



Hemi resurfacing of the humeral head for an osteochondral lesion affecting the entire head surface

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An osteochondral lesion of the entire articular surface of the humeral head has not previously been reported. We report the case of a 73-year-old woman with a huge osteochondral lesion which affected virtually the whole articular surface of the humeral head, caused by an unusual mechanism of injury. Clinical examination revealed a stiff, weak, painful shoulder. Radiographs were unremarkable and an ultrasound scan suggested a supraspinatus tear with retraction.

At arthroscopy the lesion was identified but the lesion was too large for arthroscopic removal. A humeral head hemi-resurfacing as a treatment for this lesion produced excellent results, the patient returned to her pre-injury level of function with no pain.

Keywords : humeral head ; osteochondral lesion ; hemi-resurfacing.

replacement in August, 2007. She lifted herself up with her right arm using a monkey bar suspended immediately above her bed. As she undertook this manoeuvre she experienced pain in her right shoulder. Prior to the incident her shoulder was asymptomatic. She was treated with analgesia and gentle mobilisation and reviewed in the shoulder clinic a few weeks later. Radiographs of her right shoulder were made, which were unremarkable apart from osteoarthritis in the acromioclavicular joint (fig 1). Clinical examination revealed a stiff, weak, painful shoulder. At this time her Oxford Shoulder Score was 6 (scored out of 48, with 48 representing normal function).

An ultrasound scan suggested a supraspinatus tear with retraction, to the extent that the sonographer felt that she was unable to visualise the supraspinatus at all. The patient was admitted for a

INTRODUCTION

Small osteochondral defects of the humeral head are well reported in the literature (3) and are recognised as being difficult to treat (1). To the authors' knowledge there are no reported cases of an osteochondral lesion of the entire articular surface of the humeral head. We present such a case with an unusual mechanism of injury and a novel treatment option.

CASE REPORT

A 73-year-old right hand dominant, obese woman (BMI 35) was recovering from a total knee

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Fig. 1. — Radiograph taken at shoulder clinic in September 2007.

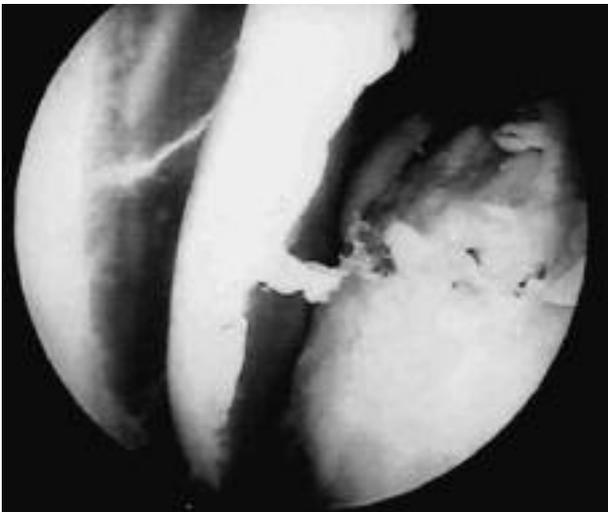
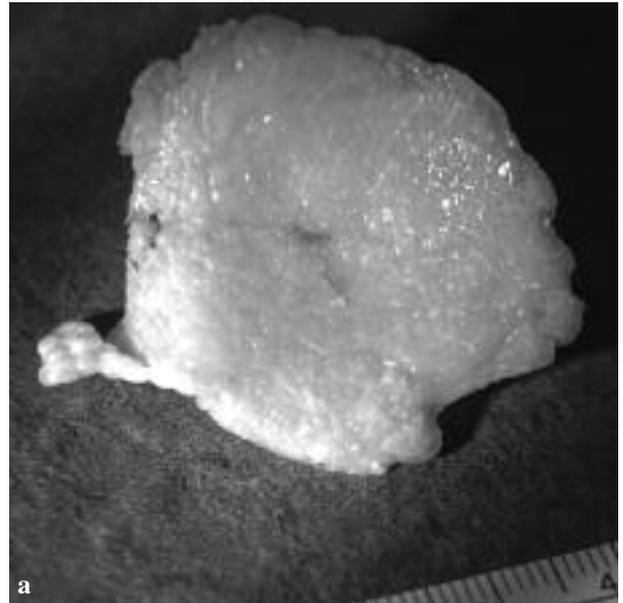
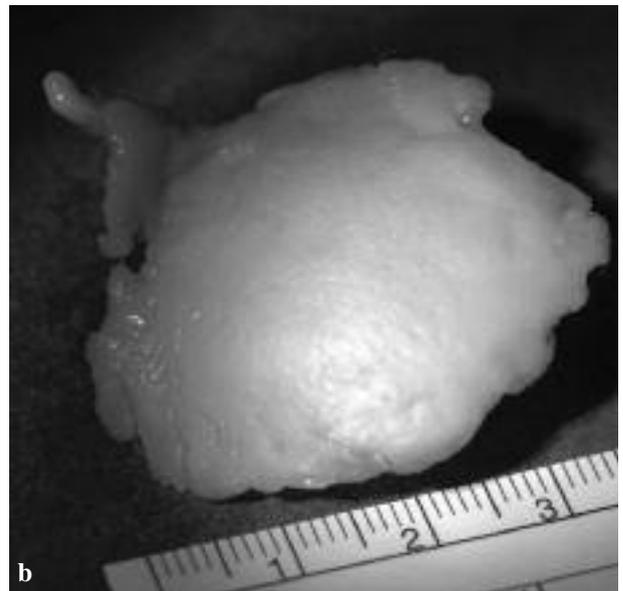


