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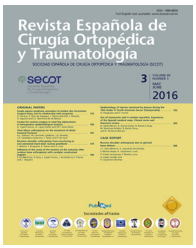

CASE REPORT

Brown tumour in phalanx of the ring finger due to chronic kidney failure. A case report☆

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KEYWORDS
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Abstract Brown tumours are highly vascular lytic bone lesions found in primary and secondary hyperparathyroidism. The *brown* term is given due to the red-brown colour of the tissue, which is due to the accumulation of haemosiderin. The case is presented of a 29 year-old male with chronic renal failure, who had a mass in the tip of the ring finger after a trauma of 4 months onset, which had increased progressively in size and pain. He was treated surgically, by amputation, with no recurrence 10 months after the surgery.

PALABRAS CLAVE
Tumor pardo;
Insuficiencia renal;
Tumor;
Mano

Tumor pardo en falange del dedo anular por insuficiencia renal crónica. Reporte de un caso

Resumen Los tumores pardos son lesiones óseas líticas altamente vasculares encontradas en el hiperparatiroidismo primario y secundario. El término *pardo* se le da por el color rojo-marrón de los tejidos, dado por la acumulación de hemosiderina. En el siguiente caso clínico, presentamos a un paciente masculino de 29 años de edad, con insuficiencia renal crónica terminal, quien cursa con 4 meses de aparición de masa en punta del dedo anular derecho posterior a un trauma, que ha aumentado en tamaño y dolor de forma progresiva. Fue tratado de forma quirúrgica, mediante amputación, preservando márgenes sanos y, luego de 10 meses de la cirugía, no ha presentado recidiva.

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Introduction

Brown tumours (BT) are highly vascular lytic bone lesions found in primary and secondary hyperparathyroidism. Inside the tumour there is abundant fibrovascular tissue and giant cells similar to osteoclasts. The *brown* term is given due to the red-brown colour of the tissue, which is due to the accumulation of haemosiderin.[1]

Traditionally and historically, BT have been reported in patients of all ages, especially those with primary hyperparathyroidism. However, since this entity now being diagnosed in the early stages BT is less frequent in these patients. It is more common, and found in up to 13%, in patients with secondary hyperthyroidism.[1,2]

Hormonal and biochemical changes occur in chronic renal failure (CRF) that give rise to calcifications in the organism and changes in the osseous skeleton. This disease is known as renal osteodystrophy. Secondary hyperparathyroidism is a consequence of these changes and is found in most patients who require haemodialysis.

The pathophysiology of secondary hypoparathyoidism is reduced excretion of phosphorous due to renal failure, which generates a reduction in the active form of vitamin D (calcitriol) and serum calcium levels. In addition to hyperphosphataemia and hypocalcaemia, CRF causes decreased activity of 1-alpha-hydroxilase, which reduces intestinal absorption of calcium. Hypocalcaemia, therefore, causes an increase in parathormone secretion and in bone resorption. Some patients can present severe secondary hyperparathyroidism, with the consequent appearance of lytic bone lesions known as BT.[3–6]

BT can compromise the axial or appendicular skeleton. On X-ray they show up as cystic images since they generally do not compromise the cortical layers, however, they can resemble single or multiple lytic lesions as well. Generally when the lesions are small, in the initial stages, treating the hyperparathyroidism can cause involution of the tumour.

Presentation of a case

We present the case of a 29-year-old male patient with a history of right nephrectomy, diagnosed with end-stage kidney disease, treated with haemodialysis 3 days a week, and presenting with clinical symptoms of 4 months' onset that comprised the appearance of a mass at the tip of the right ring finger after trauma. The patient reported that the mass had been gradually increasing in size and pain and therefore he was admitted to our institution via the emergency department.

After a thorough physical examination, we found that the mass in the right ring finger measured approximately 3 cm × 3 cm and was compromising the circumference of the finger tip deforming the nail plate (Fig. 1A and B).

X-rays were then taken, which showed a lytic lesion almost completely compromising the distal phalanx of the ring ringer, partially respecting the joint surface of the distal interphalangeal joint and a small amount of the proximal part of the phalanx. Other less striking associated lesions were also observed in the phalanges and metacarpals (Fig. 2).

After assessing the patient clinically and radiographically, it was concluded that he presented a BT in the distal phalanx of the ring finger, for which the tip of the finger was amputated, preserving the healthy margins. Macroscopically, a mass of 2.5 cm × 3 cm was confirmed, in which it was not possible to identify the distal phalanx (Fig. 3A). Histologically, our institution's Department of Pathology described a well-defined lesion, comprising fibroblast-rich stroma with red blood cell extravasation and abundant multinucleated giant cells arranged in lobules separated by reactive bone tissue, with cystic areas with haematic content, which confirmed the diagnosis (Fig. 3B–D).

The patient is undergoing treatment for CRF and secondary hyperparathyroidism in the nephrology and endocrinology departments and has not suffered a recurrence or further tumours to date.

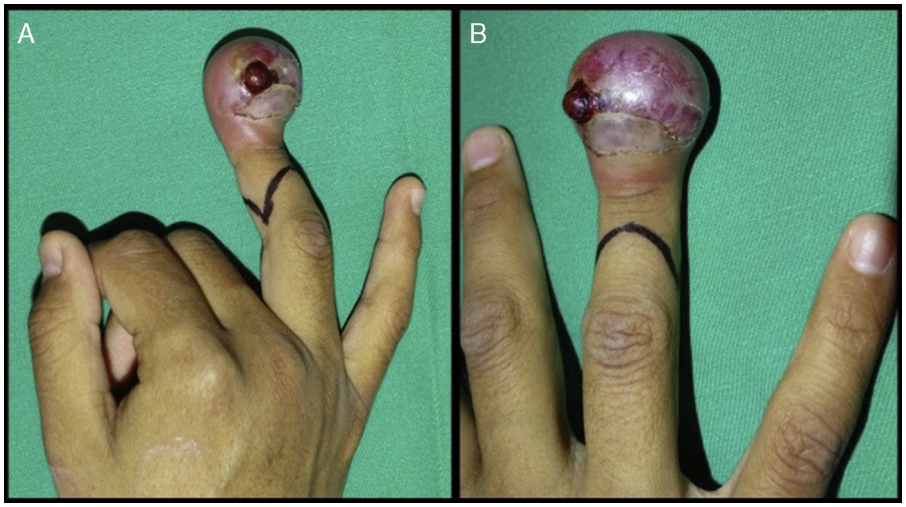

Figure 1 (A and B) The clinical appearance of the right ring finger, with highly compromised soft tissue and pain.