Letter and Reply

Evaluation and treatment of penile gangrene in a chronic dialysis patient

Sir,
With great interest, we have read the article by Liao et al. [1] entitled ‘Penile gangrene in a chronic dialysis patient’ in a recent issue of Nephrology Dialysis Transplantation. They reported a case of penile gangrene in a 66-year-old man with diabetic nephropathy in end-stage renal disease (ESRD) on regular haemodialysis for 1 year. The patient received partial penile resection to stem the progression of gangrene, but he died of overwhelming sepsis 5 days after the operation. The authors attributed the penile gangrene to calcification of the bilateral penile artery (documented by non-contrast computed tomography), associated with high serum calcium phosphate production (65 mg²/dl²), and Foley catheter retention, which might have further decreased blood flow to the penile artery and subsequently facilitated distal penile gangrene. However, the status of secondary hyperparathyroidism (i.e. serum parathyroid hormone level) and the definite pathological diagnosis were not clarified. In our opinion, the probability of calciphylaxis (calcific uraemic arteriolopathy) associated with diabetes, ESRD and secondary hyperparathyroidism is high. A pathological review to identify the evidence of calciphylaxis (e.g. medial calcification and intimal hyperplasia of medium and small arteries) is crucial. Further, emergent parathyroidectomy should be considered because the study of Karpman et al. [2] has revealed that the survival was better in patients who underwent parathyroidectomy (75%) than those treated with local debridement or penectomy alone (28%). In addition, recent studies have supported a role of hyperbaric oxygen therapy in the treatment of some patients with calciphylaxis, particularly as in the absence of uncontrolled secondary hyperparathyroidism there are few therapeutic options [3,4].

Conflict of interest statement. None declared.


Reply

Sir,
We thank Lai and colleagues for their comments regarding our article. In this patient, the pathological findings of partial penectomy depicted calcification of medial layer and intimal hyperplasia in the penile artery, which were consistent with the diagnosis of calciphylaxis. However, considering the impressive clinical appearance, we favoured ‘penile gangrene’ and not ‘penile calciphylaxis’. Lai and colleagues also debate the status of parathyroid hormone (PTH). PTH was not always significantly elevated in patients with end-stage renal disease and calciphylaxis. Wilmer et al. [1] reported 35% of patients with calciphylaxis had PTH levels less than three times the upper limit of normal (150 pg/ml). In this patient, the latest intact PTH level was 118 pg/ml, and therefore, parathyroidectomy was not arranged. In addition, they suggest hyperbaric oxygen therapy to improve wound healing of calciphylaxis. Nevertheless, most of the wound distributions were in the extremities but not penis. As far as we know hyperbaric oxygen therapy had not been reported to treat penile gangrene successfully.

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