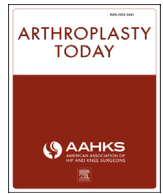




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Case report

Catastrophic failure of an acetabular total hip arthroplasty component mimicking a posterior dislocation

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ABSTRACT

In our case study, we examine a case of catastrophic failure of a total hip arthroplasty acetabular component leading to complete central wear by the ceramic femoral head, requiring revision total hip arthroplasty. Despite subtle clinical findings, initial orthopaedic evaluation and treatment yielded a diagnosis of total hip arthroplasty dislocation. While a much more common phenomenon, the diagnosis led to futile initial attempts at closed reduction. Our index of suspicion must remain high to pick up on subtle, less common diagnoses we will encounter.

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Introduction

Hip dislocation after total hip arthroplasty offers several challenges to the total joint surgeon. When using a posterior approach to the hip, the vast majority of postoperative dislocations occur posteriorly with an overall rate ranging from 1.1% to 4.76% in the literature [1–5]. Most dislocations warrant an attempted closed reduction in the emergency room. However, in this case, a thoughtful analysis of the presenting radiographs should have lead one to conclude that such an attempt would be futile.

Detailed surgical planning is a necessary component to any revision case. Bone loss must be assessed for both the acetabular and femoral components, as this will affect what tools need to be available and what options exist for reconstruction. A full set of plain films must be obtained. Sometimes, a computed tomography

scan is useful in evaluating the extent of osteolysis. Laboratory workup should include complete blood count, erythrocyte sedimentation rate (ESR), and C-reactive protein (CRP) with an aspiration if results are consistent with infection. When all these details are obtained, things do not always unfold as expected. The following is one such case we encountered. The patient was advised that details of the case would be submitted for publication and provided informed consent.

Case history

A 50-year-old man initially presented to our emergency department in November 2012 complaining of right hip pain with a 1-month inability to ambulate without crutches on the right lower extremity. The patient denied any trauma but did have multiple sclerosis with periodic falls from standing. The patient had undergone staged bilateral total hip arthroplasties at an outside institution for steroid-induced avascular necrosis. The patient had been on disability since 2005 secondary to his hip complaints and back issues that had also been addressed with surgery. His left total hip arthroplasty was performed in 2008 and the right in 2009. Both procedures were reportedly uncomplicated with satisfactory postoperative recovery. His past medical history also included multiple sclerosis, juvenile dermatomyositis, migraines, and depression. Additional surgical history included lumbar spine fusion.

The patient complained of persistent pain in the right hip associated with decreased range of motion and noise from the hip

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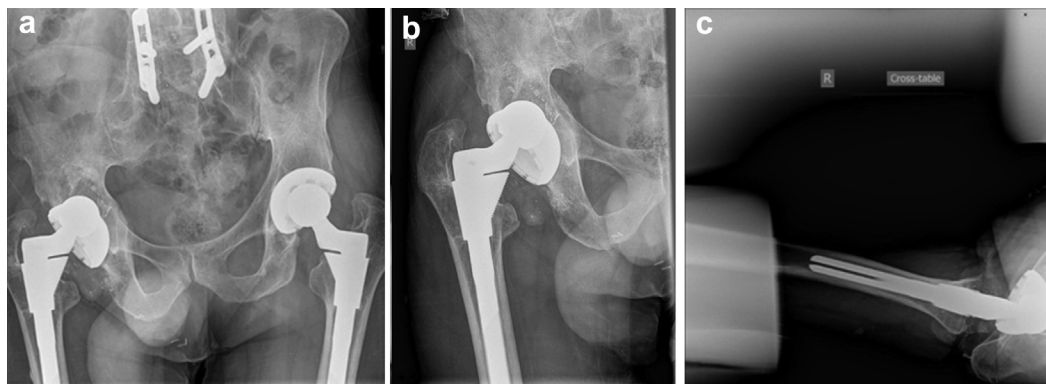


Figure 1. AP pelvis (a) and lateral right hip (b) radiographs taken during initial emergency room visit. Radiologist read as anterior dislocation of femoral head component from the acetabular component. The radiologist also noted ill-defined lucency (c) about the femoral and acetabular components possibly reflecting underlying particle disease.

that had been gradually increasing. Plain radiographs taken in the emergency department demonstrated findings that were interpreted as a dislocation of the femoral head component as seen in [Figure 1](#). There was concern for anterior dislocation of the femoral component. Orthopaedics was consulted, and the patient was seen and evaluated by a junior resident after hours. The patient subsequently underwent 2 unsuccessful attempts at closed reduction under intravenous sedation in the emergency department. In addition, the patient's ESR and CRP were elevated, so preparations were made for hip aspiration and open reduction in the operating room. However, the patient left the hospital against medical advice before the procedures. He had undergone a recent aspiration at an outside hospital that was reportedly negative.

