CASE REPORT

Isolated Aneurysm of the Dorsalis Pedis Artery

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Introduction

Isolated dorsalis pedis artery aneurysms are extremely rare, and only 11 cases have been reported in the literature. We report a case that was treated by resection and reanastomosis. The clinical findings, diagnosis and surgical implications are considered.

Case Report

A 38-year-old man presented with a pulsatile mass on the dorsum of the left foot, present for 2 years with no history of trauma. The mass was slowly enlarging with minimal symptoms except for difficulty in putting on his shoes. The only possible risk-factors were treated hypertension and cigarette smoking (20 cig./day). All laboratory tests, including VDRL and immunological tests (immunoelectrophoresis, antinuclear and antismooth muscle antibodies) were negative. Clinical examination showed a 3 x 3 cm pulsatile mass on the dorsum of the foot (Fig. 1). No other aneurysms were present.

Echography and computerised tomography confirmed the aneurysm and did not show any intraluminal thrombus, nor calcification or erosion of the underlying bone. Angiography demonstrated a normal arterial tree with a saccular aneurysm of the left dorsalis pedis artery. The aneurysm was resected and continuity re-established with an end-to-end anastomosis using 7/0 interrupted polypropylene sutures (Fig. 2). The postoperative outcome was uneventful and follow-up at 3 years shows no evidence of recurrence.

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Discussion

Peripheral aneurysms of the limbs are much less frequent than those of the abdominal aorta. The most frequently involved arteries are the popliteal (70%) and the femoral (20%) arteries; the remaining 10% are seen in different locations. Isolated aneurysms of the dorsalis pedis artery are particularly rare and only 11 cases have been reported to date. Of these, eight cases were of pseudoaneurysms, and only three were real aneurysms. Most aneurysms of the dorsalis pedis artery are traumatic in origin. Other causes are iatrogenic, and five cases of this type are reported in literature: one during cannulation of a dorsal vein of the foot, another during removal of a ganglion and three after orthopaedic operations. Although mycotic aneurysms are rare, an infectious aetiology should always be considered.

Unlike radial or ulnar aneurysms that can cause ischaemia of the hand, no such complications regarding dorsalis pedis artery aneurysms have been described in literature.

Since the artery is located superficially, the diagnosis is usually obvious on clinical examination, but an accurate evaluation of entire arterial tree is important to exclude multiple aneurysms elsewhere. The finding of a pulsating mass on the dorsum of a foot should always be confirmed by arteriography. Arteriography is also helpful in evaluating the integrity of the posterior tibial artery and of the plantar arch. This information is useful when planning surgical treatment.

The only treatment of this pathology is surgical. There are two options: ligation with or without resection, or reconstruction of the artery with an end-to-end anastomosis. It is well-known that the dorsalis pedis artery may be ligated because blood flow to the foot is guaranteed by the posterior tibial artery on the plantar arch. For this reason simple ligature is feasible in most cases. However, either the dorsalis pedis or posterior tibial arteries may be absent or occluded, especially in elderly patients. Furthermore, some patients such as diabetics, are at a high risk of developing atherosclerosis later on. Finally in a growing child the lack of a peripheral artery can cause fibrous contracture of the foot and inhibit growth. In these selected groups of patients every effort should be made to restore arterial continuity.

References


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