



GP guide for the imaging of patients with knee problems

MRI is the examination of choice for the investigation of suspected ligament or meniscal injury. Advantages of MRI are that it is non-invasive, it does not use ionizing radiation and it provides images of soft-tissue structures. It is a well-proven and widely accepted test, with a high sensitivity for detecting meniscal and cruciate ligament injuries.

MRI should be used in patients in whom surgical treatment, ie. arthroscopy, is being considered as a significant number of unnecessary arthroscopies may be prevented when preceded by an MRI examination. MRI is also useful in the evaluation of bursitis, bone bruising, avascular necrosis and chondromalacia.

Referral Guidelines

Presenting Complaint	Imaging Guidance
Knee pain without trauma, locking or restriction of movement	<p>MRI is useful in patients with persistent undiagnosed pain of the knee, including suspected avascular necrosis and sepsis.</p> <p>Ultrasound is useful for anterior knee pain with suspected tendinopathy or associated bursitis.</p>
Knee pain with locking	<p>MRI is the investigation of choice to identify meniscal tears and loose bodies.</p>
Knee trauma	<p>When blunt trauma or a fall is the mechanism of injury, X-ray is indicated when the patient is <12 or > 50 years of age, or if the patient is unable to walk 4 weight-bearing steps.</p> <p>MRI may be helpful for suspected injury of the ligament/menisci.</p> <p>Ultrasound may be helpful for injury of the extensor mechanism.</p>

How do I refer a patient?

Complete an MRI referral form which you can download from our website www.inhealthgroup.com or request via email to info@inhealthgroup.com. Please specify the presenting complaint and relevant past medical history, and indicate which area is to be investigated on the form.

Please return the completed form by fax to **0844 581 0305** or by secure email to INL.inhealthreferrals@nhs.net. Once we have received the referral form we will contact your patient to book a suitable appointment time.

Presentation

Patients with meniscal injury may report a history of twisting injury while bearing weight. Symptoms may include locking or catching, with loss of motion related to a mechanical block.

Ligamentous injury may be due to a direct blow or forceful stress while the patient is bearing weight. In tearing of the anterior cruciate ligament, the patient may report having heard a pop at the time of injury, followed by swelling. Valgus and varus stresses may lead to collateral ligament injury. More than one injury can coexist and meniscal tears may be associated with anterior cruciate ligament injury.

Always describe the clinical findings on the referral form so that we can confirm that the requested imaging is appropriate. Occasionally our triage team will phone you to suggest a more appropriate test for your patient. This is to ensure that every patient has the test most likely to result in a correct diagnosis.

History

Consider the mechanism of injury, and previous symptoms, general health, age and activity:

- Was onset of pain gradual or acute? Osteoarthritis comes on over years; anterior cruciate ligament injuries cause immediate pain.
- If acute, was there trauma?
- If there was trauma, what exactly happened? If injury occurred in sport or an accident get a precise history of the mechanism. Was there a direct blow causing valgus or varus stress? Was there a twisting motion?

- Was there any sound? A 'popping' or 'snapping' sound may suggest rupture of a ligament.
- Did the knee swell immediately, gradually, or not at all? Rapid swelling (0-2 hours) suggests haemarthrosis which may be due to ACL or PCL rupture, or patellar dislocation. Gradual swelling (6-24 hours) suggests an effusion which may be due to meniscal injury.
- What was the degree of pain and disability at the time of injury? How does this compare to the current situation?
- Does the knee lock or click? This suggests a loose body and may be due to meniscal injury.
- Does the knee give way? This suggests instability (e.g. ACL injury) or muscle weakness.
- Has the patient attended A&E? They may have been X-rayed to exclude fracture.
- Does the patient have a previous history of knee injury?
- What are the patient's past medical history, occupation and level of exercise?

Examination

Examine the knee for effusion, tenderness, range of movement and stability. Watch the patient standing and walking and remember the hip and ankle as a source of referred pain.

A number of specific tests can be used to investigate the individual structures of the knee. A useful guide is available at www.patient.co.uk : Guide to Knee assessment (history and examination).

References

Referral Guidelines – Making the best use of clinical radiology services. Royal College of Radiologists, 6th Edition, 2007

Framework for Primary Care Access to Imaging – Right Test, Right Time, Right Place. Royal College of Radiologists and Royal College of General Practitioners, 2006