

THE SUCCESSFUL MANAGEMENT OF A NON-ATHEROSCLEROTIC  
ILIO-FEMORO-POPLITEAL ANEURYSM : CASE REPORT

By

Dr. Hasan Ali Al Zahrani, FRCS (Glasg)  
Associate Professor  
Consultant Vascular Surgeon  
Department of Surgery, King Abdulaziz University Hospital,  
Jeddah, Saudi Arabia

From

Department of Surgery, King Abdulaziz University Hospital,  
Jeddah, Saudi Arabia

Address for correspondence :

Dr. Hasan Ali Al Zahrani, FRCS (Glas)  
Associate Professor, Consultant Vascular Surgeon  
Department of Surgery  
King Abdulaziz University Hospital  
Jeddah, Saudi Arabia  
Tel. No. : 966-6952845  
Fax No. : 966-6952885

**ABSTRACT :**

The successful management of an extensive non-atherosclerotic ilio-femoro-popliteal aneurysm is described. This very rare aneurysm developed at the site of an old penetrating wound lower thigh caused by an infected arrow. Upto the best of our knowledge this is the first reported case in English literature.

Keywords : Aneurysm, Arterial, Vascular

## INTRODUCTION :

Atherosclerotic aneurysms involving the iliac artery and popliteal arteries are well known and usually associated with abdominal aortic aneurysm<sup>(1)</sup>. Femoral aneurysm involving the common femoral artery is also described and considered as the second common peripheral aneurysm after popliteal aneurysm<sup>(2)</sup>. However, isolated superficial femoral aneurysm is rare and only 18 cases were reported in the literature<sup>(3,4)</sup>. We report a very rare case of an extensive true aneurysm which is extending from the common iliac artery down to the beginning of the popliteal artery involving the full length of the external iliac and superficial femoral arteries. The possible aetiology and successful management will be discussed.

## CASE REPORT :

A 42 years old Chadi male presented with a rapidly expanding painful swelling involving the right upper thigh which was noticed by the patient 6 months prior to his admission to our service. A thorough review of his past medical history revealed that he sustained a penetrating trauma to his right thigh 3 years ago during the Chadi civil war. The injury was caused by an old arrow. This was complicated by infection at the area of the penetrating wound which was managed by primitive local folk medicine doctors. The healing of the wound was prolonged as it healed in 6 months time. He came to our country seeking advice. On examination, there was an easily palpable pulsating mass extending from the right iliac fossa down to right lower thigh at the adductor canal. The scar of the old infected wound on the adductor canal was seen. Otherwise, no other positive physical findings including other aneurysms were detected. All of the blood tests were normal. The serological profile including VDRL were negative. An abdominal ultrasound detected in addition to a small hepatic haemangioma, an aneurysmal dilatation involving the right external iliac artery with a diameter of 3.9 centimeters extending to the right common femoral artery (3 centimeter in diameter). There was no evidence of intraluminal thrombus, mural calcification or plaque formation. A subsequent arteriogram confirmed the previous findings and demonstrated aneurysmal dilatation in an ectatic fashion starting in the right external iliac artery (Figure 1a) extending to the right common femoral and the superficial femoral artery but sparing the profunda femoris artery (Figure 1b). The ectasia was

decreasing gradually to end at the proximal popliteal artery (Figure 1c), however, the rest of the popliteal of the popliteal artery was of normal diameter (Figure 1d). A similar but moderate dilatation of common iliac was noted. A C.T. scan of the pelvis and thighs was performed and sequential continuous axial sections were obtained at various levels before after I.V. contrast injections. Distal aortic diameter was 2.3 cm. However, the right common iliac artery diameter was double the size of the left one (1.8 cm vs 0.9 cm). The right external iliac, common femoral, superficial femoral and profunda femoris arteries diameter were 4.1 cm, 3.0 cm, 2.0 cm and 1.5 cm respectively (Figure 2).

At surgery, the right common iliac artery was exposed through a lower mid-line abdominal incision, the groin vessels were exposed through a standard vertical groin incision and the popliteal artery through a medial incision on adductor canal. After ligation of the right internal iliac artery a 10 mm dacron (Gelsoft; Vascutek, Inchnan, Scotland) graft was anastomosed proximally to the origin of the right common iliac artery using the in-lay technique, tunnelled retroperitoneally in to the groin and anastomosed end-end distally to the origin of the profunda femoris artery. The external iliac artery was ligated proximally and sutured. The same was done in the distal common femoral artery. The superficial femoral artery aneurysm was ligated and sutured proximally and distally (Exclusion technique). Another sequential bypass was carried out from the side of the groin graft using 8 mm reinforced expanded PTFE (Impra Flex, Tempe, Arizona, U.S.A.) graft and anastomosed distally to the popliteal artery (end-side). There was

## DISCUSSION :

Peripheral aneurysms of atherosclerotic nature are well described in the literature<sup>(1,2)</sup>. However, an aneurysm involving the common iliac artery and extending down to involve the full length of the external iliac artery, common femoral and superficial femoral arteries upto the beginning of the popliteal artery in the adductor canal is not yet described as such in English literature. We think that this aneurysm is associated with the infected wound our patient had during a civil war by an infected arrow. This may led to infected of the arterial wall followed by gradual weakness of the wall which subsequently ended with this possibly mycotic aneurysm. This assumption was based on the absence of any manifestations of atherosclerosis or its risk factors in this patient. Furthermore, we failed to find any other evidence of connective tissue disorder and/or specific infectious diseases which may cause mycotic aneurysm such as syphilis or tuberculosis. In its management a conventional sequential bypass was carried out preserving the profunda femoris as an outflow artery in addition to the extension to the popliteal artery above the knee. This was done in view of the relatively young age of patient and the possibility of later graft occlusion if one relays on the popliteal artery as the only outflow vessel. Alternatively, our patient may be a suitable case for endoluminal grafting in centres where facilities and expertise for endovascular surgery are available. However, this may not be recommended if the infective theory in the pathogenesis of this aneurysm is considered.

no evidence of any atherosclerotic changes or inflammatory changes macroscopically. The arterial wall biopsy from the aneurysm proximally was showed non-specific inflammatory changes. However, no atherosclerotic or other pathological changes were detected. He was covered with intravenous third generation cephalosporin and metronidazole for 3 weeks postoperatively. He was well 8 months after surgery and all grafts were functioning satisfactorily as examined by Duplex scan and no further dilatations could be detected in his abdominal arteries in the affected or contralateral sides.

**ACKNOWLEDGEMENT :**

We would like to thank Dr. Kamal Ezzaldin Sitti Sarah Sampang for assisting in preparation this manuscript.



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**LEGENDS :**

Figure 1 : A pre operative arteriogram showing

- 1a. The proximal iliac extension of the aneurysm.
- 1b. The femoral extension of the aneurysm.  
Profunda is not involved.
- 1c. The lower part of the aneurysm involving the proximal popliteal artery. (N.B. There is an artifact on the right upper part of the figure).
- 1d. The normal infragenicular popliteal artery.

Figure 2 : C.T. scan of the pelvis showing the diameter of the aneurysm at the external iliac artery level (4.1 cm).