Malaysian Orthopaedic Journal 2025 Vol 18, Supplement A

Atypical Femur Fracture : Tale Of 2 Spectrum

[1]Nur Akmalyana Z; [1]Hamizah Z; [1]Sasidaran R; [1]Abdul Muttalib AW
[1]Department of Orthopaedics, Hospital Tuanku Ja'afar Seremban, Negeri Sembilan, Malaysia

INTRODUCTION:

Atypical femoral fracture is a low-energy fracture that occurs in the subtrochanteric region or diaphysis of the femur. It is often associated with varus deformity or anterior bowing, as well as impaired bone remodelling and bisphosphonate use. A relatively high risk of delayed healing or non-union is anticipated. Successful management requires a comprehensive approach, incorporating both medical and surgical interventions, along with careful monitoring for bilateral involvement.

CASE SERIES:

Case 1: A 71-year-old woman with underlying rheumatoid arthritis on methotrexate therapy sustained a close midshaft fracture of the right femur after a fall from a standing position. An X-ray revealed a minimally comminuted, short oblique fracture with a medial spike and localized periosteal thickening. Signs of insufficiency fracture present. She was treated with a long cephalomedullary nail. Six months later, she developed pain in her left thigh. A follow-up X-ray showed localized lateral cortical thickening and beaking over the subtrochanteric region of the left femur. Consequently, prophylactic nail fixation was performed on the left femur.

Case 2: A 77-year-old woman with underlying osteoporosis, on long-term bisphosphonate therapy, sustained a midshaft fracture of the left femur following a fall from a standing height. Radiographic evaluation revealed a transverse fracture at the midshaft of the left femur, for which she underwent fixation with a long cephalomedullary nail. A contralateral X-ray of the right femur demonstrated localized periosteal thickening and beaking of the lateral cortex, indicative of potential stress-related changes.

CONCLUSION:

These cases highlight critical considerations in managing atypical femoral fractures among elderly patients with underlying health conditions. Methotrexate-induced osteopathy is also subset in the prevalence of atypical femur fracture in addition to long-term bisphosphonate use. Both cases highlights the necessity for individualized treatment plans that consider comorbidities and previous therapies to optimize surgical outcomes and minimize complications. Serial radiographic monitoring for signs of stress fractures, beaking or other complications is essential in this vulnerable population to enhance recovery and maintain mobility post-fracture.

REFERENCES:

1.Sasaki S et al., Low-energy diaphyseal femoral fractures associated with bisphosphonate use and severe curved femur: a case series. J Bone Miner Metab. 2012