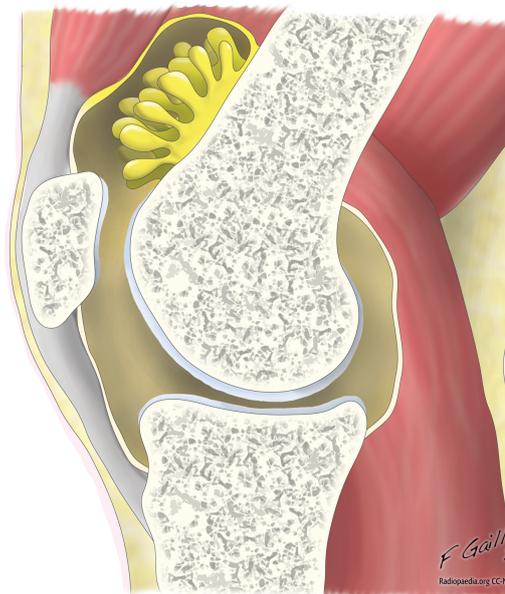
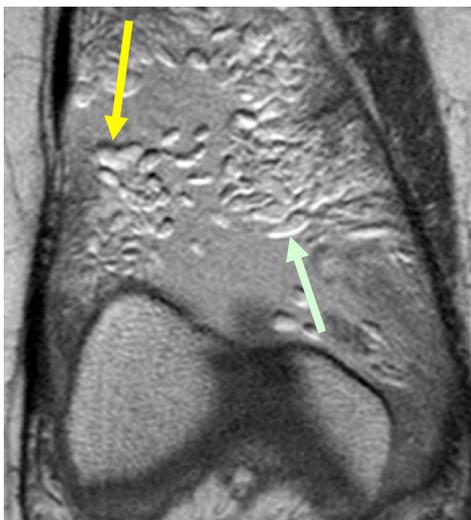
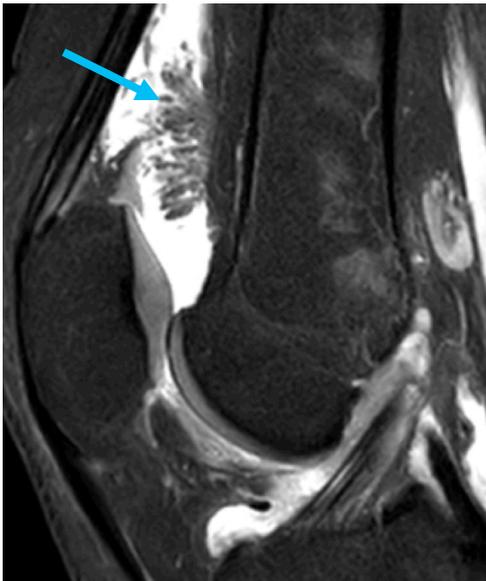


46F with joint swelling/ effusion on a background of seronegative rheumatoid arthritis.

Findings:

- Frond like proliferation in the suprapatellar joint recess.
- Follow fat signal on PD and PD fat sat sequences.
- Large joint effusion.



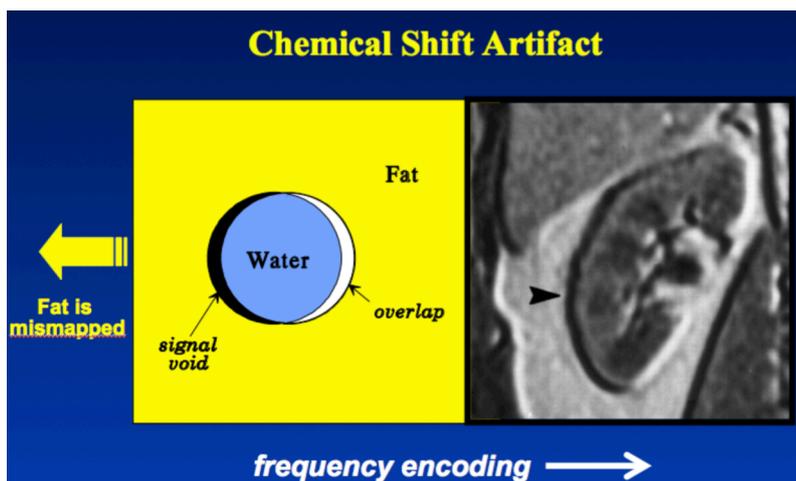
Top left and right: Proton density weighted (PD) and PD fat sat sagittal sequences demonstrate frond-like proliferation in the suprapatellar joint recess, which follows fat signal.

Bottom left: PD coronal sequence without fat saturation, demonstrate fronds, with both black margin (yellow arrow) and white margin (green arrow), in keeping with chemical shift artefact. This is due to mismatching of fat in the frequency encoding direction when adjacent to water.

Bottom right: Case courtesy of A.Prof Frank Gaillard, Radiopaedia.org, rID: 7631

Discussion:

- **Aetiology:**
 - **Lipoma arborescens** is an idiopathic joint disease characterised by benign proliferation of mature fat cells.
 - Almost always associated with an underlying joint disease such as osteoarthritis, rheumatoid arthritis or previous trauma.
 - Thought to represent a reactive response to chronic synovial irritation.
 - Diabetes and steroid use have also been described
 - Originally described by Hoffa, the macroscopic frond-like appearance was thought to resemble a tree in leaf; hence the Latin term, arborescens (meaning “treelike”).
- **Epidemiology:**
 - Typically occurs in patients in the 5th – 7th decade, without gender predilection.
- **Clinical presentation:**
 - Over 90% of cases occur in the knee
 - Characterised by joint swelling/effusion.
 - Limitations in range of movement and pain are not seen very often.
- **Imaging:**
 - X-ray: occasionally may see fatty lucencies within a soft tissue lesion. Underlying degenerative joint disease.
 - Ultrasound: Joint effusion with echogenic frond-like projections
 - MRI
 - Fat containing frond-like villi projecting into the joint from the synovium.
 - High signal on T1 and T2, with suppression on all fat-saturated sequences.
 - Absence of magnetic susceptibility artefacts attributable to hemosiderin (PVNS).
- **Differential diagnosis:**
 - Usually straight forward diagnosis on MRI
 - Other conditions that cause filling defects in the suprapatellar recess include:
 - Loose bodies
 - Osteochondromatosis
 - Pigmented villonodular synovitis (PVNS)
 - “Rice bodies” in rheumatoid arthritis
 - Intra-articular Lipoma



Graphic: <http://mriquestions.com/chemical-shift-artifact.html>

Further Reading:

Coll JP, Ragsdale BD, Chow B et al Best Cases from the AFIP: Lipoma Arborescens of the Knees in a Patient with Rheumatoid Arthritis. RadioGraphics. 2011. 31(2), 333–337.

Tsifountoudis I, Kapoutsis D, Tzavellas AN, et al. Lipoma Arborescens of the Knee: Report of Three Cases and Review of the Literature. Case Reports in Medicine, 2017, 1–9.