Uraemic tumoural calcinosis

Muhsen Al-ani,¹ Konstantinos Parperis,² Christina DeBaun Kelly^{3,4}

¹Maricopa Medical Center, Phoenix, Arizona, USA

²Department of Medicine, Maricopa Medical Center and University of Arizona College of Medicine, Phoenix, Phoenix, Arizona, USA

³Department of Internal Medicine, Maricopa Medical Center, Phoenix, Arizona, USA

⁴University of Arizona College of Medicine Phoenix, Phoenix, Arizona, USA

Correspondence to

Dr Muhsen Al-ani,
dr.muhsenalani@gmail.com

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DESCRIPTION

A 22-year-old Hispanic woman, visiting from Mexico, with a medical history significant for end-stage renal disease secondary to hypoplastic kidneys on peritoneal dialysis for the past 2 years and hypertension on nifedipine 30 mg daily, losartan 50 mg daily and prazosin 10 mg daily, presented with shortness of breath after missing peritoneal dialysis for 3 days, she was also reporting two large masses over her clavicles that were of indolent onset over the last year. Physical examination showed blood pressure of 191/130, heart rate of 77 bpm and normal temperature, there were crackles on bilateral lung bases and two subcutaneous nodular rubbery masses over the sternoclavicular joints (figure 1). Blood work showed haemoglobin 4.7 g/dL, blood urea nitrogen (BUN) 137 mg/dL; creatinine 20.87 mg/dL; calcium 10.4 mg/dL; phosphorus 9.7 mg/dL; alkaline phosphatase 240 IU; erythrocyte sedimentation rate 48 mm/L and parathormone intact was 2308.7 pg/mL, vitamin D

Figure 1 Photograph of the two rubbery nodular masses over the sternoclavicular joints; skin is intact with no erythema.

Figure 2 Chest X-ray showing dense calcifications at the sternoclavicular joints, bilaterally.

Figure 3 CT scan of the chest, without contrast, showing extensive overgrowth and calcinosis of the bilateral clavicular heads at the sternoclavicular articulation.

level was 18 ng/mL, $(Ca \times P) = 100.88 \text{ mg}^2/\text{dL}^2$ (the $Ca \times P$ product should be maintained at level $<55 \text{ mg}^2/\text{dL}^2$). Chest X-ray was significant for borderline cardiomegaly, prominent pulmonary vasculature, diffuse coarsely interstitial markings and dense calcifications at the sternoclavicular joints, bilaterally (figure 2). CT scan of the chest showed extensive overgrowth and calcinosis of the bilateral clavicular heads at the sternoclavicular articulation (figures 3 and 4). The patient was admitted and received 3 sessions of haemodialysis with low calcium dialysate over 4 days, she also received blood transfusions for her normocytic anaemia, and we started her on sevelamer carbonate 800 mg three times a day and cinacalcet 60 mg daily. On day 3, her laboratory results had improved with haemoglobin level 9 g/dL; BUN 85 mg/dL; creatinine 10.23 mg/dL; calcium 8.7 mg/dL; phosphorus 7 mg/dL $(Ca \times P) = 60.9 \text{ mg}^2/\text{dL}^2$. On day 4, the patient started feeling better, we recommended further management with parathyroidectomy but she wanted to go back to her hometown to finish treatment.

Tumoural calcinosis is an uncommon type of extraosseous periarticular calcification characterised by large rubbery or cystic masses containing calcium-phosphate deposits. It is more common in end-stage renal disease associated with tertiary hyperparathyroidism but it might occur as an

Figure 4 Three-dimensional image from the CT scan of the chest showing tumoural calcinosis over the sternoclavicular joints.

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inherited disease in the setting of normal renal function.¹ The condition is usually multifocal, occurring around the weight-bearing joints or easily overused small joints²—our case showed sternoclavicular joint involvement, which has none of those features.

Medical therapy, including phosphate binders to reduce calcium and phosphate reabsorption, modification of dialysis

with longer session durations and increased frequency, and the use of low calcium dialysate to enhance calcium and phosphate clearance, can mobilise the calcium deposits of uraemic tumoural calcinosis.³

Surgical resection of the calcified mass is the main treatment for the primary type, but should be avoided in haemodialysis-related types, which are instead often treated with parathyroidectomy.⁴

Learning points

- ▶ Tumoural calcinosis is a clinical diagnosis confirmed with imaging study.
- ▶ High calcium-phosphorus (Ca×P) product and secondary/tertiary hyperparathyroidism play an important role in the pathogenesis of tumoural calcinosis.
- ▶ The treatment for tumoural calcinosis is to reduce the serum phosphate levels with phosphate binders, and longer and/or more frequent dialyses with low calcium dialysate to enhance calcium and phosphate clearance.

Competing interests None declared.

Patient consent Obtained.

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