Images in Nephrology
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Uraemic tumoural calcinosis

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A 59-year-old Chinese patient had a history of end-stage renal disease secondary to glomerulonephritis and underwent peritoneal dialysis. Nine years after initiation of dialysis, he developed an enlarging ‘tumour’ over his right wrist in the absence of antecedent trauma. Within 1 month of presentation, he was unable to use chopsticks because of the painful mass. At that time, his serum calcium and phosphate levels were 2.77 and 2.84 mmol/l, respectively (calcium x phosphate product 7.9 mmol²/l²), with a serum intact parathyroid hormone level (iPTH) of 12 pg/l (normal range 0.07–0.56 pg/l). Alkaline phosphatase level was normal. Plain radiograph showed a large mass of encapsulated amorphous calcium phosphate around his right wrist joint (Figure 1A). Bone erosion into the radial aspect of the trapezium by metastatic calcification (Figure 2) was evident radiologically.

Fig. 1. (A) There is marked metastatic calcification in the right wrist. (B) The periarticular soft tissue calcification in the same patient regressed over a period of 2 months with improved phosphate control.
Metastatic calcification occurs around large joints (hip, shoulder) more often than small joints. This condition of juxta-articular precipitation of amorphous calcium phosphate is secondary to a combination of excess phosphate not being effectively removed by dialysis and the increased use of calcium-containing phosphate binder. The problem is further aggravated by concomitant utilization of vitamin D analogues and a high calcium dialysate concentration, in the presence of adynamic bone disease.

Instead of surgical excision, the mainstay of therapy should preferably be targeted at reducing the phosphate burden in the absence of an additional calcium load [1]. Aluminum-containing phosphate binders were prescribed to our patient, together with dietary advice and haemodialysis therapy. Of note, when our patient’s calcium × phosphate product fell below 4.9 mmol²/l² during the following 2 months, the size of his wrist swelling decreased markedly, accompanied by radiologic evidence of calcific deposits dissolution (Figure 1B).

Conflict of interest statement. None declared.

References