



Acetabular Cup displacement as an unusual mode of failure

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Abstract

The authors present an unusual mode of failure of a total hip replacement where a cemented acetabular cup displaced during surgery for the contralateral hip. The cup was loose and worn but asymptomatic preoperatively.



Introduction

Aseptic loosening is the most frequent complication after both cemented and uncemented Total hip arthroplasty. It leads to variable degrees of migration, less frequently stem displacement, but only very rarely acetabular cup displacement occurs. We report an unusual and interesting displacement of an acetabular cup after a previously successful cemented total hip replacement.

Case Report

A 72-year-old man was seen for a disabling arthritis of his right hip. He had a Stanmore cemented Total hip replacement done 13 years ago on the left side, which was asymptomatic. Routine X-ray of the pelvis confirmed osteoarthritis of the right hip, and it also showed a loose and worn cup on the left side. (Fig.1).



Figure 1: Preoperative radiograph with loosening and wear of the left cup.

His leg lengths were measured on the bed pre-operatively and were noted to be equal. When next assessed on the operating table following the spinal anaesthesia, his leg lengths were noted to be unequal. Initially this was thought to be due to pelvic tilt. A



right total hip replacement was performed. The leg lengths appeared equal and at the end of the procedure whilst still on his side but on placing the patient on his back it was noted that the left leg was considerably shorter. X-rays were taken and it was revealed that the left acetabular component had migrated proximally up the lateral wall of the acetabulum (Fig. 2).



Figure 2: Postoperative radiograph showing displacement of the left cup.

The patient was mobilised with a shoe raise on this side and six weeks later had revision of the left total hip replacement. At operation the acetabular component was removed easily. The femoral component was still firmly fixed and the orientation was correct. Postoperatively, check radiographs showed prosthesis in situ (Fig. 3). The rehabilitation period was uneventful. At six month follow up patient was asymptomatic and doing well.



Figure 3: Radiograph after revision surgery of the left hip

Discussion

Displacement of uncemented femoral stem and acetabular cup has been described in the literature [2,5]. Displacement of cemented femoral stem has also been described [7,8]. In all the cases previously described there was history of attempted manipulation and only one was possibly related to aseptic loosening.

Aseptic loosening of the prosthetic components is the commonest cause of failure of hip arthroplasties [6]. This is often associated with adjacent osteolysis. Patients with loose acetabular components are often asymptomatic whereas those with loose femoral stems are usually symptomatic [9]. This patient was asymptomatic despite having a loose acetabular component in the left hip.

Soft tissue tensions along with implant orientation and impingement has been recognised to be vital in the maintenance of stability after total hip arthroplasty [3]. Ali Khan et al [1] cited patients with neuromuscular disorders, those in confused mental state and those undergoing revisions are at a greater risk of dislocation. Increasing age appears to be a risk factor [4]. The reason for this association is unclear but may be related to diminished proprioception or lack of muscle tension. Therefore soft tissue tension is a crucial factor in the maintaining stability. It is probable that resting muscle



tone helped to keep the acetabular cup in place. The decrease in muscle tone resulting from the spinal anaesthetic for contralateral hip replacement may have been an important causative factor in the acetabular cup migration in this patient.

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