



Use of Opteform® to Repair Acetabular Osteolysis

Series A, Number 2

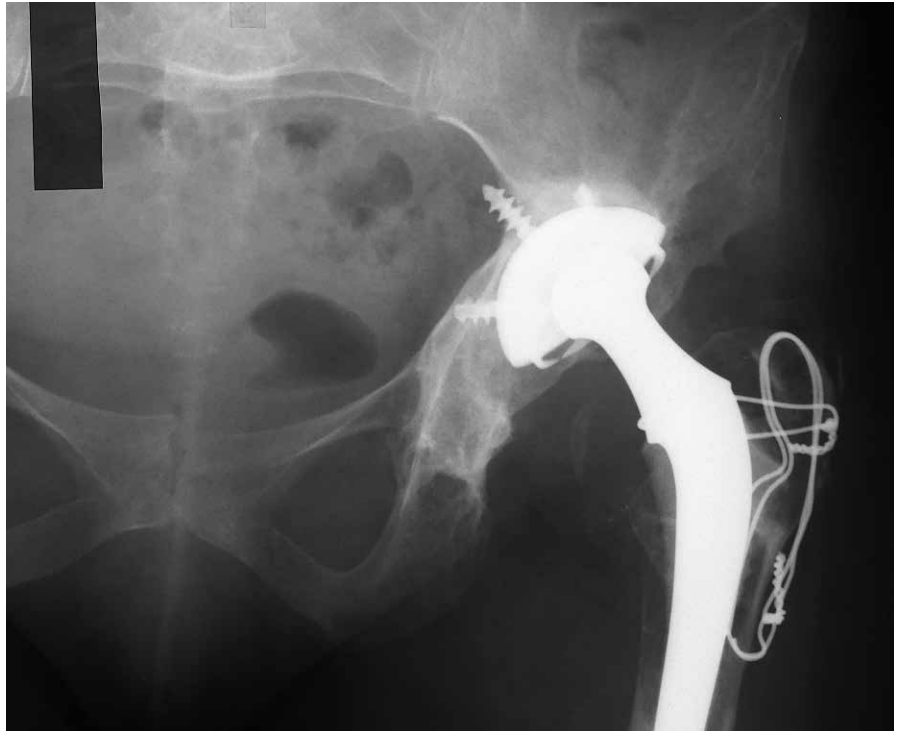
Presentation

A 53-year-old female presented with localized pain in the left hip, increased limping and decreased ability to ambulate over the last two months. She had bilateral total hip arthroplasty 13 years prior for a primary diagnosis of degenerative arthritis. In the past 10 years, the patient has had three left hip revisions and one right hip revision. Radiographs demonstrated radiolucency surrounding the socket, asymmetric wear of the polyethylene, and radiolucency along the mid-portion of the femoral component (Figure 1).

Treatment

At operation the femoral stem was well fixed. However, the acetabular component was loose and was subsequently removed. Acetabular bone was reamed to expose fresh host bone. There were bony defects in the anterior, posterior, medial and superior portions of the acetabulum. A 75mm and a 45mm disk of Opteform®, providing a total graft volume of 23cc, were warmed and pressed into the defects. A 48mm cup with a 22mm ID acetabular insert was placed. The cup fixation was supplemented with two 6.5 mm screws, applied superiorly (Figure 2). At 10 weeks postoperatively, the patient resumed full activity without external support.

1)



2)

