

Morphological and compositional alteration of pericoronary arteritis in a patient with immunoglobulin G4-related disease

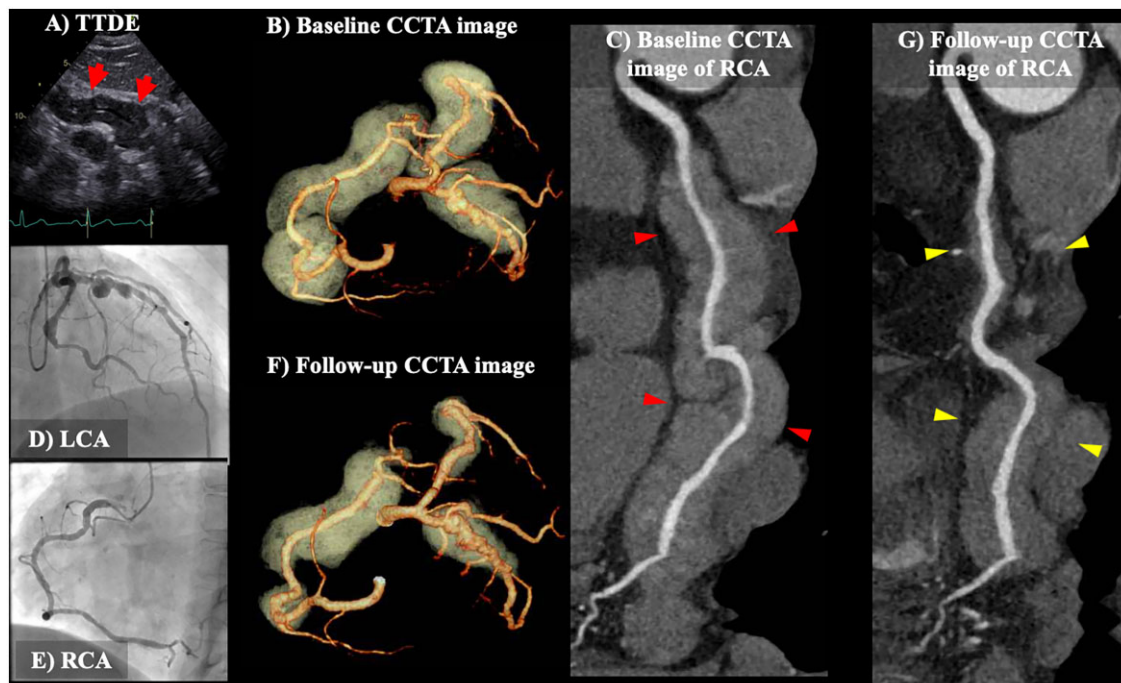
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A 60-year-old woman presented to the emergency department due to chest pain. She has a history of suspected immunoglobulin G4-related disease (IgG4RD) because of bilateral eyelid swelling and

increased level of serum immunoglobulin G4 (IgG4) (≥ 5 upper limit of normal). Electrocardiography demonstrated no ST-T segment changes (Supplementary material online, [Figure S1](#)), whereas cardiac troponin I



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Video 1 Transthoracic Doppler echocardiography at baseline.

level was transiently elevated (5.1 pg/mL on admission and 147 pg/mL 3 h later). Transthoracic Doppler echocardiography revealed soft tissue thickening around her coronary arteries (*Panel A* and [Video 1](#)). Furthermore, cardiac computed tomography angiography (CCTA) revealed aneurysmal dilatation of the proximal left anterior descending coronary artery (LAD) and soft tissue thickening of the whole coronary arteries (*Panels B* and *C*, red arrowheads, and [Supplementary material online, Figure S2A1–C1](#)). Emergent coronary angiography demonstrated aneurysmal dilatation of the LAD, with no significant structural or functional coronary artery stenosis (*Panels D* and *E*). Serum IgG4 level was markedly elevated at 1730 mg/dL. Fluorodeoxyglucose (FDG-) positron emission tomography/computed tomography (PET/CT) demonstrated FDG accumulation around the coronary arteries and thoracic aortic and left subclavian lymph node ([Supplementary material online, Figure S3C](#), red arrows). The patient was treated with prednisolone (0.6 mg/kg/day) and antico-

agulation and antiplatelet drugs. In parallel with the decreased IgG4 level (395 mg/dL), a 7-month follow-up CCTA revealed volume reductions in the soft tissue around the coronary arteries (*Panels F* and *G*, yellow arrowheads, and [Supplementary material online, Figure S3](#)), wherein decreased FDG uptake was confirmed with PET/CT ([Supplementary material online, Figure S3D](#)). Intracoronary optical coherence tomography imaging ([Supplementary material online, Figure S2D–F](#)) revealed increased neovascularisation density and macrophage infiltration lacking structural vessel layers. While CCTA images for pericoronary arteritis have been reported, this is the first case reported morphological and compositional alterations of coronary arteritis in a patient with IgG4RD undergoing a serial CCTA and PET/CT examination.

Supplementary material

[Supplementary material](#) is available at *European Heart Journal - Case Reports* online.

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