

Intramyocardial arteriosclerosis with calcification in a patient on haemodialysis due to diabetic nephropathy may not be related to calciphylaxis

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A 76-year-old man who had been on haemodialysis (HD) for 8 years due to diabetic nephropathy, was admitted for evaluation of asymptomatic, diffuse hypokinesia of the left ventricle (LV). Electrocardiography showed sinus rhythm, left ventricular hypertrophy (LVH), a Q wave in lead III, and a negative T wave in leads V5 and V6. Echocardiography showed LVH and diffuse hypokinesia with left ventricular ejection fraction (LVEF) 37%. Adenosine stress Tc-99m tetrofosmin cardiac scintigraphy revealed an uptake defect in

the inferior wall of the LV ([Supplementary material online, Figure S1](#)) and diffuse hypokinesia of the LV with a 35% LVEF ([Supplementary material online, Figure S2](#)). Coronary angiography showed total occlusion in segment 2 of the right coronary artery. Myocardial biopsy was performed to evaluate the cause of diffuse hypokinesia of LV. A myocardial biopsy showed severe stenosis of $\sim 50\ \mu\text{m}$ in diameter with calcification in the intramural arteriole ([Figure 1](#)), which seemed to be associated with diffuse hypokinesia of the LV because microangiopathy due to diabetes or cardiac calciphylaxis may occur

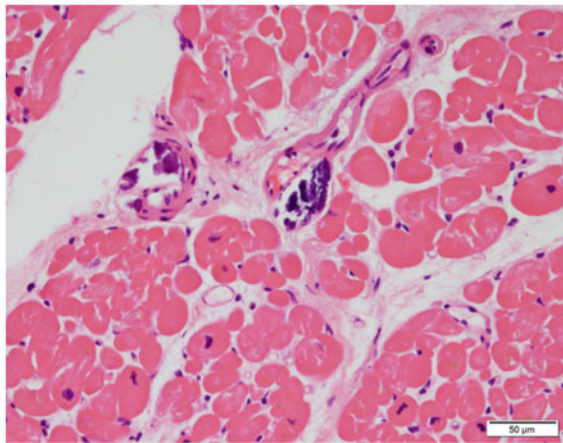


Figure 1 Haematoxylin and eosin staining of myocardial biopsy shows severely stenosed intramural arteriole with calcification (bars, 50 μm).

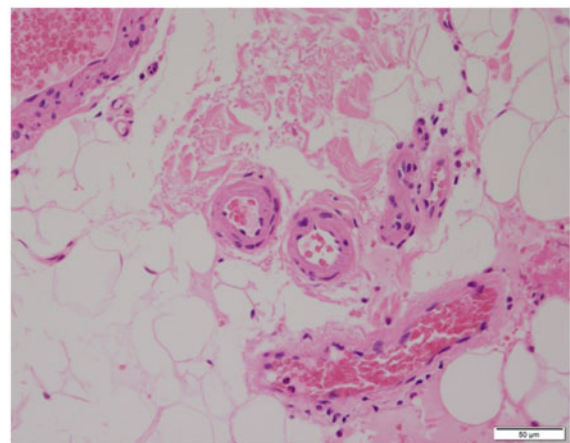


Figure 2 Haematoxylin and eosin staining of scalp skin biopsy shows essentially normal arterioles (bars, 50 μm).

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microcirculatory ischaemia to hypokinesia itself or associated with inferior old myocardial infarction. Incidentally, a biopsy of his scalp had been performed to evaluate skin cancer immediately before admission. Finally, skin lesion was not cancer but seborrhoeic keratosis, and we searched arteriole in the normal skin in the biopsied specimen. And, it showed no calcification or significant stenosis in subcutaneous arterioles of the same size (Figure 2). Calciphylaxis (or calcific uraemic arteriopathy) is a syndrome of calcification in the media of small arteries that induces stenosis, thrombosis, and skin necrosis in patients on HD. Recently, cardiac calciphylaxis has been reported in HD patients.¹ The present patient had a calcified lesion of the arteriole in the myocardium, but not the skin. These findings suggested that the mechanisms of calcification of the intramural small coronary artery may be different from calciphylaxis in patients on HD.

Supplementary material

Supplementary material is available at *European Heart Journal - Case Reports* online.

Consent: The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.

Conflict of interest: none declared.

Reference

1. Alam S, Kirkwood K, Cruden N. Cardiac calciphylaxis presenting as endocarditis. *Eur Heart J* 2012;**33**:416–416.