



Case report

Incomplete reduction of Thompson's hip hemi-arthroplasty

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Case report

A 78-year-old lady fell and sustained a displaced intracapsular fracture of her left femoral neck. She was treated with a cemented Thompson's hip hemi-arthroplasty 3 days later. The operation was performed by a trainee and proceeded unremarkably. The native head was sized using a full circular measuring template {43 mm}. A trial head was inserted into the acetabulum, and judged to be the right size. The correspondingly sized prosthesis was cemented into the femoral canal. Care was taken to remove the swab from the acetabulum {placed during femoral cementation to prevent cement deposition in acetabulum}, and ensure that there was no foreign body within the acetabulum. The acetabulum was washed out with normal saline before reduction of the prosthesis. The prosthesis head was manipulated, and appeared to be fully reduced in the acetabulum. There were no problems at the time of reduction. Routine post-operative X-ray demonstrated incomplete reduction of the head within the acetabulum {Fig. 1}.

As a result of the radiographic findings, the patient returned to theatre 3 days later for exploration of the acetabulum, and reduction of the prosthesis. The second operation was performed by a consultant. The prosthesis was dislocated and the acetabulum explored. There was no foreign body within the acetabulum, or any visible soft tissue interposition that would account for the incomplete reduction. Again the prosthesis was 'reduced' without difficulty. The prosthesis was re-dislocated, the acetabulum reassessed and no cause for incomplete reduction was found. The prosthesis was re-reduced. Clinically the prosthesis was felt to be fully reduced and stable, with a good range of movement. The second post-operative radiograph also showed incomplete reduction of the prosthesis {Fig. 2}.

After discussing the case with other consultants a decision was made to mobilise the patient. The patient began routine physiotherapy, without any excessive pain. Mobility improved gradually and uneventfully. A further radiograph {10 days post exploration} showed complete reduction of the prosthesis {Fig. 3}. The patient was discharged to her home after 3 weeks in hospital.



Figure 1. X-ray 1 day after original operation.

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Figure 2. X-ray 1 day after second operation.



Figure 3. X-ray 10 days after second operation.

Discussion

Anecdotally, incomplete reduction of Thompson's hip hemiarthroplasty has been noted by colleagues. However, a review of the literature failed to identify any previous report of an incompletely reduced hip hemiarthroplasty with no visible obstruction to reduction.

There are several obvious barriers to complete reduction such as: soft tissue interposition; bone cement; or a swab in the

acetabulum. Other possibilities include an undersized or oversized prosthetic femoral head, very low femoral neck resection or a very long neck of femur with high offset (anatomical variation) that cannot be restored by a Thompson's prosthesis. Such problems should be noticeable at the time of surgery.

In similar cases where there is no obvious barrier to reduction, the authors recommend a trial period of weight bearing with a subsequent radiograph, to confirm full reduction of the prosthesis.