



DERMATOPATHOLOGY

HISTOPATHOLOGIC REVIEW OF CALCEMIC UREMIC ARTERIOLOPATHY: CASE SERIES

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Background: Calcemic uremic arteriopathy (CUA), or calciphylaxis, is an uncommon disorder presenting clinically as skin ischemia and necrosis and histologically as vascular calcification and thrombosis of dermal and subdermal vasculature. Outcomes remain poor with high mortality rates. Due to the seriousness of the condition, it is important that clear diagnosis of CUA is established in order to initiate proper treatment, e.g. sodium thiosulfate.

Observation: We report two Filipino females with chronic kidney disease presenting with violaceous plaques and ulcers with eschar formation. Biopsies showed extensive dermal necrosis and calcifications of the vessels of the subcutaneous fat with multiple amorphous basophilic material and adipocyte necrosis.

Histologic examination remains the gold standard for diagnosis of CUA, and has been described as a morphologic spectrum of a calcific thrombogenic microangiopathy that begins with medial vascular calcification of small dermal and subcutaneous arterioles, leading to skin ischemia and eventual necrosis. Sensitivity can be increased by demonstrating microcalcifications through special stains. Current evidence on its pathogenesis points to active transformation of vascular smooth muscle cells into osteochondrocytic phenotypes, as well as deficiencies and defects in the function of inhibitors of vascular calcification. The histology varies depending on the stage of evolution, hence no definitive histopathologic criteria exists.

Key Message: Calcemic uremic arteriopathy is an uncommon disorder in ESRD patients that is mainly a calcific thrombotic vascular disorder. Key histopathologic findings to diagnose CUA include calcifications (distinct and microcalcifications) of dermal and subcutaneous vessels, vascular thrombosis and subsequent ischemic necrosis of the dermis and panniculus. The histologic findings are diverse and represent a morphologic spectrum following its pathophysiology.

