

Two-Stage Revision Hip Arthroplasty for Failed Infected Hip Hemiarthroplasty complicated by subsequent dislocation: A Case Report

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Abstract: ***Background:** Periprosthetic joint infection (PJI) following hip hemiarthroplasty is a severe complication with significant morbidity. Two-stage revision utilizing an antibiotic-loaded cement spacer remains the gold standard for eradicating recalcitrant infections, such as those caused by *Pseudomonas* species. Managing structural instability alongside PJI presents complex surgical challenges.*

Keywords: Periprosthetic joint infection (PJI), Hip hemiarthroplasty conversion, Two-stage revision arthroplasty, Antibiotic cement spacer, Total hip arthroplasty (THA), Prosthetic dislocation

1. Case Presentation

A 58-year-old male presented with acute local pain, fever, and purulent surgical-site discharge 6 weeks after undergoing hip hemiarthroplasty for a femoral neck fracture. Diagnostic workup confirmed an acute PJI secondary to *Pseudomonas aeruginosa* with pseudo-acetabular formation.

Stage 1 management consisted of implant Removal 5 months post-primary surgery, thorough surgical debridement, and placement of an antibiotic-loaded cement spacer combined with targeted intravenous antibiotic therapy. Following a 12-week interval, clinical resolution and normalization of inflammatory markers (C- reactive protein and erythrocyte sedimentation rate) were confirmed.

Stage 2 was executed via conversion to a cementless total

hip arthroplasty (THA). At 15 days postoperatively, the patient experienced a mechanical dislocation due to limb positioning. Successful revision was performed using a long-stem THA construct supplemented with tension band wiring. At the latest follow-up, the patient was pain-free, ambulating full weight-bearing, and demonstrated no clinical or radiographic evidence of recurrent infection or instability.

2. Conclusion

Two-stage revision conversion to THA utilizing an antibiotic-loaded cement spacer is an **effective salvage procedure** for deep PJI following hip hemiarthroplasty. Careful addressing of soft-tissue envelope integrity and mechanical stability- including long-stem fixation when instability occurs- can reliably achieve infection clearance and restore pain-free joint function.



Primary hemiarthroplasty



Pseudo acetabulum



Removal of Implant



Antibiotic loaded cement spacer



(Total Hip Replacement)



(Dislocation)



(Revision of Long Stem Total Hip Replacement)



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