CASE REPORT

Thigh Embolisation in Association with Bilateral Profunda Femoris Aneurysms

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Introduction

True aneurysms of the profunda femoris artery are rare and are much less common than false aneurysms of this vessel. Profunda artery aneurysms can affect either the main trunk of the artery or its branches. Unlike aneurysms of the common femoral artery they are frequently symptomatic. We report a case of bilateral synchronous profunda artery aneurysms. On one side the aneurysm was symptomatic, producing distal embolisation to the thigh.

Case Report

A 79-year-old man presented with acute onset of pain and paraesthesia of his left thigh and foot. On examination the latter were cold and pale. The thigh was mottled with petechial haemorrhages. Both femoral and popliteal pulses were present with a palpable dorsalis pedis pulse on the left. There was a pulsatile swelling in the left groin. He had bilateral femoral bruits.

An intravenous digital subtraction arteriogram confirmed tortuosity and aneurysmal dilatation of both iliac arteries. The aorta was atheromatous, but not aneurysmal. In addition there was a fusiform dilatation of the left common femoral artery which contained thrombus. Both superficial femoral arteries were patent but there was evidence of atheroma along their length. Ultrasound examination of the left groin confirmed the presence of an aneurysm, but it was not clear which vessel was aneurysmal. His condition improved rapidly over the next 2 h, symptoms completely resolving. He declined surgical treatment at this time and was discharged home on aspirin. He was well for 6 months, then the same symptoms reappeared. They were more severe on this occasion and in view of the state of his iliac arteries an aorto-femoral bifurcation graft was carried out. At operation it was apparent that he had bilateral profunda aneurysms. The proximal anastomosis was carried out end-to-end to the infrarenal aorta. The aneurysms were resected from both groins. The distal anastomosis on each side was end-to-end to the bifurcation of the profunda femoris artery at its first branch. In addition, both superficial femoral arteries were implanted, end-to-side into the graft. The external iliac artery on the right was ligated and that on the left anastomosed end to side to the limb of the graft as it passed beneath the inguinal ligament.

Postoperatively the patient made an uneventful recovery and is symptom-free 3 years later.

Discussion

False aneurysms of the profunda femoris artery, often iatrogenic in origin, are more common than true atherosclerotic aneurysms. The latter comprise approximately 0.5% of peripheral aneurysms. It has been suggested that the vessel is protected from aneurysmal dilatation by the muscular tunnel in which it runs.

Thirty-seven aneurysms of profunda femoris or its branches have previously been described, of which 34 were of atherosclerotic origin, one case was of
unknown cause\textsuperscript{7} and two were mycotic.\textsuperscript{8,9} Not all cases described in the literature are fully evaluable. The mean age of patients with atherosclerotic profunda femoris aneurysms was 73 years (range 51–83) and 95\% were men. In one other case there was a metachronous contralateral profunda aneurysm.\textsuperscript{10}

Patients with profunda aneurysms frequently have other atherosclerotic aneurysms. Fourteen of 23 cases had at least one other aneurysm; six of these were abdominal aortic aneurysms. Six patients had three or more aneurysmal arteries in addition to the profunda femoris. Our patient had aneurysmal iliac arteries.

The commonest presentation of these aneurysms is of an enlarging, often rapidly, pulsating groin swelling.\textsuperscript{5,8,10–15} Rupture is also common\textsuperscript{10,18–22} and there are several reports of ischaemic changes in the foot.\textsuperscript{10,13,23–25} Embolisation to the thigh, which one might predict from a profunda artery aneurysm, has not previously been described.

In our case the profunda aneurysms were not confidently identified by arteriography or by ultrasound scan. This is fairly typical. Of the 19 atherosclerotic cases in the literature, in which results of angiography are described, in only 11 was the aneurysm correctly identified and localised.\textsuperscript{5,6,8,10,12–14,17,25} Four patients had ultrasound examinations that demonstrated the presence of an aneurysm, but did not localise it to the profunda femoris.\textsuperscript{16,21,22,25} Aneurysms were correctly diagnosed in two cases by a combination of CT and arteriography, and in one case by colour Duplex, arteriography and CT. Bearing in mind that these patients often have multiple aneurysms in this area, it seems appropriate to use at least two methods of imaging, particularly if the source of possible emboli is unclear.

Profunda femoris aneurysms may be treated conservatively, ligated or bypassed. Table 1 compares the complications of surgical management when the superficial femoral artery (SFA) is patent and when it is occluded. It suggests that the limb is in danger when a profunda aneurysm occurs in the presence of an occluded SFA and therefore the flow to the profunda should be restored. No grafts were performed when the SFA was patent and the aneurysm in the distal profunda. No limbs were lost under these circumstances.

### Table 1. Complications following surgical treatment of profunda femoris aneurysms\textsuperscript{5,8,10,20,22}

<table>
<thead>
<tr>
<th>SFA patent</th>
<th>Number of cases</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ligation</td>
<td>12</td>
<td>1 cardiac death</td>
</tr>
<tr>
<td>Grafting</td>
<td>5</td>
<td>1 forefoot amputation</td>
</tr>
<tr>
<td>SFA occluded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ligation</td>
<td>2</td>
<td>1 below-knee amputation</td>
</tr>
<tr>
<td>Grafting</td>
<td>6</td>
<td>2 below-knee amputations</td>
</tr>
<tr>
<td>Aneurysmorrhaphy</td>
<td>1</td>
<td>1 below-knee amputation</td>
</tr>
</tbody>
</table>

SFA = Superficial femoral artery.

### References


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