

Interprosthetic Femoral Fracture With Minimally Invasive Fixation – A Case Report

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INTRODUCTION:

Interprosthetic femoral fracture is a rare and challenging fragility fracture issue. Due to aging of the population, the incidence of this type of fracture is gradually and constantly increasing. Lehman et al showed that the presence of two intramedullary implants in the same femur increases the risk of the fracture to 30% (1). However, there has been a paucity of literature in the past few years in this regard. There only exists classifications for peri-prosthetic fractures for THA and TKA, which has only been modified recently to include peri-prosthetic fractures. If the fracture occurs around or just distal to the hip stem the Vancouver classification can be used. If the fracture occurs more distal, around or just proximal to the knee prosthesis the Lewis and Rorabeck classification can be used.

CASE PRESENTATION

A 62 years old Indian female patient with underlying diabetes mellitus and hypertension presented to hospital with alleged fall at home due to slippery floor in sitting position. Post trauma, was complaining of pain over the left thigh and subsequently unable to ambulate. She had background history of recent left THR done 3 months ago and left TKR was implanted 3 years ago prior to current admission. X-rays done showed left comminuted interprosthetic distal femur fracture with relative stability of TKA implants. The fracture was reduced and fixed by using distal femur locking plate with standard minimally invasive technique. Patient was last reviewed at 5 months post operation and revealed satisfactory progress in recovery with stable THR and TKR implants.



Figure 1: Post-Op left femur x-rays (AP)



Figure 2: Post-Op left knee x-rays (AP & Lateral)

DISCUSSIONS:

Interprosthetic femoral fractures can occur anywhere between ipsilateral hip and knee arthroplasties. They tend to occur in the elderly population from ground-level falls. The overall incidence of these fractures is not known. Historically, there is a 0.1% to 2.1% rate of fracture after THA with increasing rates for fractures after hemiarthroplasty (3.7%), revision total arthroplasty (4%), and revision hemiarthroplasty (10.7%)(2). The incidence of periprosthetic fractures occurring after TKA ranges from 0.3% to 2.5%(3). To our knowledge, there has not been a study specifically evaluating the location or results of interprosthetic femoral fracture treatment. At present, there are no specific treatment algorithms for interprosthetic femoral fractures. In general, the treatment of any periprosthetic fracture is largely determined by the stability of the implant and the location of the fracture relative to the implant. There are few studies showed that fracture patterns associated with unstable prostheses have been successfully treated with long-stem revision arthroplasty, whereas displaced fractures around stable hip and knee implants are open to a number of surgical stabilization techniques, including a variety of plating constructs augmented with or without cortical allograft struts and cerclage wiring and flexible or rigid intramedullary devices(4).

REFERENCES:

- 1) Lehmann W, Martin R, Jacob N et al. What is the risk of stress risers for interprosthetic fractures of the femur? A biomechanical analysis.