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IMAGE FOCUS

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Giant coronary aneurysm in a patient with non-ST myocardial infarction

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A 69-year-old Caucasian male with a history of hypertension, dyslipidaemia, and abdominal aortic aneurysm was admitted due to a non-ST-segment elevation myocardial infarction. The electrocardiogram showed Q waves in leads DIII and aVF, and maximum troponin I was 4.30 ng/mL. A transthoracic echocardiogram revealed an anechoic spherical 34 mm × 37 mm structure, located at the lateral wall of the right atrium, suggestive of a cyst (Panel A). The coronary angiogram revealed a three-vessel disease, with multiple saccular aneurysms over the three coronary vessels, and a giant aneurysm of the mid-right coronary artery (Panels B and C). A computed tomography coronary angiogram was undertaken, and showed dilatation of all coronaries, with multiple small aneurysms and calcified atherosclerotic plaques. The entire middle segment of the right coronary artery was massively dilated, forming a giant aneurysm with 44 mm × 27 mm dimensions (maximal external length × width) (Panels D–G). The patient underwent a myocardial perfusion SPECT study, which showed a small area of inferobasal necrosis. Because of the huge dimension of the aneurysm, the patient was referred for surgical resection. Pathological report showed a muscular type artery with atheromatous plaques with extensive calcification and fibrosis, suggesting the atherosclerotic nature of the aneurysm.

Coronary artery aneurysms (CAA) are rare, especially when multiple and giant. In adults, the majority of cases are associated with atherosclerosis, whereas in children, Kawasaki disease is responsible for most cases. Excision of CAA is advocated on patients with ischaemia, significant growth over time, or in large aneurysms with the risk of rupture or thrombus formation, as in this case.

(Panel A) Transthoracic echocardiogram revealing an anechoic mass in relation to the lateral wall of the right atrium, without flow obstruction (arrow); (Panels B and C) coronary angiography demonstrating three-vessel disease, with diffuse saccular aneurysmal dilatations, and a giant aneurysm involving the middle segment right coronary artery (arrows); (Panels D–G) computed tomography coronary angiography demonstrating diffuse aneurysmal dilatation with atherosclerosis disease of the three major epicardial vessels and a giant aneurysm of the right coronary artery (arrows).

