A Case of Paget’s Disease Involving Pelvic Bone in a Patient with Tophaceous Gouty Arthritis

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Paget’s disease is a localized disorder of bone remodeling that typically begins with excessive bone resorption followed by an increase in bone formation [1,2]. This osteoclastic overactivity followed by compensatory osteoblastic activity leads to a structurally disorganized mosaic of bone (woven bone), which is mechanically weaker, larger, less compact, more vascular, and more susceptible to fracture than normal adult lamellar bone.

Several studies reported association between Paget’s disease of bone and gout, which have speculated that high turnover of bone in Paget’s disease produces an increased nucleic acid turnover with resultant hyperuricemia [3,4]. However, the incidence of Paget’s disease is in Asia is rare.

A 84-year-old woman presented with erythematous swelling of right third fingertip and tophi discharge lasting over several weeks, and was admitted to hospital for...
Figure 3. Bone marrow biopsy. (A) Irregularly thickened bony trabeculae with distinct cement lines (H&E stain, ×100), and (B) increased activity of multinucleated osteoclast (arrowhead) and osteoblast (arrow) (H&E stain, ×200).

The patient was diagnosed with gout about 15 years ago. She denied trauma and injection of affected joint. She had chronic kidney disease stage 4 and hypertension. The patient had fever 38.2°C and blood pressure was 145/92 mmHg. Erythematous swelling with tenderness of right third fingertip and whitish tophi discharge was detected. Laboratory examination revealed hemoglobin 10.6 g/dL, hematocrit 30.7%, platelets 204,000/mm³, and white blood cell count 7,200/mm³. Blood urea nitrogen was 57.8 mg/dL, creatinine 2.43 mg/dL, albumin 3.6 g/dL, and total calcium 8.7 mg/dL. Liver function test was unremarkable, whereas alkaline phosphatase was elevated to 802 IU/L (reference, 104 ∼ 338 IU/L). Pain radiography of bilateral hands showed destruction of multiple distal interphalangeal joints with tophi (Figure 1A). Three phase bone scan revealed possible soft tissue infection with reactive bone change of the fingertip (Figure 1B). Furthermore active bone lesions in right pelvic bone, sacrum, left femoral head and left proximal femur were detected incidentally (Figure 1C). Plain radiography showed sunburst lesion in left proximal femur (Figure 2). Biopsy of bone marrow and pelvic bone demonstrated variable cellularity from nearly acellular to normocellular marrow with thickened bony trabeculae, distinct cement line, and mosaic pattern bone (Figure 3A). Numerous, large multineucleated osteoclast and osteoblast along the bone line was noticed, which are specific finding of Paget’s disease (Figure 3B). This gout patient was diagnosed with secondary infection and osteomyelitis of right third fingertip. Paget’s disease detected and confirmed incidentally in the process of evaluation. Paget’s disease is rare in Asia and should be considered in cases of high turn-over disease of bone. Bone biopsy is helpful when Paget’s disease could not be confirmed with image findings.

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CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES