Clin Kidney J (2012) 5: 176–177
doi: 10.1093/ckj/sfs014
Advance Access publication 13 March 2012

CKJ

Images in Nephrology
(Section Editor: G. H. Neild)

Tackling the 'brown' frown

Ratan Jha, Dilip Gude, Suryanarayan Mandal and Ramasubbarayudu Batta

Department of Nephrology, Medwin Hospitals, Hyderabad, India

Correspondence and offprint requests to: Ratan Jha; E-mail: rtnjha@yahoo.com

Keywords: brown tumour; cinacalcet; soap bubble

A 41-year-old non-diabetic hypertensive male with chronic kidney disease (Stage V secondary to chronic interstitial nephritis) on maintenance haemodialysis presented with a recent onset of pain in the right lower limb. An X-ray of the lower leg showed a solitary, lytic soap bubble-like mass in the lower end of the fibula (Figure 1). Labs showed a serum creatinine of 11.4 mg/dL, blood urea 124 mg/dL, Na 137 mEq/dL, K 4.5 mEq/dL, Ca 8.1 mg/dL, phosphorous 3.8 mg/dL, intact parathyroid hormone (PTH) 1688 pg/mL (normal 10–55 pg/mL), alkaline phosphatase 822 U/dL (normal 40–150 U/L) and a Vitamin D level of 65 ng/mL (normal 30–74 ng/mL). Radionuclide bone scan showed an increased uptake at the lower end of the fibula. A diagnosis of chronic kidney disease with secondary hyperparathyroidism and brown tumour of the fibula was made. He was continued on oral calcium carbonate (1 g), non-calcium-based phosphate binders (sevelamer carbonate 2400 mg), calcitriol (1 mcg thrice weekly) and cinacalcet (90 mg) with a periodic dose titration based on levels of calcium, phosphorus and PTH. After 2 years, an almost complete recovery of the brown tumour was seen (Figure 2) with a serial decreasing trend of serum PTH from 1688 to 845, 762, 512 and 190.7 pg/mL at the last visit.

Brown tumours result from excess osteoclast activity and bone remodelling, which occurs in response to elevated PTH levels. They consist of a collection of osteoclasts intermixed with fibrous tissue and poorly mineralized woven bone [1], the brown coloration primarily due to haemosiderin deposition. Radiologically, they are well-defined presenting as lytic lesions with intact, thinned out and expanded cortex [2]. They are hypervascular on angiograms and intensely active on bone scans [3].

We emphasize the fact that many patients with brown tumours, who are not candidates for corrective parathyroid surgery owing to their various comorbidities, do considerably improve on medical treatment with cinacalcet circumventing complications, such as fractures, spinal cord compression, disfiguration and diplopia. This case highlights the resolution of a brown tumour with medical management via lowering of high PTH.

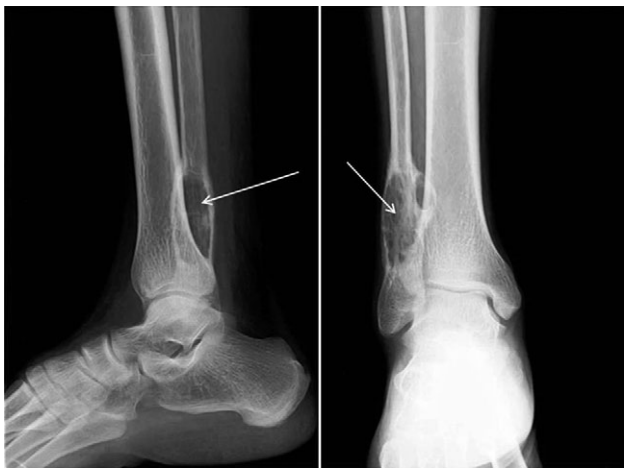

Fig. 1. Radiograph showing solitary, lytic soap bubble-like mass in lower end of fibula.

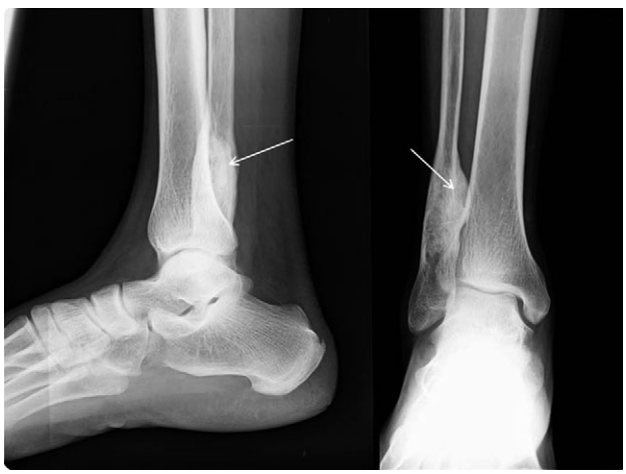

Fig. 2. Radiograph showing resolution of brown tumour with sclerosis.

Conflict of interest statement. None declared.

References

1. Resic H, Masnic F, Kukavica N *et al.* Unusual clinical presentation of brown tumor in hemodialysis patients: two case reports. *Int Urol Nephrol* 2011; 43: 575–580
2. Kheir F, Simeone F, Johnston S *et al.* A 32-year-old man with recurrent kidney stones and an abnormal chest radiograph. *Chest* 2011; 140: 1654–1658
3. Mak KC, Wong YW, Luk KD. Spinal cord compression secondary to brown tumour in a patient on long-term haemodialysis: a case report. *J Orthop Surg (Hong Kong)* 2009; 17: 90–95

Received for publication: 21.1.12; Accepted in revised form: 30.1.12