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Heart failure in a patient with polyarteritis nodosa

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A 77-year-old Japanese woman was referred to our hospital with worsening dyspnoea, purpura, and an ulcer on her leg that had persisted for 2 months. She had hypertension and dyslipidaemia. Her blood pressure was 151/97 mmHg and pulse was 111 b.p.m. Electrocardiography showed sinus rhythm, complete right bundle branch block, and negative T waves in leads V1–5 (Supplementary material online, *Figure S1*). The echocardiogram revealed left ventricular ejection fraction of 38%, severe hypokinesis of the apical wall, and mild hyperkinesis of the basal wall (*Videos 1 and 2*). Troponin-T test was negative. N-terminal-prohormone brain natriuretic peptide level was 131 239 pg/mL. She had rapidly progressive renal failure (blood urea nitrogen: 52.7 mg/dL; creatinine: 2.08 mg/dL). The renal function was normal 2 days earlier. Perinuclear antineutrophil cytoplasmic antibodies were normal. Chest radiographs showed bilateral lung congestion and cardiomegaly. We diagnosed heart failure (clinical scenario 1; New York Heart Association functional Class IV). She received furosemide (40 mg) and positive pressure ventilation. Two hours later, she developed atrial fibrillation (heart rate: 170 b.p.m.), and her systolic blood pressure deteriorated to 50 mmHg. We administered intravenous noradrenaline (0.1 μg/min/kg) and landiolol (10 μg/min/kg), but she died. An autopsy was conducted. Gross examination showed that the coronary arteries were patent, with no aneurysms. The small- to medium-sized coronary arteries showed inflammatory changes, narrowing (*Figure 1*), and occlusion causing myocardial necrosis. There was fibrinoid necrosis involving her thyroid gland (*Figure 2*), stomach, liver, and pancreas. According to the guidelines (Supplementary material online, *Table S1*), she was diagnosed with polyarteritis nodosa (PAN). PAN is a rare systemic vasculitis (2–33 cases per million individuals). Skin ulcers and rapidly progressive renal failure might be suggestive of PAN in patients with

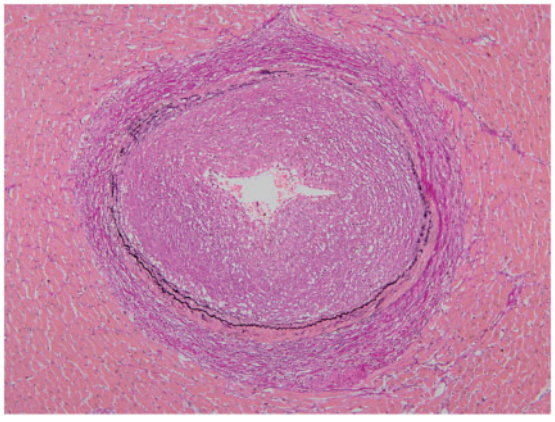

Figure 1 Elastica van Gieson stain. The small- to medium-sized coronary arteries showed inflammatory changes, narrowing.

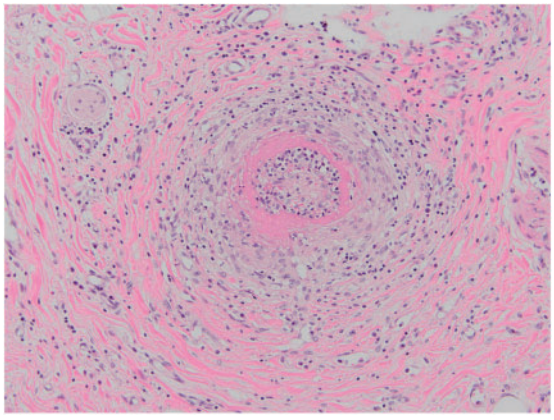

Figure 2 Haematoxylin–eosin stain. There was fibrinoid necrosis in her thyroid gland.

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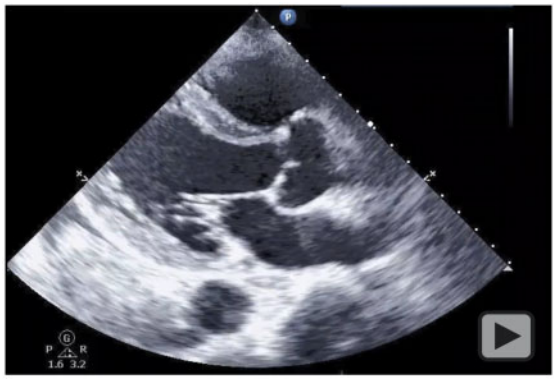
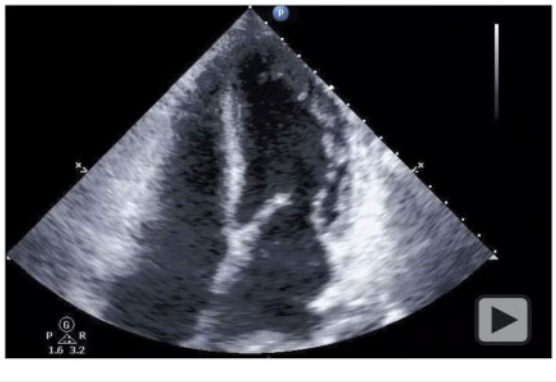


Video 1 UCG long axis view.



Video 2 UCG 4-chamber view.

heart failure. Glucocorticoids should be administered (40–60 mg/day). Early diagnosis could lead to early treatment and prevent mortality.

Supplementary material

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

Consent: The author/s confirm that written consent for submission and publication of this case report including image(s) and associated text has been obtained from the patient in line with COPE guidance.

Conflicts of interest: none declared.