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# IMAGES IN CARDIOLOGY

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## 64-slice cardiac computed tomography: appearance of a complex coronary to pulmonary arterial fistula with conus artery aneurysm

A 63-old-patient with drug refractory paroxysmal atrial fibrillation underwent 64-detector row cardiac computed tomography (CT) in order to facilitate a pulmonary vein isolation procedure. Previous clinical and echocardiographic information suggested that the heart was structurally normal.

A complex, unsuspected coronary artery to pulmonary artery fistula was diagnosed and clearly delineated using three-dimensional volume rendering software (GE Healthcare Technologies, Waukesha, Wisconsin, USA). There are a number of components to this anomaly (see panels).

The main fistula is formed from the conus artery, arising as a separate origin from the right aortic sinus where it is aneurysmal (white arrow), and the pulmonary artery. This branches to form two proximal limbs that take a tortuous course superiorly between the aorta (Ao) and pulmonary trunk (PT), which then unite and pass anterior to the PT just above the level of the pulmonary valve (white arrowheads). This vessel becomes progressively more dilated before fistulating into the left anterolateral aspect of the PT. There are also two aberrant branches of the proximal left anterior descending artery (LAD); the more proximal of these can be seen to drain directly into the pulmonary outflow tract with the more distal branch communicating directly with this conus arterial fistula.

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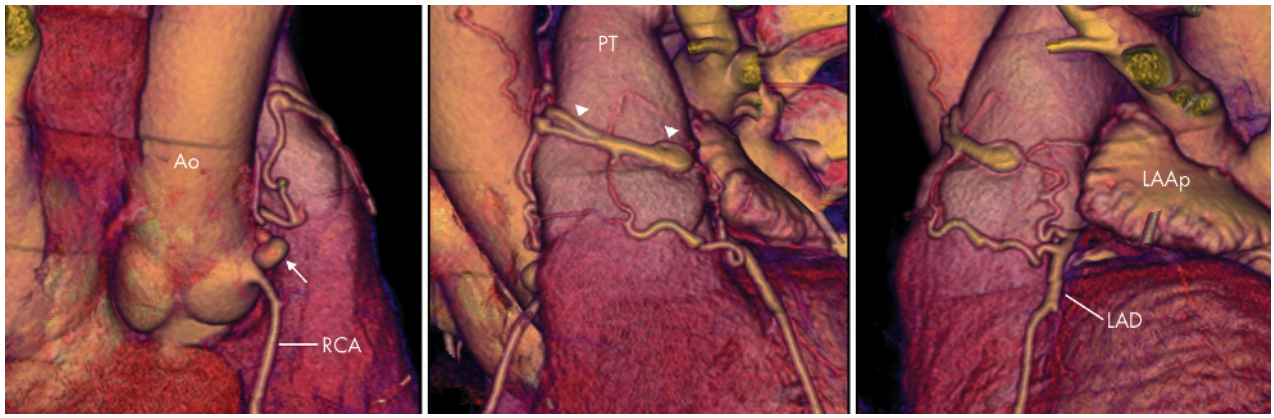


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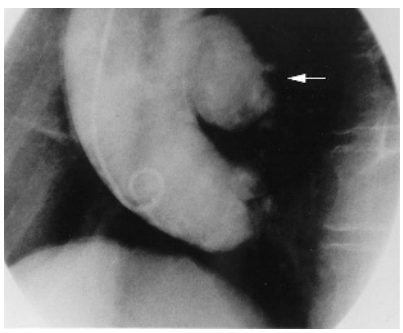
## A footprint of brucella infection: enormous saccular aneurysm of the ascending aorta



A 78-year-old woman, with a longstanding history of hypertension, was referred to our institution for a scheduled cardiac catheterisation because of an atypical chest pain and an electrocardiographically positive stress test. The coronary angiogram revealed atherosclerotic coronary vessels without any significant stenosis. For clarification of her clinical syndrome aortography was performed, portraying an enormous saccular aneurysm of the posterior wall of the ascending aorta (see panel). The chest *x* ray was unremarkable while concomitant aortic valve disease was not present. The nature of this very large aneurysm, however, remained to be determined. Her past history excluded any injury. It was questionable if hypertension alone could explain this localised finding, as there was no diffuse dilatation of the aorta and no aortic valve disease that hypertension primarily enhances. Detailed questioning of the patient's history brought to light a successfully treated *Brucella mellitensis* infection a couple of years previously. Taking into account the localised character of the saccular aneurysm, the brucella infection, although rare, could be the major aetiologic component of this lesion. Since the risk of rupture and dissection was high, aneurysmectomy was scheduled without delay. Histopathological examination of the excised tissue verified the mycotic nature of the aneurysm and tissue PCR revealed the presence of *Brucella mellitensis* DNA in the lesion. At six months follow-up, the patient was doing well and had no symptoms.

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