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On the Cover

What's the diagnosis?

Case Discussion

45-year-old female with history of chronic kidney disease since her 20 years, on peritoneal dialysis since her 38 years, presents with a tumefaction on the right hip. She had low compliance to technique and severe non controlled hyperparathyroidism (PTH > 1000 pg/ml) with refractory hypercalcemia (total serum calcium > 11 mg/dl) and hyperphosphatemia (serum phosphorus > 6.5 mg/dl) since her 40 years. She always refused parathyroidectomy and hemodialysis. A local computed tomographic scan (CT) showed multiple calcified masses in pelvic region connected to both iliac and ischio-pubic bones, the largest adjacent to right iliac bone (images A and B). Bone scintigraphy showed radiocontrast fixation in those areas. Although a biopsy was not performed, these masses were interpreted as brown tumors. After 4 months, she developed ischemic lesions in the lower limbs secondary to severe peripheral artery disease. After 6 months, a bilateral amputation above the knees was performed. She was transferred for hemodialysis but died after a month for reasons not clarified.

Description of the submitted images

A contrast CT scan of the abdomen and pelvis was obtained by multislice helicoidal technique. The following images were obtained by volume rendering 3-D reconstruction of the pelvic region.

Image A: Volume 3-D reconstruction of the pelvic region - Anterior View

Image B: Volume 3-D reconstruction of the pelvic region - Posterior view

Description: Exuberant calcified masses connected with the right ilium's wing and crest, left ischio-pubic bone and left greater trochanter. The largest mass is adjacent to right iliac bone. These masses were interpreted in context of renal osteodystrophy as brown tumors. Also there are multiple areas of bone reabsorption scattered across the pelvic bones, being more pronounced in the iliac bones and pubic symphysis. Extensive calcifications are present in the abdominal aorta and iliac vessels.

Teaching Points

Brown tumors are osteolytic lesions produced in context of high bone turnover induced by elevated parathormone levels. They traduce prolonged and severe disease and are rarely seen nowadays since the introduction of calcimimetics and vitamin D analogues. The early diagnosis and appropriate treatment are essential to prevent serious complications and to improve prognosis.

(Images provided by Carolina Belino, Clara Santos and Joao Carlos Fernandes, Vila Nova de Gaia, Porto, Portugal)