

Rapidly progressed coronary aneurysm in immunoglobulin G4-related disease

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A 62-year-old female presented with worsening angina. Sixteen months prior, she was diagnosed with possible immunoglobulin G4-related disease (IgG4-RD), concomitant with a coronary aneurysm at the proximal left anterior descending artery ([LAD], Panel A and C in Figure 1). She preferred medical therapy for IgG4-RD, which consists of prednisolone (0.6 mg/kg), anticoagulants, and antiplatelets. In addition to the coronary computed tomography angiography (CCTA) findings (every 3–4 months follow-up) on the regression of soft tissue thickening, since her serum IgG4 level was decreased and

less inflammation was observed on fluorodeoxyglucose positron emission tomography/computed tomography, prednisolone was gradually reduced (0.2 mg/kg). Four months prior to the consult, a low-grade fever was noted, and she tested positive for COVID-19 via a polymerase chain reaction test. Non-contrast chest computed tomography visualized an enlarged soft tissue thickening around the LAD. She complained of worsening chest pain on exertion, and emergent CCTA revealed an enlarged coronary artery aneurysm in the LAD (Panel B and D in Figure 1). Her serum IgG4 level

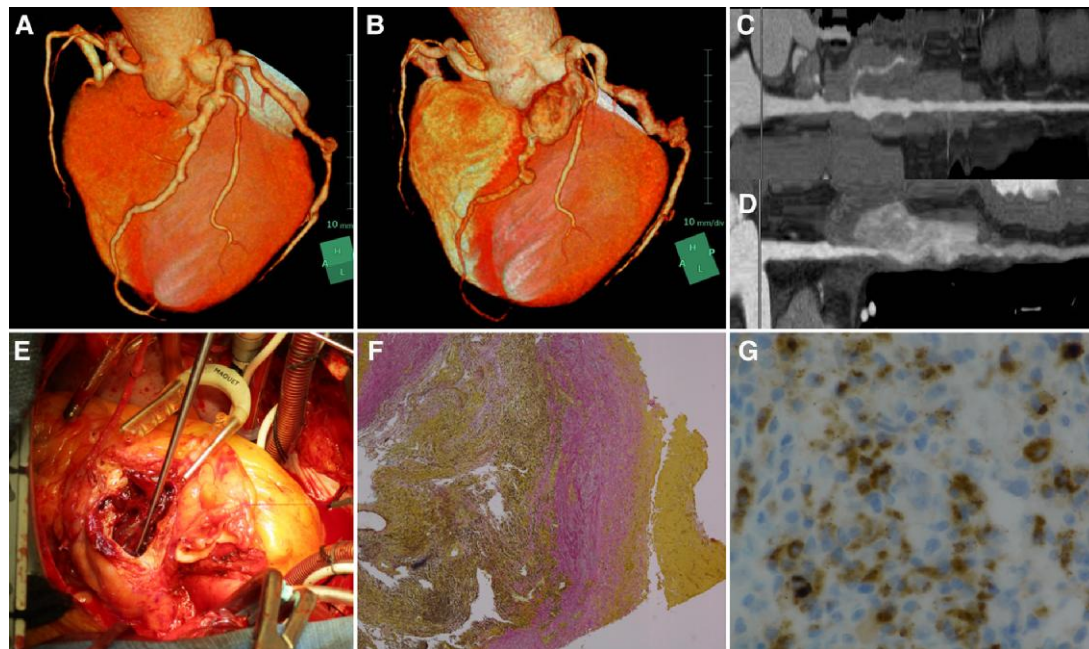


Figure 1 (A and C) Baseline CCTA images with coronary aneurysm at the proximal LAD. (B and D) Follow-up CCTA images showing enlarged coronary artery aneurysm in the LAD. (E) An image during open heart surgery. The coronary aneurysm was markedly filled with thrombus. (F) Pathology of the resected aneurysm. IgG4-positive plasma cells were infiltrated with fibrosis. (G) IgG4 staining revealed IgG4 positive cells. LAD, left anterior descending artery; CCTA, coronary computed tomography angiography; IgG4, immunoglobulin G4.

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(326 mg/dL) was elevated. She underwent an emergency coronary artery aneurysmectomy and a coronary artery bypass graft. The coronary aneurysm was markedly filled with thrombus (*Panel E* in [Figure 1](#)). Pathological examination of the resected aneurysm featured IgG4-positive plasma cells infiltration with fibrosis (*Panel F* and *G* in [Figure 1](#)), confirming the diagnosis of IgG4-RD. After the surgery, the patient was treated with prednisolone (0.2 mg/kg) and antiplatelet therapy (clopidogrel 75 mg) with monitoring of systematic disease progression using serum IgG4 levels and noninvasive imaging. Serial CCTA imaging provides useful information to monitor and diagnose patients with IgG4-RD, concurrent with a rapidly progressing coronary aneurysm.

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

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Data availability

The data will not be shared to protect the personal information of the patient.