Coronary artery ectasia identified on chest X-ray

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Introduction

We describe an asymptomatic 51-year-old man in whom severe coronary artery ectasia was evident on a plain AP chest X-ray (CXR).

Case report

A 51-year-old man on continuous ambulatory peritoneal dialysis underwent an urgent echocardiogram for assessment of an abnormal cardiac silhouette on a chest radiograph (figure 1) prior to cadaveric renal transplant. A calcified 3 cm mass was identified in the region of the right atrium and was initially reported as a suspected atrial myxoma. This was thought to be unlikely by a Consultant Cardiologist (KJ) and further investigation was recommended. In view of a perfect immunological match and increasing cold ischaemia time, renal transplant was carried out, but without the customary use of a pulmonary artery catheter. Post-operative course was uncomplicated with satisfactory allograft function on immunosuppression with azathioprine, cyclosporin and prednisolone.

At review in the cardiology out-patient department four months later, the patient was noted to be a non-smoker, with treated hypertension and a past medical history of ankylosing spondylitis. He had no cardiac symptoms and a normal cardiovascular examination. A resting 12-lead electrocardiogram (ECG) showed left ventricular hypertrophy with 'strain'. Transthoracic echocardiography showed a calcified, heterogeneous mass abutting, but external to, the right atrium. No other abnormality of cardiac structure was detected. Transoesophageal echocardiography failed due to intubation difficulties related to cervical spondylosis. Computed tomography revealed calcified mixed density masses nearly 3 cm in diameter in the left and right atrioventricular grooves. Magnetic resonance imaging with gating revealed flow void within the masses, suggesting they were vascular in origin (figure 2).

Cardiac catheterisation revealed a normal left ventriculogram and gross, extensive ectasia of both left (figure 3) and right (fig-

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Figure 1. Abnormal cardiac contour with soft tissue shadowing on both right and left cardiac borders (arrows)

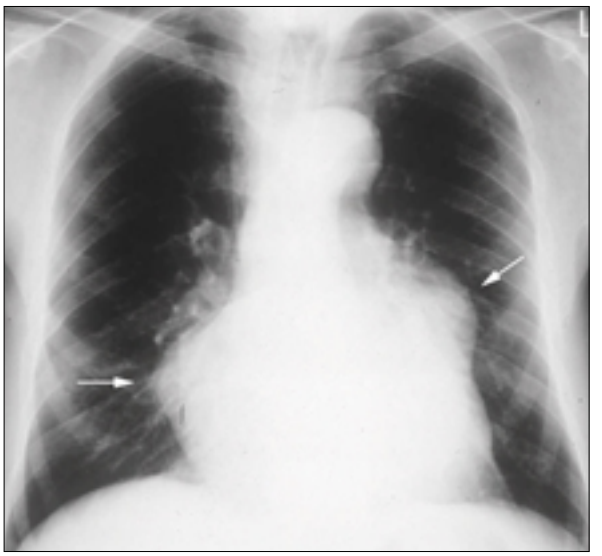


Figure 2. Axial MRI (T1-weighted turbo spin echo images) gives a cross-sectional view of right (arrow) and left (arrowhead) coronary arteries

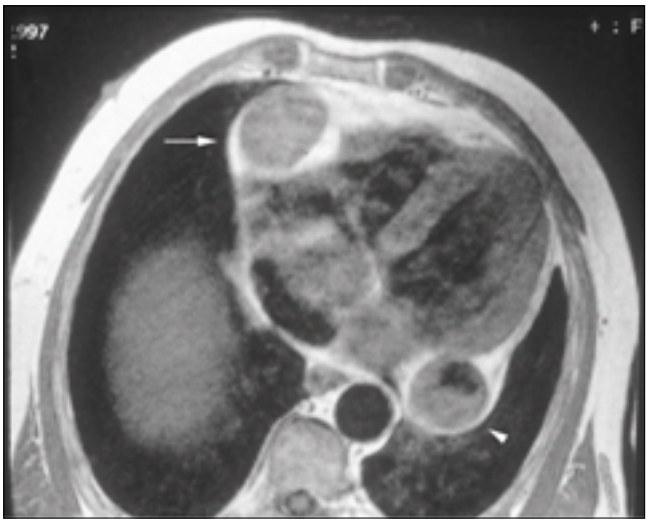


Figure 3. Left coronary angiogram demonstrating dilated and ectatic left anterior descending (arrow) and circumflex (arrowhead) arteries

