

## Revision Surgery in Stable Femoral Neck Fractures Treated With Percutaneous Screw Fixation in Elderly Patients

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**Purpose:** Femoral neck fractures are a major public health problem. Multiple screw fixation is the most commonly used surgical technique for the treatment of stable femoral neck fractures. We determined (1) the rate of conversion to total hip arthroplasty (THA), and (2) the rate of repeat fracture surgery after percutaneous screw fixation of stable (Garden I and II) femoral neck fractures in patients older than 65 years.

**Methods:** We performed a retrospective study of all patients older than 65 years with stable femoral neck fractures secondary to low-energy trauma treated surgically at our institution between 2005 and 2008. We identified 121 fractures in 120 patients older than 65 years as Garden I or II (stable); all were treated with percutaneous, cannulated screw fixation in an inverted triangle without performing a capsulotomy or aspiration of the fracture hematoma at the time of surgery. Average age of the patients at the time of fracture was 80 years. Radiographs, operative reports, and medical records were reviewed. Fracture union, nonunion, osteonecrosis, intra-articular hardware, loss of fixation, and conversion to arthroplasty were noted. Follow-up averaged 11 months (range, 0-5 years) because all patients were included, including those who died. Mortality rate was 40% for all patients at the time of review.

**Results:** 12 fractures (9.9%) underwent conversion to THA at a mean of 8.8 months after the index fracture repair (range, 2-24 months); the indications for conversion to THA included osteonecrosis, nonunion, and loss of fixation. In total, 16 fractures (13%) underwent revision surgery, including the 12 for THA, 2 others had peri-implant subtrochanteric femur fractures treated by surgical repair with cephalomedullary nail, and 2 patients had removal of hardware.

**Conclusion:** Rates of revision surgery of stable femoral neck fractures were higher in this series than previously reported in the literature. The etiology for higher reoperation rate is likely due to poor bone quality and patient age, and some technical component, which leads us to believe other treatment options such as nonoperative management or hemiarthroplasty may be viable options for some of these patients.

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an "off label" use). For full information, refer to page 600.