Atypical Fracture of Femur on Prolonged Bisphosphonate Therapy: A Case Report

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INTRODUCTION:

Bisphosphonate have been the treatment of choice in the management of osteoporosis. Its antiresorptive function has lowered the frequency of bone fragility related fracture. They reduce bone mineral density (BMD) loss by suppressing osteoclastic bone resorption, the process by which important minerals like calcium are reabsorbed from bone. We present the clinical case of a patient in prolonged treatment with bisphosphonates and atypical bilateral femur fracture.

REPORT:

52 years old woman who was diagnosed to has Idiopathic Thrombocytopenic Purpura on prolonged steroid therapy came with history of left thigh pain while walking in the morning and inability to weight bear. Prior to the injury, she had been independently mobile and full weight bearing without issue. She is on osteoporotic treatment with bisphosphonate therapy for almost 5 years and never has drug holiday. Plain radiograph taken showed an oblique subtrochanteric fracture without communition and cortical thickening of the bilateral femur. The patient was treated with antegrade femoral intramedullary nailing. Xray done during follow up showed a united fracture and the patient was advised to take a bisphosphonate drug holiday to prevent an atypical fracture in the future.

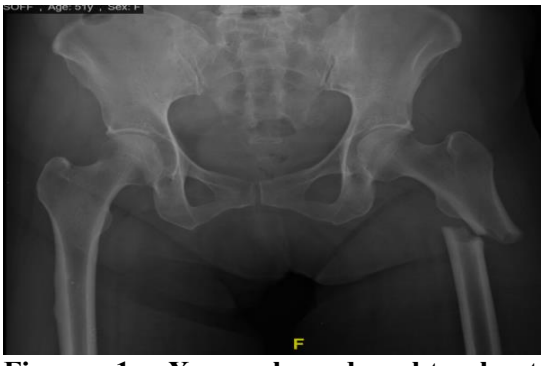

Figure 1: Xray showed subtrochanteric fracture with cortical thickening

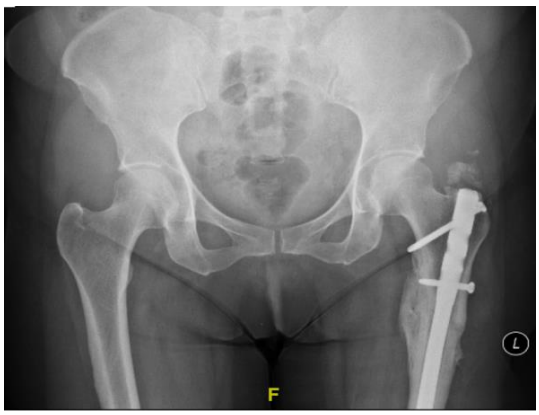

Figure 2: Xray post Intramedullary Nailing

CONCLUSION:

Atypical subtrochanteric femoral fractures are an extremely rare adverse effect of long-term bisphosphonate use. Recent recommendations suggest a 3–5-year therapy duration (5 years for risedronate) for patients at 'low-risk' of fracture, at which time a 'drug holiday'' and reassessment of BMD should be undertaken. [1]

The mechanism of atypical fracture patterns is decreased osteoclastic activity and impeded bony remodelling, which contributes to increased skeletal fragility due to the accumulation of bony microdamages.[2]

REFERENCES:

1. Yoon RS, Hwang JS, Beebe KS. Long-Term bisphosphonate usage and subtrochanteric insufficiency fractures *J Bone Joint Surg Br* 2011;**93**:1289–95.
2. Edwards BJ, Bunta AD, Lane J, *et al*. Bisphosphonates and nonhealing femoral fractures. *J Bone Joint Surg Am* 2013;**95**:297–307