

CASE REPORTS

Large, isolated, congenital aneurysm of the anterior descending coronary artery

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Abstract

A large congenital aneurysm, arising from the first diagonal branch of the left anterior descending artery in a 52 year old woman was diagnosed by transoesophageal echocardiography, computed tomography, and magnetic resonance imaging. Surgical closure of the aneurysm was successful.

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Large congenital aneurysms of the coronary arteries are rare.¹⁻⁵ Most of the reported aneurysms were diagnosed at necropsy, and

rarely by non-invasive methods before coronary angiography.⁶ We report a patient in whom a large coronary arterial aneurysm was diagnosed by transoesophageal echocardiogram, computed tomography, and magnetic resonance imaging before operation.

Case report

A 52 year old woman was admitted to hospital with a five month history of chest tightness and cough. She had episodes of non-exertional chest tightness lasting five minutes. This was generally followed by coughing that produced mucoid sputum. She was a non-smoker. Her family history was not helpful and her vital signs and physical examination results were completely normal. Blood, urine, and stool examinations were all normal, as were serum cholesterol, HDL, LDL, and triglycerides. The resting electrocardiogram showed a non-specific T wave change. The chest x ray showed a round soft mass in the left middle lung field that was suspected to be lung cancer. Bronchoscopy showed no abnormal findings. Sputum cytology was negative. A cross sectional echocardiogram showed a round extracardiac mass compressing the left ventricular wall. Transoesophageal echocardiographic imaging showed a cystic mass with necrotising material in the centre of the cavity compressing the left ventricular wall (fig 1).

Computed tomography of the chest showed an oval mass adjacent to the main pulmonary trunk. This mass was enhanced by intravenous injection of contrast medium (fig 2).

Magnetic resonance imaging of the chest showed a well-defined, round, vascular, intrapericardial mass that contained thrombus and compressed the left ventricle. Cardiac catheterisation of the left and right sides of the heart showed normal pressure and cardiac output. A left ventriculogram was normal and showed no wall motion abnormalities. Coronary angiography showed a normal right coronary artery. Selective injection into the left coronary artery showed a solitary aneurysm arising immediately after the origin of the first diagonal branch (fig 3). The other branches of the coronary artery were all normal. The aneurysm was partially filled by thrombus. The patient underwent marsupialisation of the aneurysm. She has remained symptom free since surgery.

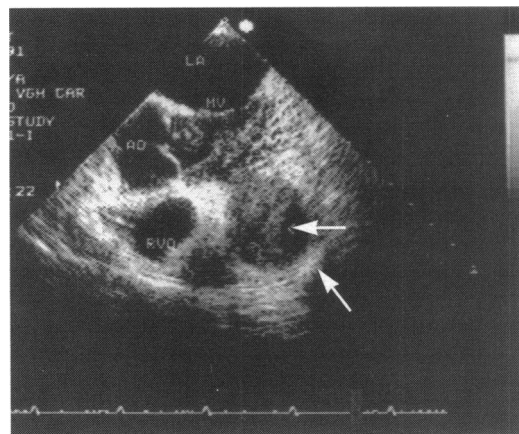


Figure 1 Transoesophageal echocardiogram. Four chamber view showing a round mass (lower arrow) compressing the left ventricle, with thrombus formation (arrow).

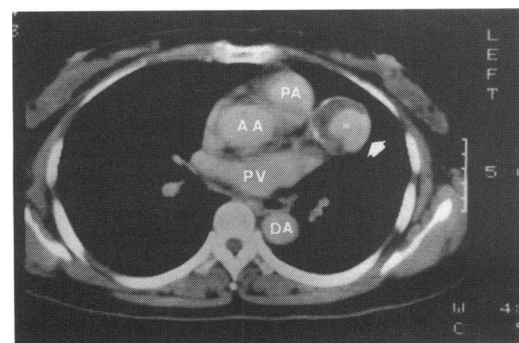


Figure 2 Computed tomogram of the chest showing a large coronary aneurysm arising from the left anterior descending artery, with thrombus formation (arrow).

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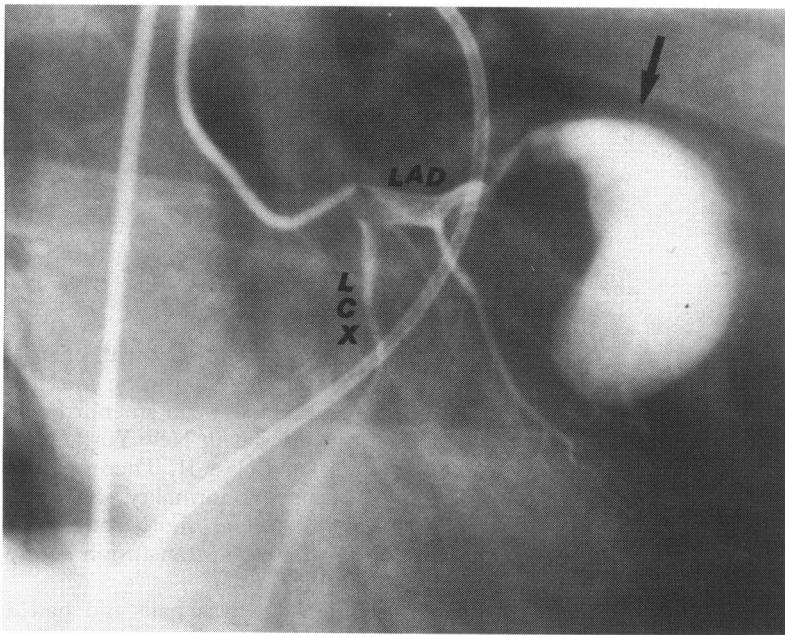


Figure 3 Angiogram of the left coronary artery showing a large aneurysmal sac partially filled by a thrombus formation (arrow).

Discussion

Aneurysms of the coronary artery are rare and atherosclerosis is the most common cause. Aneurysms can be congenital. The right coronary artery is affected most frequently, followed by the circumflex and left anterior descending coronary arteries. Aneurysms are saccular or fusiform. In our case the aneurysm was probably congenital, because there was no evidence of other possible causes. There were no atherosclerotic lesions in the coronary arteries, and histological studies of the aneurysm did not show important

intimal thickening. All of these findings make an atherosclerotic cause very unlikely. Aneurysms of the coronary artery may be asymptomatic and detected incidentally during postmortem examination or coronary angiography. A large aneurysm can be complicated by thrombus formation and embolisation of thrombus into the distal parts of the coronary artery can cause myocardial infarction. Non-invasive techniques, such as echocardiography, computed tomography, and magnetic resonance imaging, can detect aneurysms by their compression of a cardiac chamber. There are too few reports of such cases for a correct diagnosis to be based solely on these non-invasive techniques before coronary angiography.⁶ In our patient the aneurysm appeared as an intrapericardial mass that compressed the left ventricle: it was partially filled by thrombus. This may prove to be a useful feature when non-invasive methods are used to diagnose large coronary aneurysms.

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