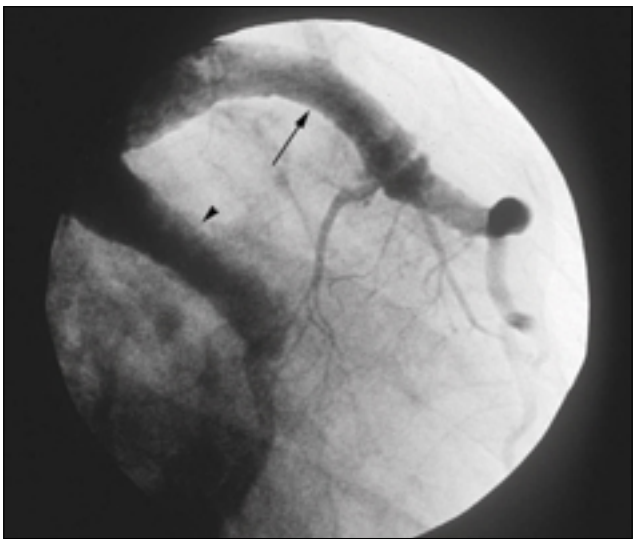
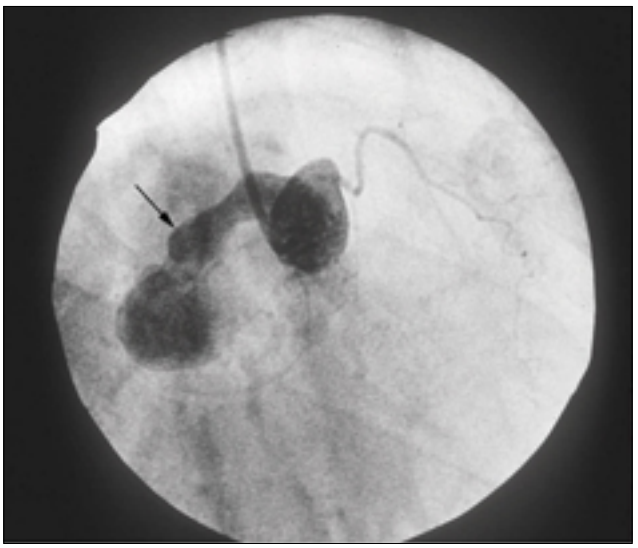


Figure 4. Right coronary angiogram demonstrating grossly dilated and ectatic proximal artery (arrow)



ure 4) coronary arteries in their proximal and mid-course, without any discrete stenoses. Neither coronary artery could be fully opacified with a standard injection, but thrombus could be identified within both arteries. The patients fasting cholesterol was 6.2 mmol/L. He was anticoagulated with warfarin to a target INR of 2.0-2.5; aspirin was not prescribed in view of a previous history of peptic ulceration.

Key messages

- Coronary artery ectasia is rare and usually only identified at coronary angiography, where it is often associated with stenotic lesions
- In this case coronary artery ectasia was so severe the enlarged coronary arteries were evident on CXR
- This case illustrates that even without associated stenoses coronary artery ectasia can be complicated by myocardial infarction

Three months later he presented to a district general hospital with chest pain and electrocardiographic changes consistent with an anterior myocardial infarction and he was thrombolysed with streptokinase. He had an uncomplicated course and received a beta blocker and, as an echocardiogram showed moderate left ventricular impairment, an angiotensin converting enyzme inhibitor. Three months later he completed nine minutes of a treadmill test (Bruce protocol) with no chest pain and equivocal ECG change. An exercise myocardial perfusion scan was arranged.

He was admitted four months later under the care of his nephrologist with a slight elevation of creatinine due to dehydration associated with a viral illness. Prior to discharge he collapsed due to a cardiac arrest, with no preceding chest pain. Ventricular fibrillation was identified and his cardiac output was restored with two 360J DC shocks. Serum potassium and magnesium were normal, the INR was 2.2 and an ECG showed a further anterior myocardial infarction. This was complicated by gross pulmonary oedema, but he recovered after appropriate support. Cardiac troponin I was elevated but a pyrophosphate scan was negative. An echocardiogram now revealed severely impaired left ventricular contraction.

Conclusion

Localised or diffuse coronary artery ectasia (CAE) is rare and usually only identified at time of coronary angiography.[1] This case of an asymptomatic 51-year-old man with gross, extensive CAE is unusual in its presentation with an abnormal cardiac silhouette on chest radiograph. It is generally recommended that the treatment for CAE is aspirin and, if intramural thrombus is evident, anticoagulation with warfarin. It is not known whether either of these treatments influences prognosis.[2] This case illustrates that CAE can be complicated by myocardial infarction in the absence of stenotic lesions and also despite treatment with warfarin.

References

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