

Images in Rheumatology

# Parathyroid Adenoma Presenting as Femoral Tumor Lesion in a 27-Year-Old Woman

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Metabolic bone diseases should be considered in the differential diagnosis of osteolytic lesions. Here, we describe a case of primary hyperparathyroidism with multiple osteolytic lesions that improved following parathyroidectomy.

A healthy 27-year-old woman presented with left knee pain following mild trauma. Radiography (October 2020) revealed an osteolytic lesion in the distal epiphysis of the left femur (Figure 1A). Subsequent blood analysis showed hypercalcemia (13.3 mg/dL) with elevated parathyroid hormone levels (917 pg/mL). Further investigations (parathyroid ultrasound and scintigraphy, both performed in December 2020) identified a solid thyroid lesion, consistent with an enlarged hyperfunctioning parathyroid gland. Femur computed tomography (CT) scan (January 2021) and 18F-choline positron emission tomography (PET)/CT (February 2021) showed multiple osteolytic lesions in the femur and throughout the skeleton, suggestive of brown tumors.

The patient underwent right parathyroidectomy (February

2021). Anatomopathological analysis confirmed the presence of a parathyroid adenoma without malignant histological features. After initiating calcium and vitamin D treatment, blood calcium levels progressively normalized (postoperative nadir of 7.5 mg/dL), and radiological imaging revealed improvement of bone lesions (Figure 1B), with normalization of the 18F-choline PET/CT images over the next 18 months.

Concomitantly, bone mineral density (BMD) improved markedly following parathyroidectomy (Figures 1C,D). The patient experienced resolution of symptoms and returned to daily activities without residual pain. She is still receiving calcium supplementation 3 years after surgery.

This case highlights the successful diagnosis and management of hyperparathyroidism-induced osteolytic lesions, emphasizing the importance of including a bone metabolic study in the diagnostic approach of osteolytic lesions. This case also underlines the positive effect of parathyroidectomy on the evolution of BMD and bone lesions.

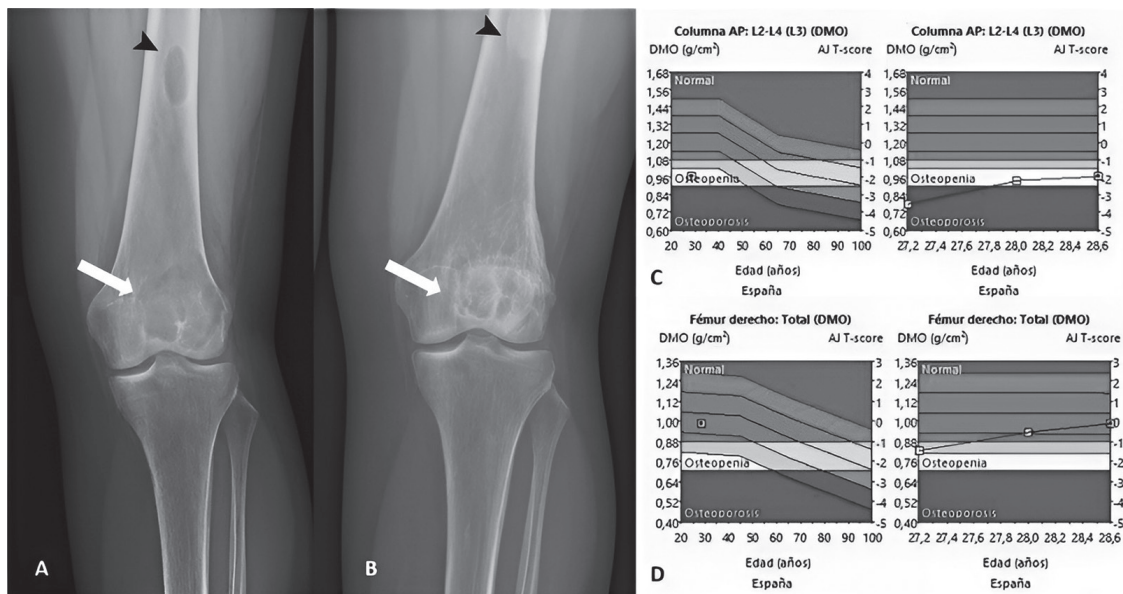


Figure 1. (A) Anteroposterior views of the osteolytic lesions in the distal epiphysis (arrow) and diaphysis (arrowhead) of the left femur; and (B) healing of the lesions 1 year after the parathyroidectomy, with the diaphyseal lesion appearing hyperdense (arrowhead). There was a marked increase in bone mineral density at the (C) lumbar spine (+24.5%), and (D) total hip (+19.8%) at this time. AJ: *adulto joven* (young adult); AP: anteroposterior; DMO: *densidad mineral ósea* (bone mineral density).