Aneurysm of main left coronary artery

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SUMMARY A 57-year-old man presented with exertional chest pain, and was found to have a saccular, lobulated aneurysm of the left main coronary artery associated with severe atherosclerotic vascular disease. This is the third similar case reported and the first case of atherosclerotic origin. All symptoms were relieved by coronary artery bypass surgery.

Angiographic studies have shown that coronary artery aneurysms occur in 1 to 2.5 per cent of patients with coronary artery disease. Multiple aetiologies have been reported, most frequently atherosclerotic and/or congenital. Other reported causes include bacterial infection, syphilis, septic embolism, trauma, dissection, polyarteritis nodosa, scleroderma, Ehlers-Danlos syndrome, Marfan's syndrome, metastatic tumour, cystic medionecrosis, and mucocutaneous lymph node syndrome.

We describe an aneurysm involving the main left coronary artery; to our knowledge, only three such angiographically documented cases have been previously reported in adults.

Case report

This was the first hospital admission for a 57-year-old white man who had been in excellent health until one-and-a-half months before admission. At that time, he developed exertional chest pain associated with dyspnœa and relieved by rest. Because of increasing frequency and duration of this chest pain, in spite of medical treatment, he was admitted for cardiac catheterisation. There was no history of heart disease or hypertension. He had smoked cigarettes for 25 years. Both his father and mother had died of atherosclerotic heart disease at the ages of 65 and 73, respectively. Two brothers died of atherosclerotic heart disease at the ages of 50 and 52, and one sister, age 63, had had a myocardial infarction and was alive.

On physical examination, blood pressure was 120/80 mmHg, and pulse 50 per minute and regular. All peripheral pulses were palpable. No jugular venous distension was noted and carotid upstrokes were normal. Lungs were clear and cardiac examination did not reveal any abnormality. The chest X-ray and electrocardiogram were within normal limits. The blood chemistry, including a two-hour postprandial serum glucose were normal. The cholesterol was 4 and triglycerides 1 mmol/l. The cardiac catheterisation was performed with retrograde left ventriculography and selective coronary angiography using Judkins catheters. A left main coronary artery lesion was noted superimposed on severe triple vessel disease. Multiple projections showed a lobulated, septated aneurysm limited to the left main coronary artery (Fig.).

The patient underwent quadruple saphenous vein coronary artery bypass surgery. Two weeks later, a postoperative cardiac catheterisation was performed and all four bypass grafts (left anterior descending, circumflex, intermediate, and posterior descending arteries) were found to be patent and functioning well. The postoperative course was uncomplicated.

Comment

The majority of coronary artery aneurysms have been reported to occur in the right coronary artery, with the circumflex being the next most frequently involved vessel and the left anterior descending artery the most often spared. To the best of our knowledge, the angiographic diagnosis of a left main coronary artery aneurysm in an adult has been reported three times previously. One case involved a young woman (23 years old), who
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presented with exertional chest pain and a continu-
ous, soft murmur. On catheterisation, she was
found to have a saccular aneurysmal dilatation of
the left main coronary artery, communicating with
another intramuscular aneurysm sac. There were
no other associated diseases and this lesion was
felt to be congenital. The second case\textsuperscript{16} was a 33-
year-old woman, who presented with a murmur
and was found to have supravalvular aortic stenosis,
congenital aneurysm of the left ventricular apex, and
aneurysmal dilatation of the main left coronary
artery. Her only symptom or associated finding was
an embolic cerebral vascular accident. The third
case\textsuperscript{17} does not give any clinical data. By contrast,
the case reported here is of a middle-aged man
with a single saccular septated aneurysm of the left
main coronary artery associated with atherosclerotic
coronary artery disease. No murmurs were present
and no symptoms could be attributed to the
aneurysm directly. The atherosclerotic vascular
disease was sufficiently severe to account for the
exertional chest pain that led to his admission.
The 23-year-old woman,\textsuperscript{13} and the patient presented
here underwent coronary bypass, with relief of
their symptoms. An earlier report\textsuperscript{4} showed no
deaths among 30 patients with coronary aneurysm
18 months after coronary bypass surgery. Markis
and associates\textsuperscript{3} reported a 15 per cent annual
mortality in a two-year follow-up of 20 patients
treated medically. Several children have been
reported with aneurysms of the left main coronary
artery associated with mucocutaneous lymph node
syndrome, a disease which seems to have a predilec-
tion for the main coronary arteries.\textsuperscript{13-14}

When examined histologically, weakening of the
media was noted as a major cause of arterial
dilatation leading to an aneurysm and/or ectasia.\textsuperscript{11-18} 18
Swanton et al.\textsuperscript{1} showed severe atherosclerotic
involvement with extensive intimal fibrosis leading
to weakening of the media in a case of coronary
ectasia with atherosclerotic heart disease. Imahori
et al.\textsuperscript{18} showed mucopolysaccharide deposition
with intimal sclerosis in the media in Ehlers-Danlos
syndrome. Medial involvement in syphilis, poly-
arthritis nodosa, Marfan's syndrome, and cystic
medionecrosis has been well documented.\textsuperscript{99} This
weakening of the vessel media can easily be
recognised as an aetiological factor leading to
arterial dilatation.

The present case of a main left coronary artery
aneurysm of probable atherosclerotic origin in an
adult is, to our knowledge, the first to be reported.

References

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