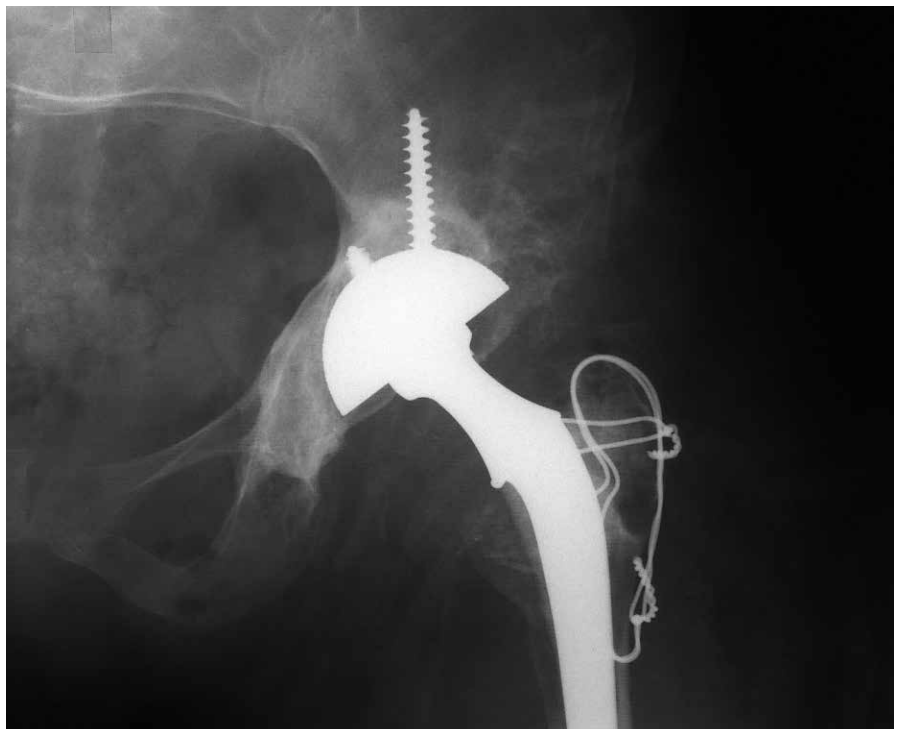
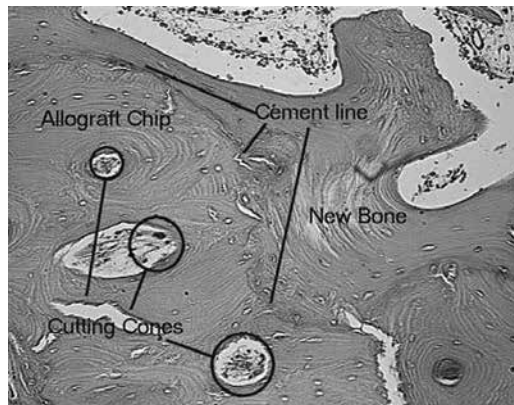


Fig 1. Preoperative: The left acetabular cup has migrated superiorly indicating loosening. Also note the radiolucency along the femur and the asymmetrical polyethylene wear.

Fig 2. Immediate postoperative: new cup and implanted Opteform around the cup.



3)



4)



5)



6)

Additional Treatment

The patient returned six months postoperatively after developing acute pain. Radiographs showed that the acetabular component had rotated into a vertical position (Figure 3). At operation the defects observed six months previously were well healed, and no additional bone graft was required during this revision. A biopsy was taken at the site of the previously placed Opteform[®] allograft (Figure 4). Histological analysis indicated new bone growth and remodeling throughout the Opteform[®]. The displaced acetabular cup was revised with a 52mm acetabular cup using four 6.5mm screws to augment the fixation.

Outcome

Four months after the most recent revision operation, the patient was walking well with one crutch. Radiographs demonstrated the prosthetic components in good position with no evidence of complications (Figures 5 & 6). The displacement of the acetabular cup was thought to be due to the inadequate fixation of the acetabular cup into healthy host bone. The use of Opteform[®] during the first procedure improved the bone quality at the site thus allowing for better fixation during the subsequent procedure.

Fig 3. Ten weeks postoperative: The medial edge of the acetabular cup has rotated laterally, tilting the cup vertically. Note the radiolucent gap on the medial edge indicating the cup's previous position.

Fig 4. Histological sample of the bone graft site. New bone has grown amidst the Opteform[®] allograft chips and is continuing to remodel as indicated by the cutting cones.

Fig 5 & 6. One month (left) and four months (right) postoperative: Note the trabeculation of the bone graft and the lack of movement of the cup.