Submitted by: Maseeh uz Zaman,[1] Zafar Sajjad,[1] Nosheen Fatima,[2] Unaiza Zaan,[3] Rabia Tahseen,[3] Areeba Zaman[3]

[1] Department of Radiology, Aga Khan University Hospital (AKUH), Karachi, Pakistan
[2] Department of Nuclear Medicine, Dr Ziauddin Hospital, Karachi, Pakistan
[3] Student MBBS, DMC, DUHS, Karachi, Pakistan

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A 72 years old lady, known case of osteoporosis and has been on bisphosphonate therapy for last 5 years. She started complaining of bilateral groin pains radiating to thighs. Following plethora of investigations were done and shown in chronological order. What is the probable diagnosis?

Figure 1: Plain X-ray pelvis AP view performed on 01/08/2014

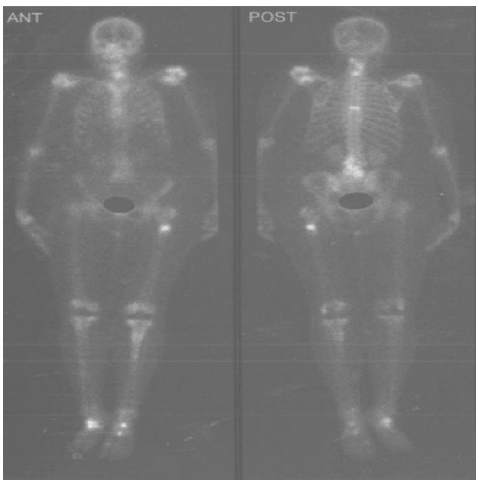

Figure 2: Bone scan shows abnormal uptake over left proximal femur with bilateral THR, widespread degenerative and osteoporotic changes (03/09/2014)

Figure 3: X-ray pelvis AP view after mild trauma (05/09/2014)

Figure 4: X-ray pelvis AP view after ORIF (07/09/2014)

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QUIZ

Answers

This is a case of alendronate (bisphosphonate) induced osteopetrosis and idiopathic proximal subtrochanteric fracture of left femur. Her plain X-ray pelvis revealed a small area of periosteal elevation over proximal part of lateral cortex of left femur and this is consistent with an early insufficiency fracture. Despite of labeled osteoporosis, cortical thickness of both femora is good. Bisphosphonate has an anti-osteoclastic effect and prolong use results in impaired bone modeling with accumulation of microfractures and weakening of bone. Prolong prodormal symptoms, thick cortices and an isuffciency fracture involving the lateral cortex of proximal femur is characteristic triad in patients on bisphosphonate theraoy more than 3-5 years. Bone scan revealed enhanced osteoblastic activity over site of early insufficiency fracture over left proximal femur. X-ray pelvis (5/9/2014) reveals a transverse, non-comminuted subtrochantericfracture, typical for Idiopathic proximal femoral fracture in patients on bisphosphonate therapy. Due to impaired remodeling, reunion is slow and internal fixation with intramedullary nail and locking screw with injectable teriparatide (parathormone) is the current stand of care.