

# Bilateral Displaced Femoral Neck Fractures After Myoclonic Seizure Treated With Bilateral Total Hip Arthroplasties

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The literature includes a few case reports of seizure-induced bilateral femoral neck fractures.<sup>1-3</sup> One such case was caused by water-soluble myelography, and treatment was open reduction and internal fixation.<sup>2</sup> In our literature search, we found no recent case reports of seizure-induced bilateral femoral neck fractures after myelogram treated with bilateral total hip arthroplasty (THA). We now present such a case. The authors have obtained the patient's informed consent to publish his case report.

## CASE REPORT

An active man in his mid-40s underwent a cervical myelogram for neck pain and bilateral upper extremity pain and weakness. After injection of contrast dye (Conray 60; Covidien, Mansfield, MA) into the intrathecal space, prolonged myoclonic spasms developed. The patient was transferred to the intensive care unit, where he was intubated and supportive care was initiated. After being extubated, he complained of severe bilateral hip pain. Radiographs showed bilateral displaced subcapital femoral neck fractures with significant shortening (Figure 1). Approximately 15 days had transpired from seizure onset to the diagnosis of bilateral femoral neck fractures. The patient was then transferred to our institution for definitive treatment and postoperative rehabilitation.

Bilateral THA was performed through the direct lateral approach during a single period of anesthesia. Two fully porous-coated stems were placed with press-fit porous-coated cups. Given the patient's young age and high activity demands, metal-on-metal bearing surfaces were used (Figure 2). Total estimated blood loss was 1100 mL for both hips. No operative complications were encountered. Prophylaxis for heterotopic ossification (HO) was not administered.

At 1-year follow-up, the patient had no noticeable limp. Right hip range of motion (ROM) was 90° flexion, 20°

external rotation, no internal rotation, 30° abduction, and 10° adduction. Left hip ROM was 90° flexion, 10° internal rotation, 30° external rotation, 30° abduction, and 10° adduction. Radiographs showed bone ingrown components with Brooker<sup>4</sup> class III HO on the right and class II HO on the left (Figure 3). Overall, the patient was satisfied with the surgery but still had moderate limitations and pain that did not affect normal activities.

## DISCUSSION

Bilateral femoral neck fractures have been reported in the literature. Causes include seizures and pathologic fractures.<sup>1,3,5-7</sup> Treatment has included open reduction and



**Figure 1.** Anteroposterior radiograph of pelvis shows displaced bilateral femoral neck fractures.



**Figure 2.** Anteroposterior radiograph of pelvis shows bilateral metal-on-metal total hip arthroplasty 6 weeks after surgery.

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**Figure 3.** Anteroposterior radiograph of pelvis shows bilateral heterotopic ossification 1 year after surgery.

internal fixation, bilateral hemiarthroplasty, and bilateral THA. No author has mentioned treatment with bilateral THA and an alternative bearing.

The intrathecally injected contrast dye Conray 60, used in our patient's case, has the well-known side effect of myoclonic spasms.<sup>2,8</sup> Inadvertent injection of the wrong substance was noted immediately and documented appropriately, but the seizure could not be prevented. Unfortunately, the diagnosis of femoral neck fractures was delayed more than 2 weeks. Given the complete displacement, shortening, and elapsed time, an arthroplasty of some sort was indicated. Currently, there is debate as to whether to perform a unipolar or bipolar hemiarthroplasty or THA in the young patient with no evidence of acetabular disease. With the success of cementless fixation and the advent of newer-generation alternative bearings, we expect that we can obtain good long-term survivorship with more predictable pain relief than that obtained with hemiarthroplasty. Long-term survivorship studies using these newer bearing surfaces are required to support this contention.

Our patient developed significant HO that affected hip motion and potentially overall outcome. Johansson

and colleagues<sup>9</sup> investigated HO incidence in patients with displaced femoral neck fractures treated either with internal fixation or THA. Although HO incidence was significantly higher in the internal-fixation group than in the THA group, only 1 patient had severe HO-related symptoms. The investigators concluded that prophylaxis is unnecessary in patients with a femoral neck fracture treated with THA. Our patient did not have any other indication for prophylaxis.

The present case report is the only one of a patient with seizure-induced bilateral femoral neck fractures treated with bilateral THA. Given our anecdotal experience with significant HO, prophylaxis should be considered in these cases.

### AUTHORS' DISCLOSURE STATEMENT

The authors received institutional support from Inova Health Care Services. Dr. Hamilton wishes to note that he is a paid consultant to DePuy, Inc.

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