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REVIEW ARTICLE

ATYPICAL FRACTURE FEMUR FOLLOWING LONG TERM PREDNISOLONE AND ALENDRONATE MEDICATION: A CASE REPORT

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ARTICLE DETAILS

ABSTRACT

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In recent years several reports of atypical fracture (AFF) of the femur occurring in postmenopausal osteoporosis patients, on long term bisphosphonate therapy, are noted in the literature. In comparison only, few cases of these type of fractures occurring in patients, on concomitant glucocorticoid and bisphosphonate medication, are reported. Here, we are reporting one such case belonging to this sub-group.

KEYWORDS

Atypical fracture femur; Glucose-induced osteoporosis, Bisphosphonates.

1. INTRODUCTION

Antiresorptive bisphosphonates are prescribed to treat postmenopausal osteoporosis. They are also commonly used for the prevention and treatment of Glucocorticoid-induced osteoporosis (GIOP). Long term use (> 5 years) of bisphosphonates, are associated with the risk of Atypical fracture of femur, possible mechanisms are currently being debated [1]. Previously published case was in an elderly postmenopausal osteoporosis patient involving sub trochanteric region of femur [2]. Our case being reported is, atypical fracture in mid-diaphyseal region of femur occurring in a relatively younger female patient, who was on long term therapy with oral prednisolone and alendronate.

2. CASE REPORT

A 51-year-old female patient was admitted to the Orthopaedic ward, with

the diagnosis of left femur fracture following a history of fall at home. Further questioning in the ward revealed, she had a very low impact injury due to slip and fall from a standing position. She also gave history of taking oral prednisolone and alendronate for more than 5 years, for her underlying condition Systemic lupus erythematosus. Careful scrutiny of X-rays revealed features of AFF (Figure 1). She denied any previous history of prodromal thigh pain, except for generalised body aches. Contralateral femur X-rays showed diffuse cortical thickening of mid-diaphyseal segment. No stress fracture was visualised (Figure 2). Fracture femur was treated with locking intramedullary fixation. There was delay in fracture healing and fracture union occurred eventually after 10 months. Antiresorptive drugs were discontinued and switched to alternative therapy. She was also advised to report immediately if she develops any prodromal pain in the contralateral thigh.



Figure 1: Radiograph of left femur showing mid-diaphyseal, short oblique fracture, with lateral cortical thickening and medial spike.



Figure 2: Radiograph of contralateral right femur showing cortical thickening

3. DISCUSSION

Atypical fracture femur (AFF) is a recognised entity related to long term

use of Bisphosphonate drugs. They were first reported by Odvina CV, et al in the year 2005 as a case series of 9 cases [3]. In the year 2014, American Society for Bone and Mineral research (ASBMR) taskforce have revised

their definition for the AFF from the initial definition stated in the year 2010 [1]. Accordingly, fracture must occur “along the femoral diaphysis from just distal to the lesser trochanter to just proximal to the supracondylar flare”, and four out of five major features must be present. Those features are (1) fracture must be associated with minimal or no trauma, (2) substantially transverse or short oblique, (3) complete or incomplete (complete fractures may have a medial spike and incomplete fracture must involve lateral cortex), (4) non comminuted or minimally comminuted or accompanied by periosteal reaction of the lateral cortex, and (5) presence of localised periosteal or endosteal thickening of the lateral cortex at the fracture site. Our reported case meets the ASBMR criteria.

Incidences of AFF, has led to the anxiety among treating physicians and patients alike, in turn, expert reviews, new guidelines and treatment algorithms for treating osteoporosis are being published in the literature eg. “A summary of the Malaysia clinical Guidance on the management of post-menopausal and male osteoporosis, 2015”, published in the year 2016 by Yeap SS et al, The Malaysian Osteoporosis Society committee working group for the clinical guidance on the management of Osteoporosis, 2015 [4].

However, there is a relative paucity of literature pertaining to the incidence of AFF's in the subgroup, Glucocorticoid-induced Osteoporosis (GIOP). In the reported 9 cases of Odvina CV et al two patients received alendronate in combination with glucocorticoids [3]. They observed in those two patients 1 to 3 years of usage of alendronate, unlike in other seven patients, where treatment was for more than 5 years. In our reported patient, alendronate was used for more than 5 years.

The efficacy of bisphosphonate therapy in women and men taking glucocorticoids has mostly been studied for only 1 to 2 years, and long-term safety data is lacking [5]. Further incidence reports and studies pertaining to this sub-group may help in understanding and developing

new guidelines and treatment algorithms for managing GIOP. Due attention to the early clues like prodromal thigh pain, radiological signs of cortical thickening may help in early detection of this complication in patients, on long term bisphosphonate therapy. Bone scan or MRI imaging may be necessary to identify an impending fracture.

REFERENCES

- [1] Shane, E., Burr, D., Abrahamsen, B., Adler, R.A., Brown, T.D., Cheung, A.M. 2014. Atypical Subtrochantalic and diaphyseal femoral fractures: second report of a task force of the American Society for Bone and Mineral Research. *Journal of Bone and Mineral Research*, 29, 1-23.
- [2] Chew, P.C.C., Julaihi, B., Ibrahim, Z.A. 2013. Spontaneous subtrochanteric femoral stress fracture related to alendronate: a case report. *Malaysian Orthopedic Journal*, 7, 70-73.
- [3] Odvina, C.V., Zerwekh, J.E., Rao, D.S., Maalouf, N., Gottschalk, F.A., Pak, C.Y.C. 2005. Severely suppressed bone turns over: a potential complication of alendronate therapy. *The Journal of Clinical Endocrinology & Metabolism*, 90, 1294-1301.
- [4] Yeap, S.S., Hew, F.L., Damodaran, P., Chee, W., Lee, J.K., Goh, E.M.L. 2016. A summary of the Malaysian Clinical Guidance on the management of postmenopausal and male osteoporosis, 2015: The Malaysian Osteoporosis Society Committee Working Group for the clinical guidance on the management of osteoporosis, 2015: Osteoporosis and Sarcopenia, 2, 1-12.
- [5] Adler, R.A., El-Hajj Fulehan, G., Bauer, D.C., Camacho, P.M., Clarke, B.L., Clines, G.A. 2016. Managing osteoporosis in patients on long term bisphosphonate treatment: Report of a task force of the American Society for Bone and Mineral Research. *Journal of Bone and Mineral Research*, 31, 16-35

