

Clinical Image

A 71-year-old male was referred to his orthopaedic surgeon with 6 months of sharp pain antero-laterally in the right knee, catching on flexion/extension, like having a “pebble” in the joint. It was exacerbated on hill climb and worse after a recent volleyball match, requiring frequent paracetamol and meloxicam for analgesia. He reported no “locking” of the knee. There was a history of significant anterior compression trauma to that knee 15-years previously from losing his footing while running upstairs. This was not investigated at the time and the injury settled conservatively, although there were subsequent episodes of moderate pain and swelling following vigorous exercise, managed with physiotherapy and analgesia. His past medical history was otherwise non-contributory. Positive findings on orthopaedic examination at this presentation were tenderness along the right lateral joint line, range of movement limited to 5-120 degrees and a small effusion on that side. Plain X-rays (Fig. 1A) and MRI (Fig. 1B) showed a 14x12x9mm corticated ossification lying within the infrapatellar (Hoffa's) fat pad, almost touching the antero-inferior aspect of the right lateral femoral condyle. There were also mild to moderate changes of osteoarthritis in the joint. He proceeded to arthroscopic removal of the osteochondral loose body (Fig. 2). Following this procedure, the incident sharp pain had disappeared.

Joint loose bodies can be classified histologically as chondral (type I), osteochondral (type II) and osseous (type III) [1], most commonly found in the shoulder and knee. They are a consequence of past trauma or underlying diseases such as osteoarthritis, osteochondritis dissecans, chondromatosis, chondral defect or rheumatoid arthritis. Asymptomatic lesions do not necessarily require intervention, but if symptomatic, failure of lifestyle modification, physiotherapy and pharmacological measures may necessitate arthroscopic removal [2]. In the knee, they typically occur in the synovial fluid, causing pain, swelling, intermittent locking and difficulty walking and can vary from a few mm to several cm in diameter. Hoffa's fat pad is a rare site for loose bodies, not routinely mentioned in reviews of pathology and/or radiology of this site [3,4]. Intracapsular and extrasynovial, Hoffa's fat pad is located posterior to the patellar tendon and joint capsule, inferior to the lower pole of the patella, antero-superior to the proximal tibia and anterior to the joint synovium and distal femur. Due to its rich innervation by branches from the femoral, common peroneal and saphenous nerves and with a high density of type IVa afferent nerve endings, it is a common source of anterior knee pain [4].

In the current case, it is noteworthy that the patient was able (in retrospect) to accurately identify the reason for his pain, as verified by its resolution after removal of the loose body. It is proposed that the original trauma caused displacement of a fragment of osteochondral material from the femoral trochlea

Hoffa's Fat Pad Loose Body: An Unusual Cause of Knee Pain

*Corresponding Author(s): **Daniel Roos**

Department of Radiation Oncology, Royal Adelaide Hospital, 1 Port Rd, Adelaide 5000, South Australia.

Email: daniel.roos@sa.gov.au

Daniel Roos^{1,2*}; Luke Mooney^{2,3}

¹Department of Radiation Oncology, Royal Adelaide Hospital, 1 Port Rd, Adelaide 5000, South Australia.

²School of Medicine, Adelaide University, Adelaide 5000, South Australia, Australia.

³Orthopaedics 360, 94/96C Fullarton Rd, Norwood, South Australia 5067, Australia.

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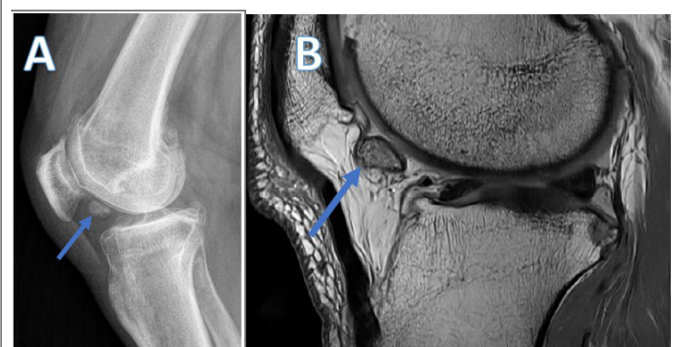


Figure 1: A: Plain lateral X-ray of the right knee (with arrow pointing to the loose body). **B:** MRI of the right knee, sagittal proton density fat saturation sequence (with arrow pointing to the loose body).



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or patellar surface, atypically into (or subsequently migrating into) Hoffa's fat pad, gradually growing as a mature osteochondral body (Fig. 3A & B) until large enough to become symptomatic.

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References

1. Saotome K, Tamai K, Osada D, Oshima F, Koguchi Y, Hoshikawa A. Histologic classification of loose bodies in osteoarthritis. *J. Orthopaedic Sci.* 2006; 11: 607-13
2. Zmerly H, Moscato M, Akkawa I. Assessment and management of loose bodies in the knee joint and related disease: A narrative review. *Curr. Rheumatol. Rev.* 2022; 18: 12-9.
3. Draghi F, Ferrozzi G, Urciuoli L, Bortolotto C, Bianchi S. Hoffa's fat pad abnormalities, knee pain and magnetic resonance imaging in daily practice. *Insights into Imaging* 2016; 7: 373-83.
4. Roemer F, Jarraya M, Felson D et al. Magnetic resonance imaging of Hoffa's fat pad and relevance for osteoarthritis research: A narrative review. *Osteoarthritis and Cartilage.* 2016; 24: 383-97.



Figure 2: Arthroscopic grasping instrument positioned for extraction of the lesion.

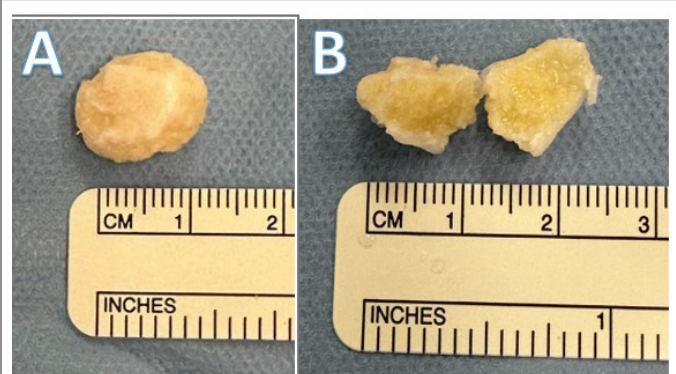


Figure 3: A: Intact lesion after removal. **B:** Bisected lesion showing cartilaginous outer rim and calcified centre.