

Bilateral Atypical Femoral Fractures In A Patient With Multiple Myeloma Treated With Bisphosphonates Therapy; A Case Report

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INTRODUCTION:

Bisphosphonates are currently the standard approach to manage bone disease in multiple myeloma. Bisphosphonates inhibits osteoclastic activity and reduces the growth factors released from malignant cells, thereby impairing abnormal bone remodeling which leads to osteolysis. But, patients of multiple myeloma may be at a higher risk of atypical femoral fractures because the treatment requires higher cumulative doses of bisphosphonates.

MATERIALS & METHODS:

Our female patient was first diagnosed with multiple myeloma at the age of 49 years. She had been receiving bisphosphonates injection for around 11 years. At age 59, she presented with prodromal left thigh pain and she sustained a left atraumatic subtrochanteric femoral shaft fracture. The left femoral fracture was treated by intramedullary nailing, and bone union was obtained 6 months postoperatively. Currently at the age 60 patient presented again with right thigh pain after trivial trauma.

RESULTS:

This latest radiograph right femur showing atypical fracture of subtrochanter with evidence of focal hypertrophy of the lateral cortex (figure 1). She underwent intramedullary nailing of the right femur (figure 2), Her postoperative course was uneventful. Last seen show that fracture was uniting

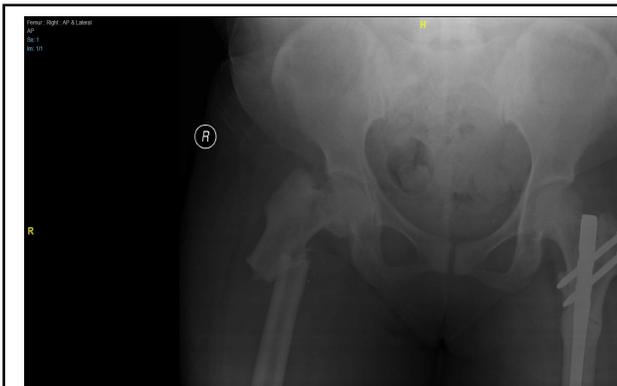


Figure 1

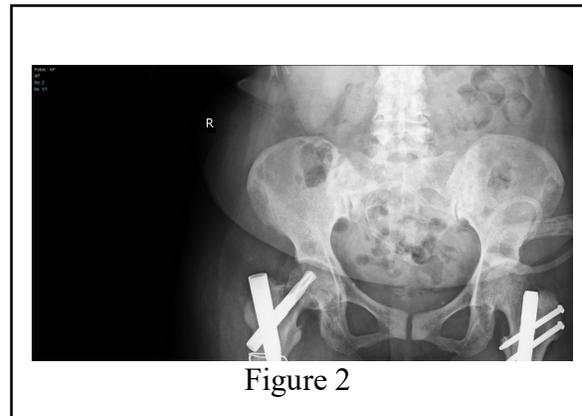


Figure 2

DISCUSSIONS:

Multiple myeloma is a cancer characterized by uncontrolled proliferation of clonal plasma cells. These cells stimulate osteoclast-mediated osteolysis, leading to devastating and rapid bone loss. Bisphosphonates are currently the standard treatment for managing bone disease in multiple myeloma. They function by mainly impairing malignant osteolysis through suppressing osteoclast activity, inducing apoptosis of osteoclasts, and impairing multiple myeloma growth that can result in skeletal-related events such as fracture and bone pain. Cumulative doses of bisphosphonates for malignant myeloma treatment tend to be higher than those for osteoporosis treatment. It is thought that long-term cumulative bisphosphonates treatment leads to atypical femur fractures.

CONCLUSION:

When considering of such atypical fractures occur bilaterally especially in patient receiving long term bisphosphonate, prophylactic intramedullary nailing might be prudent

REFERENCES:

1. Chang ST, Tenforde AS et al. Atypical femur fractures among breast cancer and multiple myeloma patients receiving intravenous bisphosphonate therapy.. 2012;51(3):524–527.