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IMAGES IN CARDIOLOGY

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Unusual case of coronary–subclavian steal syndrome

A 46 year old man presented with an acute coronary syndrome in October 2003. Coronary angiography revealed severe triple vessel disease and urgent bypass grafting was performed, joining the left internal mammary artery (LIMA) to the left anterior descending artery (LAD). During two attempts to close the thorax, episodes of severe hypotension occurred. These were considered by the surgeons to be associated with the LIMA (vasospasm). Therefore they decided to perform additional venous bypass grafting to the LAD, distal to the LIMA graft. The patient was admitted to the intensive care unit with an open thorax until he stabilised haemodynamically. Closure of the thorax was carried out four days later.

In November 2004 the patient presented with complaints of effort related left shoulder pain, left arm paraesthesia, and mild angina pectoris. Angiography of the left coronary artery showed an occluded native LAD. The LIMA had competitive flow in the graft. In addition there was a systolic pressure gradient of 45 mm Hg between the left subclavian artery and the aorta. Accordingly arch angiography demonstrated severely reduced flow in the left subclavian artery, caused by a proximal high grade subclavian artery stenosis (panel A). Injection of contrast dye into the venous bypass graft to the LAD revealed a large vessel responsible for the circulation of the left upper limb by reversed flow in the LIMA graft (panel

B). On the basis of these findings, an unusual case of coronary–subclavian steal syndrome could be confirmed with predominant ischaemia of the upper limb instead of the myocardium. Consequently, stenting of the proximal left subclavian artery was performed.

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Arch aortogram. In contrast to the aorta (Ao), innominate artery (IA), and left common carotid artery (LCCA), there is a severely reduced blood flow in the left subclavian artery (LSCA).

Coronary angiography. Injection of contrast dye into the aortic–coronary venous bypass (ACVB) demonstrates that in addition to perfusion of the left anterior descending artery (LAD), the main function of this graft is perfusion of the left subclavian artery (LSCA), and therefore the left upper limb, by reversed flow in the LAD and the left internal mammary artery (LIMA).