Phantom Menace: Unraveling Brown Tumor In A Young Patient With Renal Hyperparathyroidism

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INTRODUCTION:

Brown tumors, also known as osteitis fibrosa cystica, are rare skeletal manifestations of hyperparathyroidism seen in approximately 5-15% of individuals, particularly in those with renal hyperparathyroidism (secondary hyperparathyroidism) due to chronic kidney disease.[1]

REPORT:

We report a 33-year-old female with End-Stage Renal Disease (ESRD) and renal hyperparathyroidism, diagnosed in 2007, who experienced acute right arm pain while adjusting her blanket. She reported hearing a "crack" sound, followed by immediate pain and deformity. Despite multiple low-energy injuries between 2021 and 2024, resulting in wheelchair dependency, she had a varus deformity in her right arm, and bilateral lower limb deformities with left limb shortening. Further examination revealed deformity of right arm with no neurovascular compromised. She also has significant bilateral jaw enlargement.

Radiological imaging showed a midshaft humeral fracture with an expansile lytic lesion and multiple similar lesions in both proximal femurs (Figure 1). The skull X-ray indicated a classic "salt and pepper" appearance (Figure 2).

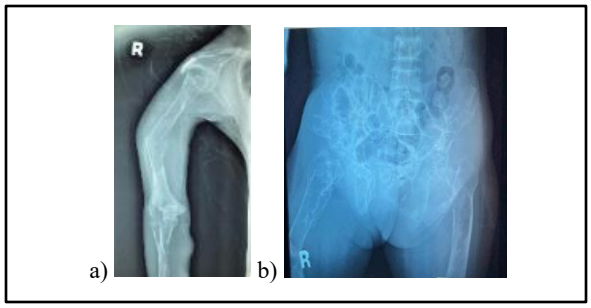

Figure 1: (a) X-Ray Right Humerus (AP) shows midshaft of right humerus fracture with expansile, well-defined lytic lesion and thin

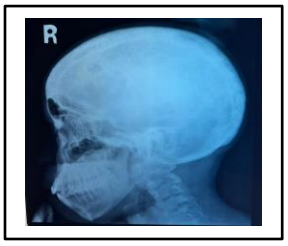

Figure 2: X-Ray imaging of the skull which shows 'salt and pepper' sign

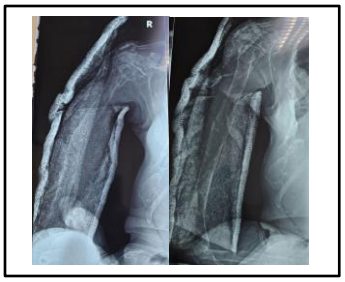

Figure 3: X-Ray Right Humerus at 6 months post trauma which shows acceptable alignment

Lab tests showed elevated alkaline phosphatase (546 U/L) and parathyroid hormone (63.7 pg/ml) with low calcium (2.04 mmol/L).

Despite the deformities, she opted for conservative management with a U-Slab cast and planned for right inferior parathyroidectomy. Post-trauma X-rays revealed acceptable alignment (Figure 3) and promising clinical outcomes.

CONCLUSION:

Managing brown tumors in renal hyperthyroidism requires a multidisciplinary approach. Early detection and intervention are essential to prevent unnecessary procedures and effectively manage this menace. Primary therapy in controlling hyperparathyroidism can lead to tumor regression, significantly enhancing the quality of life, especially for young patients.

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