

# Quadriceps fat-pad impingement syndrome: MRI findings

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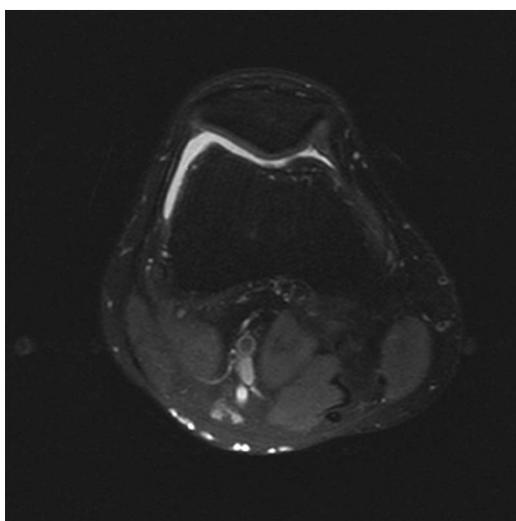
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## DESCRIPTION

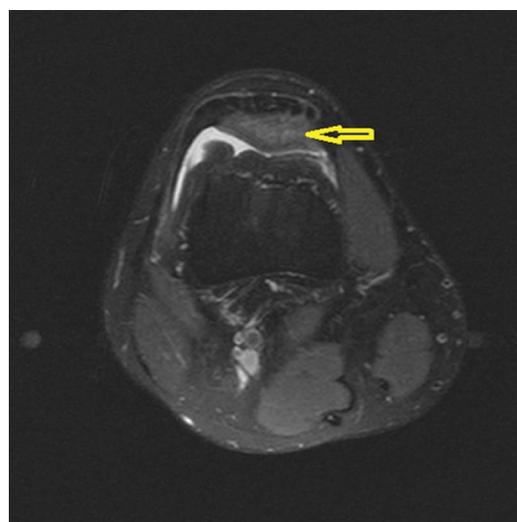
A 32-year-old man was referred to a radiology department for intermittent anterior knee pain and swelling for approximately 6 months. The patient denied any history of major trauma, fracture or infection. MRI was performed to diagnose the cause of knee pain. The axial view of MRI revealed increased patellofemoral joint effusion and the sagittal view of T1-weighted, and T2-weighted MRIs showed an oedema, increased intra-articular fluid and thickening of suprapatellar fat pad

(figures 1 and 2). Also, oedema of quadriceps fat impingement is visible at both coronal and axial fat sat T2-weighted sections.

Knee pain is a very common clinical complaint. Generalised pain in the front of knee has many causes. Numerous traumatic and non-traumatic processes may be encountered, many occurring relative to the anterior compartment, including fat-pad impingement syndromes. Three normal anterior knee fat pads are present at the knee which separates joint capsule and synovium; the



**Figure 1** The axial T2 fat sat image demonstrates increased intra-articular fluid.



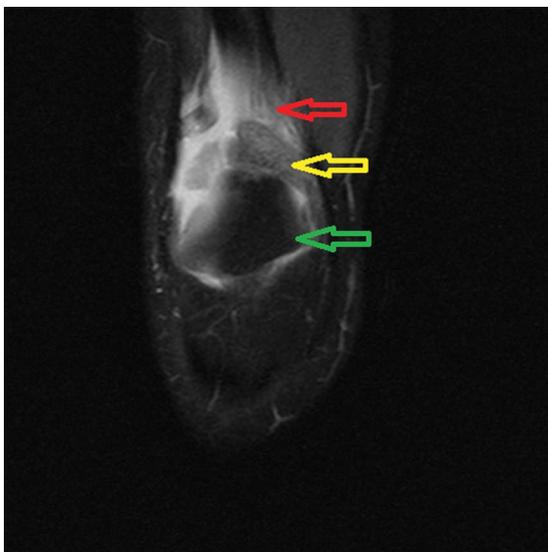
**Figure 3** Quadriceps fat pad (arrow) is hyperintense on the sagittal T2 fat sat image (A) and hypointense on sagittal T1 image (B).



**Figure 2** The axial T2 fat sat image demonstrates increased signal and thickening (arrow) within fat interposed between the quadriceps tendon and the suprapatellar bursa.



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**Figure 4** The coronal T2 fat sat image demonstrates increased signal within the quadriceps fat pad and mild effusion surrounding (patella=green arrow, quadriceps fat pad=yellow arrow, effusion=red arrow).

quadriceps (anterior suprapatellar), the prefemoral (posterior suprapatellar or supratrochlear) and Hoffa (infrapatellar) fat pads.<sup>1 2</sup> The quadriceps fat pad is the normal fat pad between the suprapatellar recess posteriorly and quadriceps tendon anteriorly. The term 'quadriceps fat-pad impingement' has been used to

describe an inflammatory process within the anterior suprapatellar fat, manifested on MRI as high T2 signal, low T1 signal and mass effect on the quadriceps tendon<sup>3</sup> (figures 3 and 4).

### Learning points

- ▶ Several entities with anterior knee pain that involve peripatellar fat may be encountered when evaluating MR of the knee. Of these, one of the most common is quadriceps/suprapatellar fat-pad impingement syndrome which may be related to chronic microtrauma.
- ▶ The term 'quadriceps fat-pad impingement' has been used to describe an inflammatory process within the anterior suprapatellar fat, manifested on MRI as high T2 signal, low T1 signal and mass effect on the quadriceps tendon.

**Competing interests** None.

**Patient consent** Obtained.

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