

## CASE IMAGE

# Paget's disease of bone in the patient presented with a bowed leg

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**Key Clinical Message**

In dealing with bowed limbs along with increased alkaline phosphatase (ALP), even if the typical changes to the face are not very noticeable at first glance, Paget's disease of the bone (PDB) should be suspected, and the necessary investigations should be carried out to confirm the diagnosis.

**Abstract**

Paget's disease of the bone (PDB) is the second most prevalent metabolic bone disorder worldwide with disorganized bone remodeling. Here, a patient is presented with pain and bending of the right leg, whose skull and forehead changes are not noticeable at first glance, but with clinical suspicion and additional diagnostic evaluations, PDB diagnosis is confirmed for the patient.

**KEYWORDS**

"cotton wool" appearance, bowed leg, Paget's disease of the bone, PDB, protruding forehead

## 1 | CASE DESCRIPTION

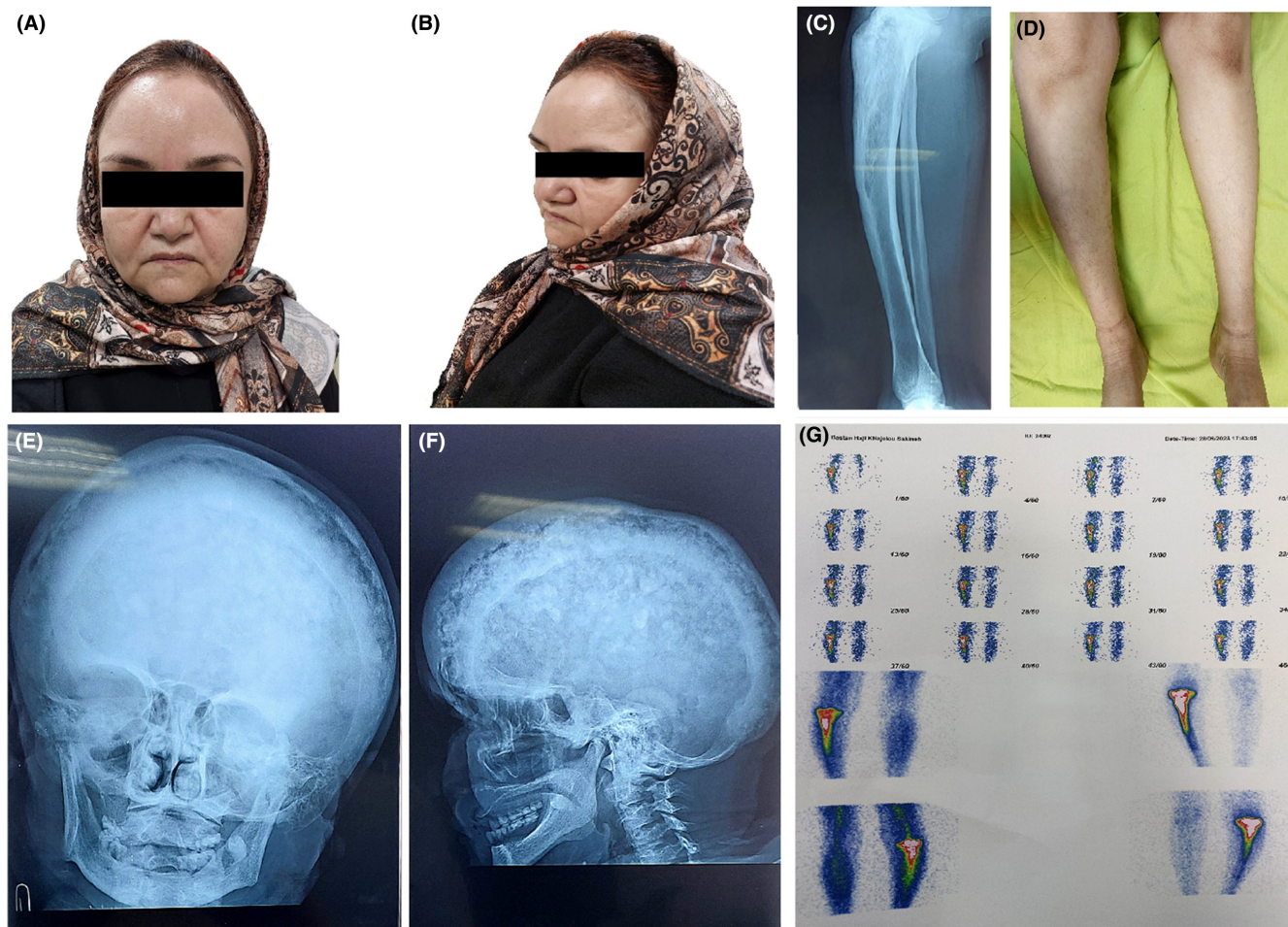
Paget's disease of the bone (PDB) is the second most prevalent metabolic bone disorder worldwide, with a prevalence rate of 1.5%–8.3% characterized by disorganized bone remodeling as a result of fast bone resorption and bone formation by osteoclast and osteoblasts activity, respectively.<sup>1–3</sup> Along with long bone deformities, protruded foreheads, fractures, and hearing loss may occur.<sup>4</sup> In case of doubt, the diagnosis must be confirmed by radiographic modalities. In the diagnostic procedure, the radionuclide bone scan has a high diagnostic accuracy.<sup>5</sup>

The patient is a 57-year-old woman with a history of bone pain in her right leg from 2 years ago. The right bowed leg (Figure 1C,D) was obvious during the examination. By

drawing more attention and asking the patient's daughter about the change in the patient's face compared to a few years ago, the patient's protruding forehead and the large size of the entire skull attracted attention (Figure 1A,B). According to the significant high alkaline phosphatase (3450 IU/L), typical "cotton wool" appearance, and overridingly enlarged frontal bone in skull X-ray (Figure 1E,F), the whole-body scan three-phase study following injection of 15 mCi Tc-99m-MDP was requested. Abnormal diffuse radiotracer distribution in the right leg (Figure 1G), abnormal radiotracer extravasation in the right leg, abnormal diffuse radiotracer uptake in the skull, right bowed tibia, L3, and right hemi-pelvis were seen. Based on the total evidence obtained from physical examination, X-ray, laboratory, and whole body scan, PDB was diagnosed, and treatment with bisphosphonate was

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**FIGURE 1** Protruding forehead (A, B), right bowed leg (C, D), “cotton wool” appearance and over-riding enlarged frontal bone (E, F), increase in absorption of right curved tibia in whole bone scan (G) in Paget’s disease.

started. A 5 mg single-dose Zoledronic acid infusion over 20 min was administered because of its high potency, efficacy, and ease of use. The patient was referred to physical therapy for rehabilitation. It was recommended that the patient refer to the rheumatology clinic at 3-month intervals for follow-up and decision on the continuation of the treatment according to management strategy.

#### AUTHOR CONTRIBUTIONS

**Mehrzaad Hajjaliloo:** Conceptualization; investigation; supervision. **Sepideh Tahsini Tekantapeh:** Conceptualization; data curation; formal analysis; investigation; methodology; resources; supervision; writing – original draft; writing – review and editing.

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We did not receive funding for this article.

#### CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest.

#### DATA AVAILABILITY STATEMENT

The patient details are available in the electronic medical records and can be made available from the authors on request.

#### ETHICS STATEMENT

The research followed the tenets of the Declaration of Helsinki.

#### CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal’s patient consent policy.

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