CASE REPORT

A True Aneurysm of the Tibioperoneal Trunk.
Case Report and Literature Review

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Introduction

An aneurysm of the tibioperoneal trunk is extremely rare. A review of the literature since 1964 reveals that only two infrapopliteal aneurysms involved the tibioperoneal trunk.1 Infrapopliteal aneurysms of mycotic or systemic disease aetiology are even more uncommon.2,3 We report about the presentation, diagnosis and the treatment of an isolated aneurysm of the tibioperoneal trunk in a sixty-year-old female.

Case Report

A 60-year-old woman was admitted by her family doctor with persistent pain and a palpable small mass in her right calf which had been present for 9 months. The preliminary diagnosis was myalgia of her right gastrocnemial muscle treated by physiotherapy and injection of xylocaine once. There was no history of trauma. The patient had a mild hypertension. On physical examination there was a palpable mass in the proximal right calf. All peripheral pulses and capillary refill were normal. Standard laboratory blood tests were normal, but cholesterol and triglycerides were slightly elevated (7.6 mmol/l and 1.93 mmol/l respectively). A serology test for syphilis was negative. An ultrasound of her right calf revealed aneurysmal dilatation of the tibial artery, with possible involvement of the peroneal artery. Arteriography confirmed an aneurysm of the tibioperoneal trunk (Fig. 1). The aorta showed slight arteriosclerotic degeneration. The aneurysm was successfully treated by saphenous vein bypass. The graft was sutured proximally end-to-side to the popliteal artery below the knee and distally end-to-end to the posterior tibial artery. The peroneal artery could not be saved because the base of the aneurysm was attached to this artery. Postoperatively there were no complications and the patient's complained-of pain in her right calf completely disappeared. The graft remains patent on ultrasound scanning 15 months later.

Discussion

Aneurysms of the tibioperoneal trunk are very rare.1-5 The paper of Mönig gives a nice survey of all the true infrapopliteal aneurysms described in the international literature.1 In our repeated search in Medline we found just one more report.5

Independent of aetiology, the most important factor in the production of an aneurysm is the hydrodynamic force exerted on the vessel wall.4 A gradual change from pulsatile flow to a non-pulsatile flow in the periphery could be responsible for the rarity of small vessel aneurysms. Marmorale et al.3 believe that shearing of the proximal portion of the anterior tibial artery after having passed through the interosseous membrane may play a role in the development of the...
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aneurysm. In a tibioperoneal trunk aneurysm the vulnerable site could be localised beyond the soleus muscle arch.

Aneurysms of the peripheral arteries are usually traumatic in origin and are most often false aneurysms. Our patient denied any previous trauma. Since the widespread use of antibiotics the incidence of mycotic aneurysms has decreased markedly. She had no signs of endocarditis and a negative previous history for this condition. There is no indication that this patient is suffering from any systemic disease which may predispose to the development of an aneurysm.

We chose to treat our patient with a vein interposition graft, which we think is the treatment of choice. Another technique to eliminate an aneurysm could be the percutaneous placement of a graft-covered stent. Coil embolisation could also be used to occlude an isolated tibial artery aneurysm, provided that the other tibial vessels were patent.

References


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