Case report: Chondral fracture of the femoral trochlea

Introduction:

Osteochondral lesions of the femoral trochlea are rare. The lesion may involve only the cartilage (chondral lesion), the cartilage and subchondral bone (true osteochondral lesion) or the subchondral bone in isolation with an intact overlying cartilage (subchondral lesion).

Clinical presentation:

A 17 year old patient presented to an orthopaedic surgeon after injuring the medial aspect of the knee during a soccer game. The patient described a feeling suggestive of a loose fragment in the joint.

On examination there was a moderate effusion. No instability was present. There was tenderness over the medial joint line. The effusion was aspirated and clear synovial fluid was demonstrated.

Standard X-rays were negative. A provisional diagnosis of a possible medial meniscal tear was made and an MRI of the knee was requested.

On the MRI axial STIR sequences a subtle chondral lesion of approximately 0.4 cm was noted. There was no associated subchondral bone marrow oedema. The lesion was also seen on the coronal STIR sequences. A possible loose chondral body was demonstrated in the posterior joint space. There was no meniscal tear or ligamentous abnormality.

Fig.1. MRI knee. Axial STIR sequence shows subtle osteochondral injury of the femoral trochlea.
At arthroscopy the medial and lateral compartments were normal. The patella was also normal. A grade A4 lesion of the femoral trochlea was noted, which was debrided and microfractures were made with an ice pick.
The post operative period was uncomplicated and limited knee extension against resistance was advised.

The prognosis was good. Possible low-grade anterior knee pain is a possible long-term complication.

**Discussion:**

Usually involves the weight bearing hyaline surfaces of the knee. The medial compartment is four times more commonly involved than the lateral compartment. Involvement of the trochlea is rare. The size of the lesion may vary from a small chondral defect (mm) to a larger area of cartilage loss with involvement of the subchondral bone.

Clinically the most common signs are intermittent locking, recurrent effusions, crepitus and persistent pain. Usually younger patients are involved. Males are affected more than females.

Plain film findings are usually negative, but a subchondral fracture may be present. In chronic cases there may be subchondral sclerosis. Computed tomography (CT) may or may not demonstrate the subchondral fracture and sclerosis. CT arthrography may demonstrate the chondral defect filled with contrast. MRI is the non-invasive test of choice. On T1-weighted images the associated subchondral fracture or oedema appears hypointense. On T2- or PD- weighted fat saturated images the chondral defect with or without the associated subchondral bone marrow oedema is usually demonstrated. In some cases, MR arthrography may demonstrate subtle cartilage lesions (1).
References: