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# Giant coronary aneurysm. A rare entity and an unusual finding in forensic practice. About a case☆

## Aneurisma coronario gigante. Una entidad rara y un hallazgo inusual en la práctica forense. A propósito de un aso

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We report the case of a 58-year-old male with a history of acute myocardial infarction (AMI) in 2005, treated with thrombolysis with satisfactory results. He suffered re-infarction 8 months later which was treated with balloon coronary angioplasty in the posterior descending coronary artery and 2 inferior AMIs in 2008 and 2011, which were treated successfully with fibrinolysis. The coronary angiography performed in 2005 evidenced the presence of ectasia in the left main coronary artery and a 1-cm aneurysm in the right coronary artery (RCA). Follow-up was irregular and the patient discontinued the anticoagulation regimen (acenocoumarol). In 2019, he was found deceased in his home. A medical-forensic autopsy was performed that revealed saccular dilatation of the RCA (Fig. 1), oedema, and pulmonary congestion. The rest of the autopsy yielded no further findings of forensic interest. The histopathological study detected an RCA that displayed a circuitous course and aneurysmal dilation that measured 3 cm along its maximum axis in the middle and distal segment that contained an acute occlusive thrombosis (Figs. 2, 3, and 4), extensive biventricular myocardial scarring (Fig. 5), cardiac hypertrophy, and severe atheromatosis involving several vessels. Toxicological studies of the blood and vitreous humour were negative.

Coronary artery aneurysms (CAAs) are a rare condition with a prevalence rate of 0.3–5.3%.[1] Giant CAAs have a prevalence rate of between 0.02[2] and 0.2%.[1] With no clear consensus regarding its definition, such aneurysms are designated as giant when the dilated segment is fourfold the diameter of the adjacent segment or when the dilatation exceeds 8 mm.[3]

In order of frequency, the vessels most often involved are the RCA, the anterior descending coronary artery, the circumflex artery, and the left main coronary artery.[4]

The most common cause of CCA is atherosclerotic coronary artery disease; other causes have been reported, such as Takayasu's arteritis, congenital heart disease, connective tissue disease, percutaneous coronary interven-

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**Fig. 1** Nodular area measuring 6 x 5 x 3 cm of the right coronary artery (RCA).

tions, and Kawasaki disease, this last condition being the single most predominant cause in children and young adults. Multiple vessels are also often affected.[5]

Most CAs are incidental findings on coronary angiographic studies.[1] Their clinical spectrum varies widely, from asymptomatic patients to episodes of sudden death, most often associated with thrombosis, distal embolization, and ischaemic heart disease; fatal arrhythmias due to involvement of the nodal branches of the coronary arteries are also not inconsiderable.

**Fig. 2** Sagittal view. Aneurysmatic dilation and thrombus in its interior.

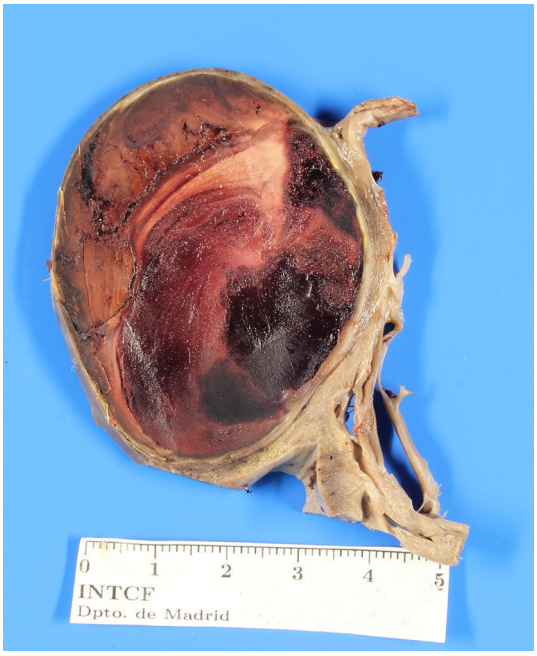


**Fig. 3** Close-up of the aneurysmatic dilation and the acute thrombosis contained within it.

In the case of giant CAAs, the treatment of choice is surgical, so as to prevent potentially fatal complications.

Final diagnosis: Giant aneurysm of the RCA with acute occlusive thrombosis. Chronic ischaemic heart disease.

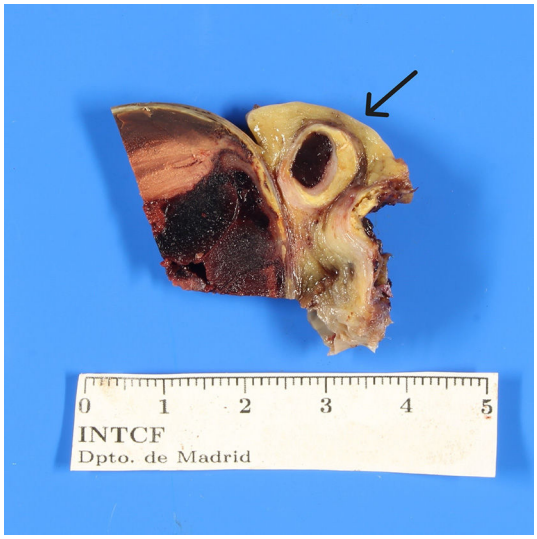


**Fig. 4** Please note the difference in diameter between the proximal segment (black arrow) and the middle and distal segment of the right coronary artery. Please also observe the presence of occlusive thrombosis in both segments of the right coronary artery.

**Fig. 5** Cross-sectional transverse views of both cardiac ventricles. Myocardial scarring on the posterior wall of the left ventricle, posterior septum, and posterior wall of the right ventricle, linked to chronic ischaemic heart disease.

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## Declaration of competing interest

The authors have no conflict of interests to declare.

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