

CASE STUDIES

USE OF CEM-OSTETIC® PUTTY TO FILL AN OSTEOLYTIC FEMORAL VOID IN REVISION TOTAL HIP ARTHROPLASTY

Presentation

A 58-year old lumber yard salesman presented complaining of progressive right thigh and groin pain. The patient was 10 years status post a left total hip arthroplasty that was complicated by an early periprosthetic fracture. To treat the fracture, the hip had undergone an early revision with a long stemmed cemented femoral component and circlage cables. The patient subsequently did well until he developed progressive right thigh and groin symptoms. The examination and work up of his right hip replacement revealed aseptic loosening of the right femoral component. The acetabular component appeared well fixed (Figure 1). Laboratory studies demonstrated no evidence of infection with normal CBC, ESR and CRP values. Hip aspiration cultures were negative.

Treatment

The patient underwent revision of the femoral component with exchange of the acetabular liner. The loose cemented stem was removed without trochanteric osteotomy. The cables were removed. Frozen specimens demonstrated no evidence of infection. After reaming and debridement of the femoral canal, a long stem bowed, modular titanium calcar replacement stem was placed. A trochanteric bolt was placed for additional rotational stability.

A 15 cc volume of Cem-Ostetic® putty was then prepared and injected via a 16-gauge spinal needle into the osteolytic void lateral to the proximal stem. After the putty had set, the wounds were copiously irrigated with a pulsatile irrigation device. The wound was closed in layers. X-rays demonstrated well aligned components (Figure 2).



Figure 1. Preoperative: AP view demonstrated a loose cemented long stem femoral component with a trochanteric claw and cables with marked osteolysis of the proximal femur.



Figure 2. Immediate Postoperative: Oblique AP X-ray demonstrating a long stem modular calcar replacement stem with trochanteric bolt. Cem-Ostetic® putty is visualized as radiodense material in the osteolytic void along the lateral aspect of the proximal stem.

Postoperative Results and Outcome

The patient had an unremarkable perioperative course. He was discharged at postoperative day 4. The patient experienced a rapid recovery. He was restricted to 25% partial weightbearing for 6 weeks (Figure 3). He was rapidly weaned from pain medications and returned to work at 3 weeks. By 3 months, the patient was asymptomatic, ambulating greater than 3 miles per day without assistance. X-rays at 3 months time demonstrate incorporation and remodeling of the Cem-Ostetic® putty (Figure 4).

Summary

Use of Cem-Ostetic® putty in the treatment of a complex revision total hip arthroplasty procedure allowed for the augmentation of the deficient osteolytic bone defect of the proximal femur. The putty was placed via a small gauge syringe into the void after the placement of the long stem revision prosthesis. By 3 months, the material had demonstrated incorporation and remodeling with the host bone.



Figure 3. 6 weeks postoperative: AP view of the proximal femur demonstrates well aligned components with early remodeling of the graft material.



Figure 4. 3 months postoperative: AP view of proximal femur demonstrates incorporation and remodeling of the bone graft material lateral to the proximal stem.