Fig. 2. — Image taken during the arthroscopy showing the lesion (centre) with the humeral head on the right and the articular surface of the glenoid on the left.



a



b

Fig. 3. — Photographs of the lesion removed showing both the osteochondral side (a) and the articular surface (b).

diagnostic arthroscopy in January, 2008. At this time her Oxford Shoulder Score was 7 (0-48). At arthroscopy a huge osteochondral lesion was discovered which affected virtually the whole articular surface (fig 2). A small glenohumeral side partial thickness tear of supraspinatus was identified, how-



Fig. 4. — Radiograph taken at Review Clinic 7 months post operatively.

ever the tendon was intact and not retracted. The lesion was too large for arthroscopic removal so it was decided to abandon the arthroscopy in favour of definitive treatment at a later date.

It was decided to perform a hemi resurfacing, which was undertaken via a deltopectoral approach in February 2008. Humeral head preparation involved removal of the osteochondral lesion (fig 3), which consisted of almost the entire articular surface, and was entirely detached from the humerus, and gentle reaming of the remaining cartilage and subchondral bone. A hemi resurfacing implant – Uncemented Standard Copland, size 3, (Biomet, Bridgend, South Wales) was then implanted without complication.

The patient made an uneventful post operative recovery. At clinic review 7 months after operation, her radiograph was satisfactory (fig 4). Her Oxford score was 38 out of a maximum score of 48 with a full range of movement. She reported minimal pain and was very happy with the outcome. Fifteen

months post operation, the patient has returned to full function without any pain, an Oxford Shoulder Score of 48 and is reporting how she is not aware of the prosthesis or having undergone the procedure.

DISCUSSION

Chondral shear injuries have been described as long ago at the 1940s by Hill and Sachs (5) and more recently by others such as Guntern *et al* (3). Many treatment options have been offered for osteochondral lesions, ranging from debridement (6), microfracture (2), mosaicplasty (4), autologous chondrocyte implantation (1), to partial resurfacing/HemiCAP® all with varying amounts of success. Obviously the end of line treatment for all patients is joint replacement if and when osteoarthritis develops. In this patient, in view of the size of the lesion, it was decided to use a hemi-resurfacing as the primary treatment.

Complete detachment of the articular surface of the humeral head is in itself an unusual and seemingly unreported lesion. The authors recommend the use of a humeral head hemi-resurfacing for the treatment of this lesion if it is encountered.

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