CASE REPORT

Idiopathic osteonecrosis of the humeral capitellum

We present a case of idiopathic osteonecrosis of the humeral capitellum in a 44-year-old female in the absence of any associated risk factors. Arthroscopy was undertaken to remove the loose bodies and debride the capitellum, with a satisfactory outcome.

Idiopathic osteonecrosis of bone is most frequently encountered at the femoral head or femoral condyles and occasionally, in the metaphyses of long tubular bones but is rarely seen elsewhere. Although there are several reports of osteonecrosis affecting the elbow in children, idiopathic osteonecrosis of the elbow in the adult is very rare. Le et al. reported a series of nine patients with osteonecrosis of the trochlea and humeral capitellum, all of whom had a history of corticosteroid use and had other associated risk factors. Chan and Bell described bilateral osteonecrosis of the trochlea in a patient who had received combination chemotherapy for acute lymphoblastic leukaemia.

To the best of our knowledge there is no previously reported case of idiopathic osteonecrosis of the capitellum.

We report a patient with unilateral idiopathic osteonecrosis of the humeral capitellum without any associated risk factors.

Case report

In September 2004, a 44-year-old right handed female patient presented with pain in the right elbow. Her symptoms had started insidiously approximately two years previously and she had noticed progressive loss of flexion and extension. A diagnosis of tennis elbow had been made. The range of movement at presentation was 45° of fixed flexion to 110° with full pronation and supination. There was some crepitus. Her general health was good. There was no history of excessive alcohol intake, smoking or steroid treatment.

Radiographs and CT-scans (Figs 1 and 2) showed osteonecrosis of the humeral capitellum with cystic change, areas of sclerosis and bone collapse. There were loose bodies in the elbow joint. According to the modified Ficat and Arlet classification of lesions at the hip for application to lesions at the elbow there was grade 4 osteonecrosis. Arthroscopy of the elbow joint was undertaken, loose bodies were removed and the capitellum debrided. Three months after surgery the arc of flexion-extension had improved to between 30° and 130° but there remained pain with activity and discomfort at rest.

An MR scan was undertaken six months post-operatively and showed a superficial portion of the anterior capitellum, which was undermined with a signal of similar intensity to the synovial fluid (Fig. 3). Twelve months later, the range of movement was unchanged and the pain had significantly reduced. There remained some local tenderness.

Discussion

The aetiology and the pathogenesis of osteonecrosis remain uncertain. Different risk factors...
have been identified with a wide range of treatment options being proposed. The use of a pulsed electromagnetic field has been advocated for the treatment of osteonecrosis of the femoral head but the technique does not take into consideration the poor outcome in the advanced grades. Arthroscopy has been used in the evaluation and treatment of osteonecrosis of the femoral head. In a series of nine patients with mechanical symptoms of clicking and catching, good functional results and pain relief were achieved at a follow-up of two years.

Treatment options for osteonecrosis of the elbow are less clear since this condition is rare, probably as a result of the significant arterial anastomosis at this joint. We have identified one other paper which describes the use of arthroscopic debridement for osteonecrosis of the elbow. Chan and Bell reported a satisfactory functional result and good pain relief in a patient with bilateral osteonecrosis of the trochlea treated by arthroscopic debridement and an open capsulotomy of the elbow.

We have not been able to find any previous reports of involvement of the capitellum. The outcome in our patient is similar to that reported by Chan and Bell and we suggest that arthroscopic debridement is a suitable treatment option in patients who develop idiopathic osteonecrosis involving either the trochlea or capitellum at the elbow.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.
References


