

CASE REPORT

BISPHOSPHONATE INDUCED STRESS FRACTURE OF BILATERAL FEMUR: A CASE REPORT

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ABSTRACT: Osteoporosis is a common problem affecting people after 4-5 decade of life. There are various treatment options available for Osteoporosis and Bisphosphonates are widely used. Bisphosphonates work by blocking osteoclast mediated bone resorption and can be given in oral and injectable forms. Recent studies have brought to light the risk of sub trochanteric stress fracture secondary to bisphosphonate therapy. Here we are presenting a case with bilateral sub trochanteric fracture following prolonged bisphosphonate therapy.

KEYWORDS: Osteoporosis; Bisphosphonates; Sub trochanteric femur fracture; Stress fracture.

INTRODUCTION: Around the world, 1 in 3 women and 1 in 5 men over the age of 50years suffer from osteoporotic fractures.^[1] Calcium, Vitamin D, parathormone and Bisphosphonates are the most commonly used drugs in the treatment of osteoporosis with bisphosphonates being used more frequently.^[2] But there have been reports suggesting that the patients can develop stress fractures and lead to increased strain to the patient in whom it is supposed to treat osteoporosis.^[2,3,4] The purpose of this study is to report a case of Right sub-trochanteric fracture 2° to Right sided stress fracture and left non-traumatic stress fractures of the femur shaft following long term bisphosphonate therapy.

CASE REPORT: 67 year female presented to our hospital with history of pain and swelling of right lower limb following a trivial fall. Patient was on oral bisphosphonate (alendronate) therapy for 6 years. Radiographs of the Right femur and pelvis with both hips were taken. X rays showed bilateral sub trochanteric stress fractures leading to sub trochanteric fracture on the right side with cortical thickening. Dual-energy X-ray absorptiometry showed T-scores of Femur neck -2.7. Right sided fracture was fixed using Intramedullary interlocking nail and prophylactic fixation using proximal femoral nail was done for the left femur. The surgery was uneventful and bisphosphonate therapy was stopped.

DISCUSSION: As atypical stress fractures are reported in many as 78 cases per 100,000 patients taking oral bisphosphonates for more than 5 years, more with alendronate.^[5] Bisphosphonates are integrated into the bone without degradation leading to long half-life i.e. 10 years; effects are seen even after cessation of their therapy.^[4] Recently, Black et al.^[6] have compared the effects of discontinuing alendronate treatment after 5 years versus continuing for 10 years. The results confirmed the safety of alendronate for up to 10 years, including no increased fracture risk with long-term use.^[6] Long term suppression of bone turnover leading to impaired bone healing with results in accumulation of micro damage and compromise bone

CASE REPORT

strength will eventually present as stress fractures.^[7] The radiological features are bilateral thickened diaphyseal cortices and breaking of cortex on one side.^[6] Stress fractures make the limb vulnerable for fractures following minimal trauma. The patient may feel sharp, prodromal pain localized to mid or upper thigh weeks or months before fracture.^[8] So a detailed study is necessary to evaluate the effects of bisphosphonates and to look for alternative options for treatment of postmenopausal osteoporosis.

CONCLUSION: The adverse effects of bisphosphonates out weight the benefits of prolonged bisphosphonate therapy thus leading to re-consideration of them for the treatment of osteoporosis.



FIGURE 1

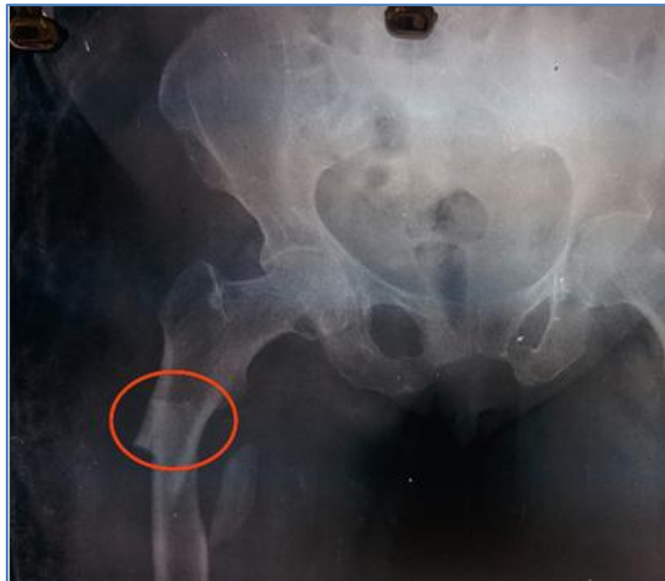


FIGURE 2

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CASE REPORT

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