



Case Report

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Surgical management of isolated true femoral artery aneurysm

True femoral artery aneurysm

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ABSTRACT

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Popliteal artery aneurysm are seen more common than femoral artery aneurysms. Common femoral artery (CFA) aneurysms, superficial femoral artery (SFA) aneurysms and profound femoral artery (PFA) aneurysms are relatively rare and incidence rates are 80%, 15% and 5% respectively among the all femoral artery aneurysms and most of them are pseudoaneurysms. True aneurysms are often seen bilaterally (38%) and accompanying popliteal artery aneurysms (%27-44) or abdominal aorta aneurysms (%50-90). These aneurysms can be thrombose, embolize or rupture. Repair is indicated for symptomatic patients. Diameter and extent of the aneurysm are the main indicators for the surgical treatment. We present the successful management of a 67 year old male who was presented with left femoral artery aneurysm.

Keywords:

Atherosclerotic aneurysm
Femoral artery
True aneurysm

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1. Introduction

Peripheral artery aneurysm is defined as more than 2 cm increase in diameter or more than %50 expansion in diameter of the artery. Popliteal artery aneurysm are seen more common rather than femoral artery aneurysms. Common femoral artery (CFA) aneurysms, superficial femoral artery (SFA) aneurysms and profound femoral artery (PFA) aneurysms are relatively rare and incidence rates are 80%, 15% and 5% respectively among the all femoral artery aneurysms and most of them are pseudoaneurysms. These pseudoaneurysms are often iatrogenic, associated with syphilitic and mycotic infections or trauma. True aneurysms are often seen bilaterally (38%) or accompanying popliteal artery aneurysms (%27-44) and abdominal aorta aneurysms

(%50-90) (Leon et al., 2008). These aneurysms can be thrombose, embolize or rupture. Large aneurysms are mimicing masses and may compress adjacent veins or nerves. Etiologic factors are including atherosclerosis, connective tissue disorders and arteritis. Atherosclerosis is the most common cause of aneurysms. Increased turbulent flow beyond the stenosis in cross joints or dense structures may cause aneurysm formation. They are commonly seen in elderly males, often located in the middle third of the artery in the right limb as a focal lesion. These are frequently asymptomatic until reaching a large diameter before the diagnosis was made. The most seen symptoms are localized pain in association with a pulsatile mass, rupture, thrombosis, embolism, deep vein thrombosis, lower limb edema,

claudication or bruising. Rupture of the femoral artery aneurysms are much more seen rather than distal ischemia unlike the popliteal artery aneurysms. Repair is indicated for all symptomatic femoral artery aneurysms. Dublex ultrasound, magnetic resonance angiography, computed tomography angiography and digital subtraction angiography can be used for diagnosing. The incidence of thrombosis and embolus for CFA, PFA and SFA were 15%, 45% and 26% respectively (Lawrence et al., 2014). Due to the high incidence of complications, repair should be performed electively when possible.

2. Case report

A 67 year old male was presented with acute left lower limb ischemia although he was taking anticoagulation therapy, was admitted to us. On physical examination his left popliteal and distal pulses were absent and he was found to have a pulsatile mass at the level of the right groin without extension into the thigh. Contralateral pulses were usual. He had a history of aorta-right femoral artery. His blood pressure was 120/80 mmHg and heart rate was 90/minute. Renal function was normal. He had no history of previous trauma to his left lower limb. The remainder of the physical examination was unremarkable. Computed tomography angiography (CTA) scanning revealed 3.2 cm aneurysm of the right CFA and proximal portion of SFA and distal flow was absent (Fig. 1). Routine preparation for surgery was made and informed consent was taken. After proximal and distal ligation of SFA was performed, the patient had undergone bypass from the left external iliac artery to SFA and proximal popliteal artery with a 8 mm PTFE graft (Fig. 2). The remainder of the arterial tree did not show any significant abnormality. The pathologic examination of the aortic wall was reported as calcific atherosclerosis. The patient's postoperative recovery



Fig. 1. Three dimensional computed tomography angiography (CTA) image of left external iliac artery (EIA), common femoral artery (CFA), superficial femoral artery (SFA).

was uneventful, without signs of distal ischemia 1 year after the surgery.

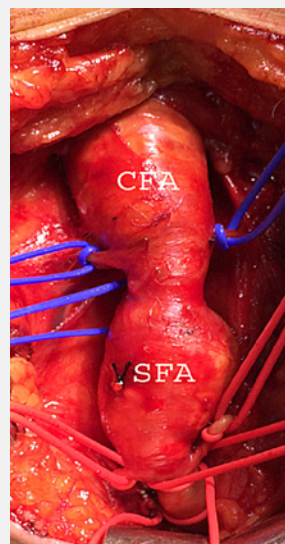


Fig. 2. Intra operative image of common femoral artery (CFA) and superficial femoral artery (SFA).

3. Discussion

Repair is indicated for symptomatic patients. Some authors stated that there is no consensus for asymptomatic patients for the appropriate intervention time however, some authors proposed that true femoral artery aneurysms which are larger than 2.5 cm in diameter should be repaired in healthy patients, especially if the aneurysms are rapidly enlarging (Perini et al., 2014). Saccular aneurysms should be treated when the diagnosis is made. Femoral artery aneurysms have a more benign prognosis than popliteal artery aneurysms. Several treatment modalities have been described. The thigh incision is required for conventional surgical repair. Proximal ligation, excision of the aneurysm (aneurysmectomy), proximal and distal ligation and bypass are the surgical treatment modalities (Mohan et al., 2014). Graft interposition (with using prosthetic or saphenous vein graft), followed by exclusion are preferred for surgical treatment. Repair of the femoral artery aneurysms were reported with low rates of ischemia and limb loss. Endovascular techniques are available for treatment however, has some limitations due to crossing a flexion joint. Kinking or migration of the endovascular stent and metal fatigue can be seen after endovascular intervention (Kara et al., 2015). Solely proximal ligation of the aneurysm can be an option in emergency unless distal ischemia is present. We believed that aneurysms of the femoral artery greater than 2.5 cm should be repaired surgically.

In conclusion, the diameter and extent of the aneurysm are the main indicators for the surgical treatment. We believe that conventional surgery is still the gold standard treatment method.

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