One month later, the patient presented to our outpatient clinic with persistent right hip pain radiating to the right foot. He was

evaluated by the senior author. Radiographs taken in the office were interpreted as persistent right hip dislocation and stable periprosthetic lucency. It was recognized that the patient had central wear-through of the acetabular shell, as this was the only possible explanation for the femoral neck being superimposed on the socket in both AP and lateral views. Concern for infection was high due to elevated ESR and CRP, so the patient was advised to undergo hip aspiration. The aspiration showed no growth, and the decision to proceed with operative treatment was made. In the time between the patient's initial evaluation and surgery, he sustained a fall from standing resulting in a right hip intertrochanteric periprosthetic fracture as seen in [Figure 2](#).

The patient underwent operative revision of the right total hip arthroplasty roughly 10 months after the initial emergency room visit via posterolateral approach. Intraoperatively, we encountered

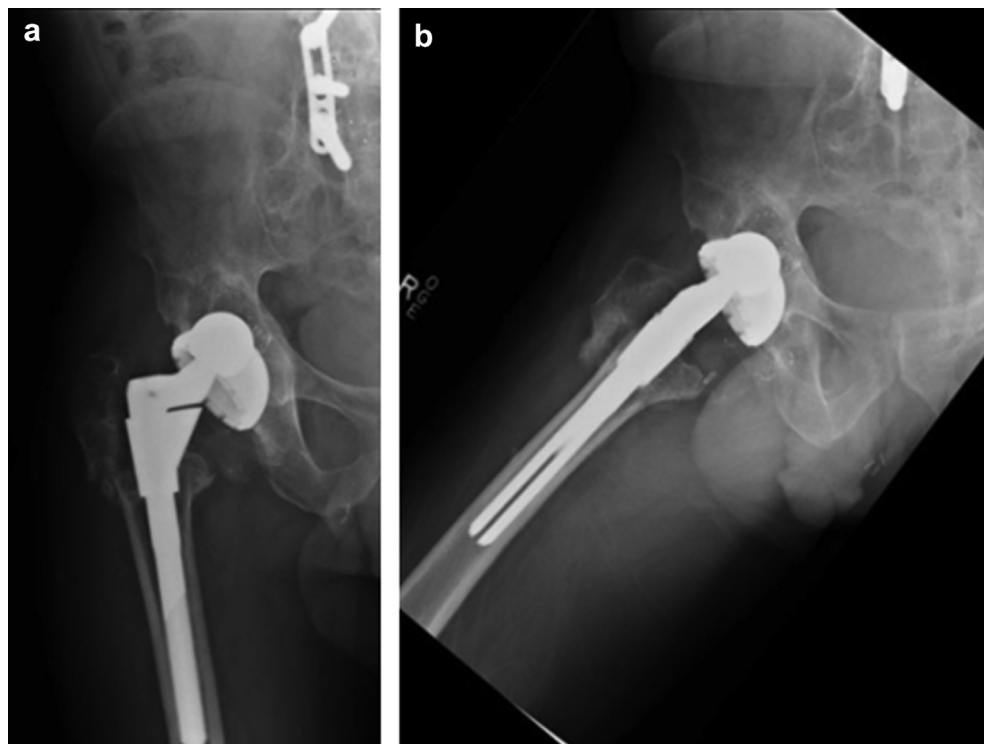


Figure 2. AP right hip (a) and lateral right hip (b) radiographs taken at the patient's initial clinic visit. The patient had fallen from standing height intervally. Radiographs demonstrate persistent right hip dislocation and stable lucency around the acetabular and femoral components, along with a new right greater trochanteric fracture that went onto nonunion.

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