Images in Hospital Medicine

Penile Calciphylaxis

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Figure 1. Calciphylaxis lesion over the glans penis

A 65-year-old man with a medical history significant for chronic kidney disease (CKD) and currently on hemodialysis (HD), hyperlipidemia, heart failure with reduced ejection fraction presented to the emergency department with complaints of penile pain for the previous 2 weeks. Initially, the patient noticed a bump in the area around the glans penis and gradually progressed to the extent that the entire area was red, black, and extremely tender. The patient had been on HD for the previous 2 years and had missed many sessions. He was receiving HD approximately once weekly for the previous 4 months. He did not have constitutional symptoms, oral lesions, nail changes, urinary or bowel symptoms, musculoskeletal symptoms, trauma to the area, or previous sexually transmitted diseases, and no similar lesions elsewhere on the skin or in any other area.

Examination of the penis revealed a violaceous, painful, ischemic lesion over the glans (Figure 1). Laboratory investigations were significant for normocytic normochromic anemia, blood urea nitrogen 80 mg/dl (9-28 mg/dl), creatinine 11.98 mg/dl (0.66-1.25 mg/dl), calcium 9.3 mg/dl (8.4-10 mg/dl), phosphorus 10.3 mg/dl (2.3-2.7 mg/dl), calcium-phosphorus product of 95.79 and high parathyroid (PTH) hormone levels 1323 pg/ml (7.5-53.2 pg/ml). As the patient declined any surgical interventions, a biopsy was not performed and the patient was treated empirically for penile calciphylaxis with hemodialysis, sodium thiosulfate, sevelamer, cinacalcet, and hydromorphone for pain management.

Calciphylaxis is characterized by calcification of arterioles and vessels in the dermis and subcutaneous adipose tissue. Painful cutaneous lesions are the primary presentation of this condition. It is often confused with thrombophlebitis, cellulitis, or livedo reticularis.[1] Ultimately these lesions become non-healing ulcers. Patients with a high PTH level at the beginning of dialysis, primary hyperparathyroidism, inadequate HD, PD, younger age, female gender, vitamin K antagonist, high serum calcium or phosphate, and an elevated plasma calcium x phosphate product have a higher risk of calciphylaxis.[2] Although rare, penile calciphylaxis is well-described with close to 50 cases reported and less than half of these presenting with isolated penile calciphylaxis.[3] Computed tomography, plain radiography, ultrasound, mammography, and bone scintigraphy have been used to support diagnosis.[4] Vascular calcification seen on plain radiograph has a high sensitivity for diagnosis.[5] A penile doppler ultrasound quantifies blood flow and demonstrates diffuse penile calcifications.[3] Skin biopsy is indicated if the diagnosis is uncertain, lesions are atypical, or if patients present with characteristic calciphylaxis without advanced CKD. Conservative management includes normalizing serum calcium and phosphate levels, sodium thiosulfate, pain management, and wound care. Wound debridement may require partial or total penectomy.[6] Surgical intervention has not been shown to have a survival benefit. Calciphylaxis has an estimated six-month mortality of 50 percent and must be promptly recognized by clinicians.

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

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