

Failure Of Biplane Double-Supported Screw Fixation In Young Osteoporotic Femoral Neck Fracture: A Case Report

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INTRODUCTION:

For young adults, osteoporosis is rare. Surgical fixation of osteoporotic fracture is always challenging due the poor bone quality and underlying medical comorbidities. We present a case of fixation failure in young osteoporotic femoral neck fracture.

CASE PRESENTATION:

A 37-year-old wheelchair bound man came to Orthopedics Clinic for 4th month follow-up after a low-impact left transcervical NOF fracture (AO 31-B2) on June 2016. Other than diabetes and hypertension, he also had end stage renal failure for 10 years with tertiary hyperparathyroidism, secondary to neurogenic bladder which was caused by spina bifida. On his first encounter, he underwent open reduction and cannulated screw fixation of left femur using biplane double-supported screw fixation (BDSF) technique, as described by Filipov¹. Radiographs at clinic follow-up showed screws pullout with femoral neck shortening and varus angulation. He then underwent removal of screws and left total hip arthroplasty (THA). He was subsequently able to resume his normal daily activities, with wheelchair ambulation.



Figure 1: Radiographs showed screws pullout, femoral neck shortening and varus angulation.



Figure 2: Post-operative left THA

DISCUSSIONS:

Obtaining a secure fixation of an implant to osteoporotic bone is always a major challenge to surgeons. The optimal treatment for femoral neck fractures is still subject of debate today, regardless of age². Fixation failure in osteoporosis is devastating. In unstable osteoporotic fracture of femoral neck, as in our case, even the method described by Filipov has no exception to failure. For young osteoporotic patient, treating a femoral neck fracture may follow elderly algorithm. THA should be strongly considered over internal fixation in patients with associated high-risk factor to failure, in view of inadequate bone density³. This is necessary to avoid fixation failure, which may lead to catastrophic complications in fragile patients.

CONCLUSION:

The goal of treatment of femoral neck fractures regardless of patient age, bone stock, mechanism of injury, or displacement is to restore prefracture function without morbidity associated with the injury or treatment. In young patients with medical comorbidities, THA should be considered as an alternative to fixation.

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