Case Report

Dislocation of an S-ROM Total Hip Arthroplasty Secondary to Traumatic Femoral Stem Dissociation from the Metaphyseal Sleeve

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Abstract: Modular total hip arthroplasty component dissociation has been reported. We describe a case of recurrent instability secondary to femoral stem dissociation from the proximal metaphyseal sleeve and resultant traumatic retroversion of the neck. Femoral stem revision was necessary for treatment of this rare complication. **Key words:** total hip arthroplasty, modular, instability, retroversion, femoral stem, revision.
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Dislocation after total hip arthroplasty (THA) is one of the most common complications seen postoperatively. Dislocation rates, as reported in the literature, after primary THA, range from 2% to 5% [1,2] and as high as 27% after revision THA [3]. Ascertaining the cause of dislocation is vital to the surgeon's treatment plan and is often multifactorial in nature. Common risk factors for THA instability include malaligned components, poor abductor complex tensioning, decreased patient soft tissue function, and reasons related to component design. We present the case of a patient with recurrent dislocation after a primary THA with an S-ROM modular prosthesis (Depuy, Warsaw, Ind). The reason for dislocation was secondary to femoral stem and metaphyseal sleeve dissociation and traumatic retroversion of the neck. To our knowledge, there is only one report of femoral stem and metaphyseal sleeve dissociation cited in the literature [4]. This reported dissociation occurred after attempted closed reduction.

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Case Report

A 66-year-old female with history of left primary THA using an S-ROM modular total hip implant fell from a patio deck 1.5 feet high, approximately 2 months postoperatively. The patient was experiencing vision problems secondary to a new-onset and undiagnosed eye condition, and this, subsequently, was the reason behind her fall. Before the fall, the patient had been doing well and her recovery and rehabilitation had been appropriate. She had multiple medical comorbidities including hypertension, rheumatoid arthritis, hypothyroidism, and diabetes mellitus. After the fall, she presented to an outside emergency department and had radiographs taken that were reported as negative for fracture and dislocation.

She then followed-up in our clinic shortly after the fall for further evaluation. The patient was complaining of generalized pain in the left groin as well as in the left lateral proximal femur. Images in the office were taken, and there was no evidence of fracture or

Fig. 1. Radiographs demonstrate dislocation of S-ROM THA after the patient had attempted to sit in a chair of normal height.

dislocation, and the components appeared well aligned and well fixed. She was diagnosed with a likely contusion and/or muscle strain. Her hip examination demonstrated flexion to 90° but was slightly limited because of pain and any rotational maneuvers also elicited pain. Within these ranges, the hip was clinically stable. There was no rotational or adduction deformity to her lower extremity on examination, and the patient was able to ambulate with a walker without difficulty. Hip precautions were stressed to the patient, and she was to return for her next scheduled routine follow-up.

One week later, the patient sustained a dislocation after presumably sitting down in a chair of normal height (Fig. 1). The patient presented to an outside institution and underwent an uneventful closed reduction by another orthopedic surgeon. The patient was placed in an abduction brace, cleared physical therapy, and discharged home.

A few days later, the patient experienced a second dislocation, again while sitting routinely in a chair of normal height. She reported being compliant with the brace and with hip precautions. She was admitted to our institution after closed reduction, and because of the patient having recurrent instability, the decision was made to perform a revision THA. Preoperatively, the plan was to remove the acetabular component, place a cup 2 mm larger that would then allow us to insert a larger femoral head, and thus optimize the head-neck ratio. The patient had a 32-mm femoral head in place, and the plan was to place a 36-mm femoral head. Radiographs demonstrated that the cup was in appropriate anteversion and abduction (Fig. 2). Furthermore, the femoral stem appeared to have appropriate neck length and offset.

Intraoperatively, upon visualization of the proximal femur, the femoral stem was found to be retroverted and slightly loose. During the index procedure, the stem had been placed in appropriate anteversion and with good fixation as the patient was doing well up until her fall. As for the metaphyseal sleeve, it was well fixed upon assessment. The stem was then removed, and the inner portion of the sleeve was irrigated and cleaned. Unfortunately, a long femoral stem of the same diameter was not available at the time of surgery, leaving us with the dilemma of compromised distal

Fig. 2. Radiographs after closed reduction of THA. Component positioning appears adequate with the cup in appropriate anteversion and abduction. There is no evidence of fracture. Version is difficult to assess on this anteroposterior radiograph.

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