Balkan Med J 2025;42:166-7

Identifying Paget's Disease in the Elderly-an oft-missed Diagnosis

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An 81-year-old man with type 2 diabetes, hypertension, coronary artery disease, a 4-year history of forgetfulness, 2-year low backache, and an in situ pacemaker was admitted to the geriatric service with cellulitis and sepsis-induced delirium. Following successful sepsis management, he continued to report significant low backache and showed discomfort upon hip examination. Routine labs showed serum creatinine of 1.3 mg/dl, serum calcium of 7.6 mg/dl (corrected), and serum phosphate of 2 mg/dl. His serum 25-hydroxy-vitamin D level was 5.3 ng/ml (normal: 20-40 ng/ml) with an intact parathormone (PTH) level of 119 pg/ml (normal: 10-65 pg/ml), suggesting vitamin D deficiency and likely reactive PTH elevation. Plain X-rays showed no fractures, and dual-energy X-ray absorptiometry of the lumbar spine and femoral neck gave a T-score of -1.9. Elevated serum alkaline phosphatase levels (1,670 U/l) without hepatobiliary disease on ultrasound prompted consideration of bone metastases, though low serum calcium posed a diagnostic dilemma. A whole-spine computed tomography (CT) scan with bilateral hips revealed degenerative changes in the cervico-dorso-lumbar spine, reduced height in the D9 and L5 vertebrae with some ill-defined lytic areas, but no soft tissue involvement. The skull CT scan, however, revealed diffuse cranial mixed lytic-sclerotic lesions (Figure 1). Possible diagnoses included hyperparathyroidism, multiple myeloma, and fibrous dysplasia, but imaging favored Paget's disease of the bone as the likely diagnosis.[1] The patient received intravenous zoledronic acid (5 mg), resulting in marked improvement in back pain and tenderness. After 3 months, he remains pain-free with serum calcium and alkaline phosphatase levels of 9.2 mg/dl and 110 U/l, respectively.

Paget's disease of the bone is the second most common metabolic bone disorder after osteoporosis.[2] It has an initial osteoclastic phase of resorption followed by an osteoblastic phase of disorganized, structurally weak bone formation.[2] Paget's disease is most common in individuals of British descent and is considered rare among Asians, including Indians.[3] Additionally, many patients are asymptomatic

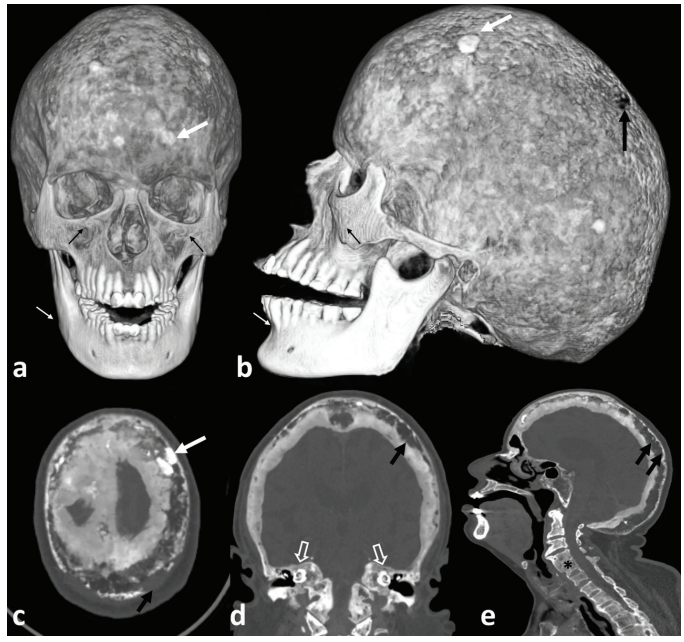

FIG. 1. Non-contrast computed tomography scan images show a tam-o'-shanter skull on frontal (a) and lateral (b) volume-rendered images. The cranial vault and orbito-naso-maxillary bones (thin black arrows) are affected to a lesser extent, while the mandible (thin white arrows) remains unaffected. Axial (c), coronal (d), and sagittal (e) sections of the multiplanar reconstructions reveal generalized trabecular alteration in the skull and spine (asterisk), with mixed lytic and sclerotic areas producing a "cotton-wool appearance." Dense sclerosis (thick white arrows) and lytic areas (thick black arrows) indicate "osteoporosis circumscripta" (active osteolytic phase). Notably, the skull base and petrous temporal bone are involved, sparing the encased otic capsule (hollow arrows). The vertebral involvement (asterisk) shows a "picture-frame vertebra."

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Received: October 09, 2024 **Accepted:** October 28, 2024 **Available Online Date:** March 03, 2025 • **DOI:** 10.4274/balkanmedj.galenos.2024.2024-10-31
Available at www.balkanmedicaljournal.org

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Cite this article as: Kumar A, Verma A, Kaur U, Chakrabarti SS. Identifying Paget's Disease in the Elderly-an oft-missed Diagnosis. Balkan Med J.; 2025; 42(2):166-7.

at diagnosis.[4] In this case, the diagnosis arose incidentally while investigating potential malignancy. Paget's disease should be considered in cases of isolated elevated alkaline phosphatase without hepatobiliary disease, with vitamin D deficiency, hyperparathyroidism, and malignancy ruled out.[5] This case was complicated by the coexistence of vitamin D deficiency, probable reflex elevation of PTH, and the patient's ethnicity, where Paget's prevalence is low. However, typical CT findings and a significant clinical response to zoledronate confirmed the diagnosis. The normalization of alkaline phosphatase levels and sustained symptom improvement on follow-up supported this diagnosis.

Informed Consent: Written informed consent for publication obtained from legal guardian (son) of patient.

Authorship Contributions: Concept- U.K., S.S.C.; Supervision- S.S.C.; Data Collection and/or Processing- A.K., A.V.; Analysis and/or Interpretation- A.V., S.S.C.; Literature Review- A.K., S.S.C.; Writing- A.K., S.S.C.; Critical Review- A.V., U.K., S.S.C.

Conflict of Interest: No conflict of interest was declared by the authors.

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