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Angina during upper limb exercise: pathognomonic clinical feature of coronary–subclavian steal syndrome?

A 62-year-old patient, with a history of myocardial revascularisation consisting of a left internal mammary artery (LIMA) to the left anterior descending coronary artery (LAD) for significant coronary artery disease 16 years ago, was admitted with intermittent chest pain occurring only during physical activity of the left arm. The stress ECG up to 175 W was negative for ischaemic signs. His blood pressure was 120/70 mm Hg in the right arm and 60/40 mm Hg in the left arm. Non-invasive evaluation by magnetic resonance tomography (Angio-Surf) demonstrated a complete occlusion (panel A) of the left subclavian artery (LSA), which was confirmed by aortography (panel B). Selective injection of a contrast agent into the left main coronary artery revealed coronary–subclavian steal syndrome (CSSS) demonstrated by reverse

flow from the LAD through the LIMA into the LSA (panel C). Complete recanalisation of the occluded LSA with subsequent antegrade flow into the LIMA (panel D) was achieved by percutaneous angioplasty and stent implantation (Biotronik, 8×25 mm, 14 atm insufflation pressure) without any complications of cerebral or myocardial ischaemia. His symptoms disappeared and his blood pressure in the left arm was thereafter equal to that in the right arm.

Chest pain only during physical exercise of the left arm in patients with a history of LIMA-to-LAD bypass graft may be pathognomonic for CSSS, representing the clinical correlation of retrograde flow into the LIMA, with resultant coronary ischaemia. Percutaneous transluminal revascularisation by mean of stent implantation is the treatment of choice and can be successfully performed in such cases.

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