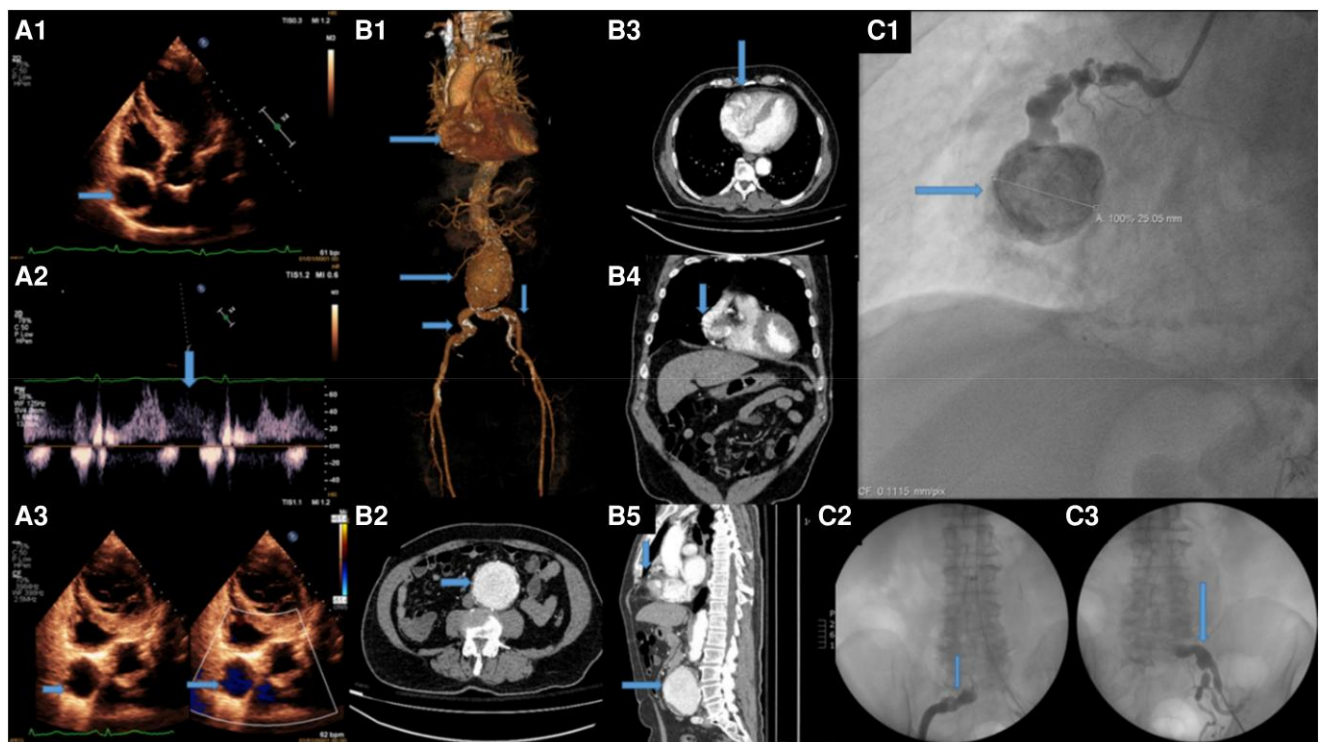


Multiple arterial aneurysms coexisting with giant right coronary artery aneurysm: an easy diagnosis by non-invasive imaging methods

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Panel A1: Transthoracic echo (five chamber view) revealing a cystic formation coming from the right atrioventricular groove. *Panel A2:* Diastolic flow inside the cystic mass. *Panel A3:* Transthoracic echo (five chamber view) with colour flow Doppler indicative of blood flow inside the cystic formation. *Panel B1:* Computed Tomographic Angiography (CTA) in 3D reconstruction showing Right Coronary Artery Aneurysm (CAA) as well as Abdominal (96 mm x 67 mm x 72 mm) and iliac aneurysms. *Panel B2:* Transverse section of Abdominal Aorta Aneurysm (AAA) in CTA. *Panel B3-B4:* Transverse, Coronal section of CTA revealing Right CAA. *Panel B5:* Sagittal section of CTA presenting Right CAA and AAA. *Panel C1:* Transradial coronary angiography showing giant (25 mm) aneurysm in the mid of Right Coronary Artery. *Panel C2-C3:* Angiography of left and right iliac aneurysms.

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Case description

A 75-year-old male with a history of hypertension and an endovascular repair of an infrarenal abdominal aorta aneurysm (AAA) 4 months ago presented with chest pain to the emergency department. Electrocardiogram showed no dynamic changes, while troponin was elevated. A transthoracic echocardiogram revealed severe left ventricular systolic dysfunction, normal right ventricular function, and moderate mitral/tricuspid regurgitation. A cystic formation in the right atrioventricular groove was indicative of a right coronary artery (RCA) aneurysm (Panels A1–A3; see [Supplementary material online, Videos S1 and S2](#)). We reviewed the pre-operative non-thoracic, non-ECG-gated computed tomographic angiography (CTA) of the aorta, and apart from the reported abdominal and iliac aneurysms, a contrast-enhanced mass arising from RCA (Panels B1–B5; see [Supplementary material online, Figure S1](#)) was shown. Coronary angiogram revealed severe lesions in left coronary artery and aneurysmal dilatation (25 mm) in the mid of a dominant RCA (Panels C1–C3; see [Supplementary material online, Video S3](#)). The decision of the heart team was surgery (coronary artery bypass grafting and excision of the aneurysm). The patient refused. Twelve months later, he is still alive (NYHA Class III).

Giant (>20 mm) coronary artery aneurysm (CAA) is a rare entity usually found randomly in a coronary angiogram (<0.02%). Right giant CAA can be easily diagnosed and assessed non-invasively by echocardiography and thoracic (or even abdominal) CTA as long as one knows where to look and what looks to be. Although giant CAAs rarely coexist with AAAs (the present case is the fourth published in the literature), the whole arterial tree should always be evaluated before proceeding to endovascular repair.

In cases with multiple arterial aneurysms, vasculitis should be suspected. However, in elderly males with affected large- and/or medium-sized arteries, atherosclerosis is by far the most common cause. Physicians should ask a detailed laboratory analysis if unexplained symptoms (headache, fever, jaw claudication, arthralgia/myalgia, malaise), physical examination findings (ophthalmic, cutaneous), basic laboratories results [full blood count, urinalysis, C-reactive protein (C-RP), erythrocyte sedimentation rate (ESR)], or radiological signs from CTA (thickening of the vessel wall or extravascular findings/lesions) exist. In our patient, only C-RP (11 mg/L) and ESR (31 mm/h) were slightly elevated. Aneurysms were considered caused by atherosclerosis.

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 Committee on Publication Ethics guidance.

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Data availability

The data underlying this article are available in the article and in its online [supplementary material](#).