

Bilateral Atypical Femoral Fracture Following Long Term Alendronate Therapy: A Case Report

Foo YH, Diong TW, Leow VC, Manoharan K

Department of Orthopedics, Hospital Raja Permaisuri Bainun, Ipoh, Perak.

INTRODUCTION:

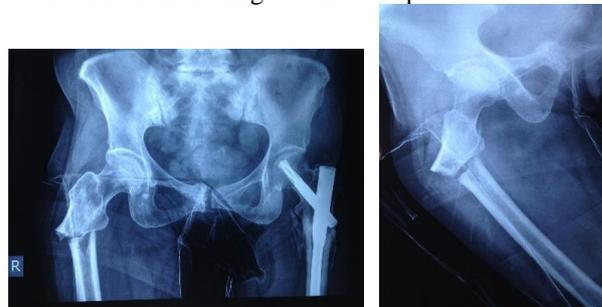
Bisphosphonates which inhibit bone resorption is effective in reducing the risk of vertebral and non-vertebral osteoporotic fractures in postmenopausal women¹. Alendronate which belongs to the bisphosphonate class of drugs is widely used in Malaysia for the treatment of postmenopausal osteoporosis. In recent years, there is an increasing number of reports linking the use of long term Alendronate with atypical fractures of the femur². We present a case of sequential bilateral atypical femoral fracture in a patient on long term Alendronate for osteoporosis. To the author's knowledge at the time of writing, this is only the second reported case in Malaysia of bilateral atypical femoral fracture following treatment with Alendronate.

CASE REPORT:

A 70 year-old postmenopausal woman presented to the Emergency Department of Hospital Raja Permaisuri Bainun in October 2016 after falling from a standing height while walking. She complained of severe right hip pain and was unable to ambulate after the trivial fall. Preceding this episode of trauma, she denied having any prodromal right hip or thigh pain. She was started on Alendronate 70mg weekly since the year 2009 for postmenopausal osteoporosis. There was a history of a similar fall from standing height in May 2013 whereby she sustained a closed subtrochanteric fracture of the left femur. The fracture was fixed with a proximal femoral nail and Alendronate stopped after the first fracture. On subsequent follow up in July 2014, she was restarted on Alendronate 70mg weekly based on bone mineral density measurement with DEXA scan.

Radiographs revealed a transverse subtrochanteric fracture of the right femur with cortical thickening of the femoral diaphysis and medial spike. The site of the second fracture is similar to the earlier fracture on the left side which had already united during this presentation. The second fracture was also treated with a proximal femoral nail.

Figure 1. Preoperative radiographs demonstrating transverse subtrochanteric fracture of the right femur with cortical thickening and medial spike.

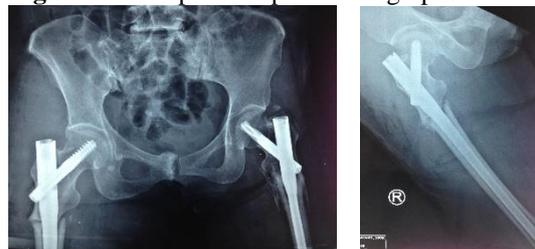


United fracture of left femur at the subtrochanteric region with proximal femoral nail in situ.

DISCUSSION:

This patient was on Alendronate for 4 years before sustaining the first atypical fracture and stopped taking Alendronate for 1 year. She was restarted on Alendronate for another 2 years before getting the second atypical fracture.

Figure 2. Postoperative plain radiographs



This case fulfilled all the major features for atypical femoral fractures defined by the American Society for Bone and Mineral Research (ASBMR) Task Force, namely minimal trauma, subtrochanteric fracture which is transverse, non-comminuted and have a medial cortical spike². Minor features such as history of bisphosphonate use, bilateral fracture and generalized cortical thickening were also present in this case.

Bisphosphonates suppresses bone turnover and is hypothesized to result in accumulation of bone microdamage and the development of insufficiency fracture of the femur at point of maximal weight-bearing stress, namely the subtrochanteric or diaphyseal region³. Since bilaterality is a minor feature of these fractures, surveillance of these patients is important as incipient stress fractures in the contralateral limb may propagate when there is reduced

ABSTRACT TRUNCATED