Risk Of Atypical Femoral Fracture Following Bisphosphonate Use

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INTRODUCTION:

Atypical femoral fractures (AFF) are also known as bisphosphonate-related proximal femoral fractures. These conditions commonly occurred in women who has been taking them regularly to reduce the risk of fracture. However, long term use of it can increase the hazard of developing AFF[1].

REPORT:

This case report portrays a 69 years old post-menopausal woman, with a history of osteoporosis being treated with bisphosphonates for several years who had trivial fall upon exiting from her car. She presented with the complained of right thigh pain and inability to weight bear post fall. Physical examination revealed right thigh obvious deformity and tenderness. Radiographing imaging showed right subtrochanteric femur fracture (Figure 1) which consistent with an AFF criteria according to American Society for Bone and Mineral Research[2].

Figure 1: Subtrochanteric transverse fracture on the right side

She was then treated with cephalomedullary intramedullary nail fixation as the method of internal fixation (Figure 2). Decision on withdrawing the bisphosphonate was made, that is, bisphosphonate holiday and strict non-weight-bearing of the affected leg were advised for optimal outcome[3]. After 2 months of follow up, she was no longer symptomatic and radiographic imaging showed callus formation (Figure 3).

Figure 2: Post-operative

Figure 3: Callus formation at fracture site.

CONCLUSION:

With this report, attention should be given to those patients who are at risks. Further research is suggested to understand the underlying mechanisms and correlations of AFFs in postmenopausal women.

REFERENCES:

1. Yoon RS et al. Long-term bisphosphonate usage and subtrochanteric insufficiency fractures: a cause for concern? J Bone Joint Surg Br. 2011 Oct;93(10):1289-95. doi: 10.1302/0301-620X.93B10.26924. PMID: 21969423.
2. Giannini S, et al. Atypical femoral fractures. Clin Cases Miner Bone Metab. 2013 Jan;10(1):30-3. doi: 10.11138/ccmbm/2013.10.1.030. PMID: 23858308; PMCID: PMC3710007.
3. Farrukh AM et al. Bisphosphonate-induced atypical femoral shaft fracture: A case report. Radiol Case Rep. 2023 Sep 2;18(11):4048-4051. doi: 10.1016/j.radcr.2023.08.040. PMID: 37691757; PMCID: PMC10482883.