CASE REPORT

Penile Calciphylaxis in Chronic Renal Failure Patient: A Case Study

Omar Thanoon Dawood1, Azhar Amir Hamzah2, Dharmendra P1, Mohamed Azmi Hassali1

1School of Pharmaceutical Sciences, Universiti Sains Malaysia, Penang, Malaysia, 2Urology Unit, Department of Surgery, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

ABSTRACT
Penile calciphylaxis occasionally seen in chronic renal failure patients. Causes include vascular calcification in accordance with elevated levels of serum calcium and phosphorus. Worldwide very few cases have been reported and estimated nearly 4% of ESRF patients are affected. Now we are presenting a case of penile calciphylaxis in a 76-year diabetic patient with ESRF. The condition overall carries a poor prognosis. Postulated methods of treatment can be made includes primary wound care, calcium phosphate level reduction by hemodialysis and sodium thiosulfate, and parathyroid hormone level reduction.

Key words: Calciphylaxis, hemodialysis, renal failure

INTRODUCTION

Penile calciphylaxis occurs as a consequence of vasculopathy is seen in patients with diabetes with chronic renal failure on long term hemodialysis.[1] It also known as Calcemic Uremic Arteriolopathy (CUA).[2,3] It was first described in uremic patients by Bryant and White in 1898, though the term calciphylaxis was initially penned by Hans Selye in 1962.[4] It is uncommonly seen but with more patients developing renal complications after diabetes and renal transplant recipients rising, the numbers are likely to rise. This case report of penile calciphylaxis can help nephrologists, surgeons, and dermatologists to recognize it well and paying more attention to such patients due to the poor prognosis of calciphylaxis that can be associated with patient’s condition.

CASE REPORT

A 76-year-old, Malay gentleman with past medical history of diabetes mellitus, hypertension, ischemic heart disease (double vessel disease) ESRD on regular HD 1,3,5 for the past 6 years was admitted to the medical intensive unit for community acquired pneumonia in sepsis. The patient was unwell for the past 1/52, presented with progressive worsening shortness of breath and fever. He defaulted his regular hemodialysis for the past 2 sessions. On presentation, he was septic looking, lethargic and tachypneic with having a temperature spike of 38.6°C, blood pressure of 90/50 mmHg and pulse rate of 112 bpm. Auscultation reveals generalized crepitation. The patient was resuscitated and intubated for type 1 respiratory failure. Complete general examination was later revealed a penile ulcerous lesions and thickened buttock, thighs, and trunk. Proximal involvement associated with unfavorable prognosis. Pathogenetic pathways of penile calciphylaxis are still partially unclear:[5] As penile calciphylaxis commonly associated with ESRF patients, main risk factor for developing calciphylaxis is uremia.[6] Other factors such as raise parathyroid hormone and serum phosphate levels could be affiliated to vascular calcifications leading to penile calciphylaxis.[7] So far there have been no studies to support the role of parathyroidectomy as a modality of mainstream treatment of penile calciphylaxis, although it could relieve pain and speed up skin wounds.[8]

Close control of phosphatemia with phosphate-binding agents is crucial to prevent clinical development of penile calciphylaxis. Sodium thiosulfate has provided good result in treating calciphylaxis cutaneous wounds. Its role as a potent antioxidant has been noted to promptly decrease pain, and its chelating properties are affiliated with regression of calciphylaxis lesions showing a wide spectrum of involvement from small areas of livedo reticularis and single plaques to ulcerous and necrotizing lesions. Other possible areas of involvement are upper limbs, lower limbs, buttocks, thighs, and trunk. Proximal involvement associated with unfavorable prognosis. Pathogenetic pathways of penile calciphylaxis are still partially unclear.[5] As penile calciphylaxis commonly associated with ESRF patients, main risk factor for developing calciphylaxis is uremia.[6] Other factors such as raise parathyroid hormone and serum phosphate levels could be affiliated to vascular calcifications leading to penile calciphylaxis.[7] So far there have been no studies to support the role of parathyroidectomy as a modality of mainstream treatment of penile calciphylaxis, although it could relieve pain and speed up skin wounds.[8]

DISCUSSION

In general from literature, penile calciphylaxis cases were associated with end stage renal failure (ESRF) and diabetic nephropathy and vasculopathy.[9] Other associated conditions predisposing to calciphylaxis are malignancy, primary hyperparathyroidism, alcoholic cirrhosis, inflammatory bowel disease, systemic lupus erythematosus (SLE), chronic myelogenous leukemia (CML), and acquired immunodeficiency syndrome (AIDS).[10]

Common clinical presentation would be white or yellowish cutaneous lesions showing a wide spectrum of involvement from small areas of livedo reticularis and single plaques to ulcerous and necrotizing lesions. Other possible areas of involvement are upper limbs, lower limbs, buttocks, thighs, and trunk. Proximal involvement associated with unfavorable prognosis. Pathogenetic pathways of penile calciphylaxis are still partially unclear.[5] As penile calciphylaxis commonly associated with ESRF patients, main risk factor for developing calciphylaxis is uremia.[6] Other factors such as raise parathyroid hormone and serum phosphate levels could be affiliated to vascular calcifications leading to penile calciphylaxis.[7] So far there have been no studies to support the role of parathyroidectomy as a modality of mainstream treatment of penile calciphylaxis, although it could relieve pain and speed up skin wounds.[8]

For reprints contact: invoice@jbclinpharm.org

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.


© 2017 Journal of Basic and Clinical Pharmacy.
of subcutaneous calcifications. In addition, hyperbaric oxygen therapy increases oxygen delivery to tissues. By increasing oxygen supply, it promotes cutaneous lesions healing via neoangiogenesis, fibroblastic growth, and collagen expression.\[10\]

REFERENCES