LESSON OF THE MONTH

Occluded Mycotic Popliteal Aneurysm Secondary to Infective Endocarditis

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Introduction

A patient with infective endocarditis required an emergency mitral valve replacement. During this illness, he developed sudden calf pain initially diagnosed as deep venous thrombosis. He in fact had an ischaemic leg secondary to a mycotic popliteal aneurysm. Both lesions were resected simultaneously.

Case Report

A 50-year-old African male presented with previously undiagnosed infective endocarditis. Echocardiography demonstrated large mitral valve vegetations and severe mitral regurgitation. He required urgent mitral-valve replacement. Intravenous benzylpenicillin, flucoxacinill and gentamicin therapy was started immediately. Streptococcus intermedius, fully sensitive to these antibiotics, was grown from blood cultures taken prior to starting this therapy.

Four days after admission, he developed sudden-onset, severe calf pain, with muscle tenderness but no leg-swelling. Initially, a deep venous thrombosis was suspected and he was anticoagulated. However, neither venous duplex-ultrasound examination (nor venography) showed any evidence of venous thrombosis. Subsequently, upon surgical review, he was found to have an ischaemic leg. The dorsalis pedis artery only could be Doppler-insonated, with an ankle-brachial pressure index of 0.23. Urgent ultrasound examination of the popliteal fossa showed the popliteal artery to be of normal calibre, with no embolic source identified. The following day, angiography demonstrated focal dilatation of the artery, with an embolus occluding a suspected mycotic popliteal aneurysm. The anterior tibial artery was patent, supplied by a large medial genicular branch with unusually high take-off.

Simultaneous resection of the mycotic popliteal aneurysm and mitral valve replacement was performed six days after the originally scheduled valve replacement. A two-centimetre, occluded popliteal aneurysm, exuding pus, was noted and resected using a reversed saphenous vein interposition graft. Full-length, three-compartment fasciotomies were performed. When opened, the resected aneurysm was seen to house a large ‘vegetation embolus’, which completely occluded it (Fig. 1). A second large vegetation was seen in place of the mitral valve. This was replaced with a Starr–Edwards prosthesis. The patient made an uneventful postoperative recovery, with no residual symptoms or signs of leg ischaemia.

Discussion

The mortality from infective endocarditis was virtually 100% until the introduction of penicillin, when it dropped to 30–40%.[1] There has been little further reduction since, probably because of the increasing diversity of causative organisms, the inherent susceptibility to infection of prosthetic valves, and an ageing population. Emergency surgery is required...
most often to replace a severely compromised valve and carries an approximate 10–20% perioperative and up to 50% one-year mortality risk.1

Most popliteal aneurysms are due to atherosclerosis, and are the most common peripheral aneurysm.2 Mycotic popliteal aneurysms, however, are extremely rare, with only eight reported in the English literature to date.3 They can be caused by direct trauma, including drug abuse and following surgery, but they can also be caused occasionally through septic embolisation.2,4 The term is sometimes applied to secondary infection of a pre-existing aneurysm, but the classic mycotic aneurysm develops from septic embolisation to a previously normal artery.2,4 We believe that our patient developed the latter kind. This is supported by the fact that arterial ultrasound initially showed the artery to be of normal calibre. Focal dilatation developed only subsequently, as demonstrated by angiography.

In a patient with infective endocarditis, septic embolisation should be considered as a possible cause of acute leg pain. Angiography may confirm the suspicion.4,5 Resection of the mycotic aneurysm should be undertaken using reversed long saphenous vein graft.2,4 Intravenous antibiotics should be followed by a prolonged course of appropriately targeted oral antibiotics, once the causative organism has been isolated from blood cultures.1,4 Other septic foci should be sought.1,4

References


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