

## KNEE CASE STUDY

# Chronic pain with locking 14 year old student



### Introduction:

- Jane is a 14 year old student.
- She is fit, active, loves netball and long distance running.
- She presents with several months of intermittent knee pain and locking without recall of specific injury. The symptoms are increasing in frequency and impacting on the amount of physical activity she would like to perform.
- Jane attends your clinic after a painful episode of locking.
- On examination, there is a moderate knee joint effusion with limitation of knee extension.

### What are the possible causes of Jane's pain?

The major possible causes for acute pain with locking include an intra-articular loose body which may reflect a displaced meniscal tear or osteochondral body.

### Are there any specific questions that you would ask in the history?

A history of acute trauma may favour a displaced meniscal tear although this is not exclusive. The intermittent locking can occur in both conditions but when associated with an insidious onset, without trauma, suggests chondral wear with loose chondral body.

### What specific examination findings would you try to demonstrate?

Specific clinical signs to search for include the following

1. Is there a joint effusion?
2. Assess for a meniscal tear. Is there a positive McMurray's sign?
3. Assess passive and active flexion and extension for signs of locking.
4. Is the patient able to weight bear? Are there clinical findings of a fracture?

### What investigations, if any, would you suggest?

X-ray and MRI

### What are the advantages and disadvantages of the different imaging modalities?

The main indication for an x-ray in this clinical setting is to assess for the presence or absence of an intra-articular calcified/ossified body and also exclude a fracture. An x-ray will assess the joint space and demonstrate the presence of a joint effusion. Ultrasound does not have a role as it will only demonstrate an effusion. It cannot assess the menisci or cartilage.

While CT can assess for a calcified or ossified intra-articular body, it cannot assess for displaced meniscal tears and also exposes the patient to unnecessary radiation, particularly important in this age group.

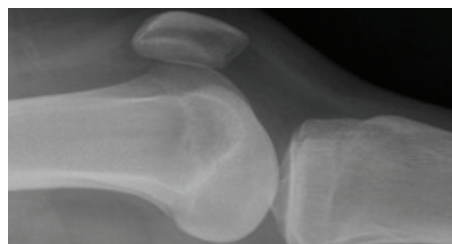
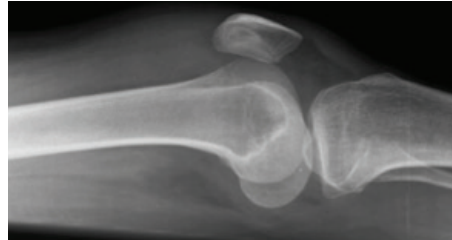
MRI is the best investigation in this clinical setting. MRI is able to assess for an effusion, loose body, meniscal integrity and articular cartilage abnormalities or defects.

*Continued overleaf*

# Chronic pain with locking: 14 year old student

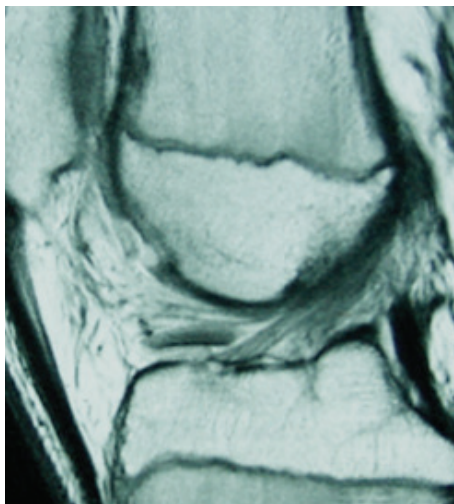


### What does the x-ray show?



### What does the MRI show?

The MRI confirms the presence of an intra-articular osteochondral fragment lying in the anterior synovial recess with a corresponding sized defect in the trochlear articular surface.



### What are the management options for osteochondral defect with loose body?

#### What are the general principles in Jane's short term and long term management?

This patient needs an arthroscopy to remove the loose body as it can damage the articular cartilage if it continues to cause locking as well as the obvious inconvenience.

Visualisation and debridement of the defect can also be carried out.

Post-op quadriceps strengthening is important and possible avoidance on impact loading activities for a while depending on the severity of the trochlea lesion.