Axillary Artery Aneurysm: A Rare Case Report

Hasan Tüzün, Caner Arslan, Serkan Burç Deşer, Şeyma Denli

Department of Cardiovascular Surgery, İstanbul University-Cerrahpaşa, Cerrahpaşa School of Medicine, İstanbul, Turkey

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Abstract

Upper extremity arterial aneurysms are uncommon lesions and the most common false aneurysms. True upper extremity aneurysms of the axillary artery are most commonly caused by atherosclerosis; blunt trauma; or arteriosclerotic, congenital, and metabolic disorders, as well as with Kawasaki's syndrome, Buerger's disease, Kaposi's sarcoma, or adventitial cystic disease. The mechanism of aneurysm formation is considered as the compression of the arterial wall resulting in the contusion of the arterial media with subsequent weakness of the wall and fusiform dilatation. A 45-year-old male patient presented with a prediagnosis of axillary artery pain in the left armpit and a 6-cm aneurysmatic dilatation of the left axillary artery. Herein, we present the surgical treatment of a rare isolated giant axillary artery aneurysm.

Keywords: Axillary artery, aneurysm, surgical treatment

Aksiller Arter Anevrizması: Nadir Bir Olgu Sunumu

Öz

Üst ekstremite arter anevrizmaları nadir görülen lezyonlardır ve en yaygın yanlış anevrizmalardır. Aksiller arterin gerçek üst ekstremite arter anevrizmaları en sık ateroskleroz veya künt travma veya arteriosklerotik, konjenital ve metabolik bozukluklar veya Kawasaki sendromu, Buerger hastalığı, Kaposi sarkomu ve kistik adventisite hastalığı nedeniyle oluşur. Anevrizma oluşum mekanizmasının, arteryel medyanın kasılmasına neden olan arteriyel duvarın büzülmesinin, duvarın zayıf olması ve fuziform dilatasyonun sıkıştırılması olduğu düşünülmektedir. 45 yaşında erkek hasta, sol koltukta aksiller arter ağrısı ön tanısı ve sol aksiller arterin 6 cm anevrizmatik dilatasyonu ile tarafımıza başvurdu. Burada, nadir görülen izole dev aksiller arter anevrizmasının cerrahi tedavisini sunuyoruz.

Anahtar Kelimeler: Aksiller arter, anevrizma, cerrahi tedavi

Hippocrates was the first to describe an aneurysm of the upper limb artery in 460 BC [1-3]. In 1772, Guattani made the definitive diagnosis of an aneurysm of the upper limb artery for the first time [4]. Arterial aneurysms of the upper extremity axillary are extremely rare, and a majority of them are pseudoaneurysms. Generally, atherosclerosis, recurrent blunt traumas, and metabolic disorders occur as a result of congenital diseases, Kawasaki syndrome, Buerger's syndrome, Kaposi's sarcoma, or adventitial cystic disease. The mechanism of aneurysm formation includes fusiform enlargement as a result of compression of the arterial wall in the media layer of the artery and weakening of the arterial wall [2]. Axillary artery aneurysms are rarely observed in patients with arterial aneurysms of the upper extremity because of the occurrence of axillary artery aneurysms. In axillary artery aneurysms, a pulsatile mass is usually detected by axillary palpation, and embolism due to brachial plexus compression or thromboembolic (upper extremity arteries reach 20%) may cause paresthesia or pain complaints [5-7]. The initial diagnosis of axillary artery aneurysms is usually made via physical examinations [6].

The differential diagnosis of ganglion cysts, synovial cysts, dermoid cysts, abscesses, neurol neoplasms, fibromuscular disease, and Raynaud's disease must be considered [6]. Firstly, Doppler ultrasound (US), computed tomography (CT), magnetic resonance imaging (MRI), and angiography must be used for the diagnosis. The surgeon must be careful about the follow-up or treatment of this type of aneurysm [8]. The alternative treatment option is endovascular stent implantation, and its use in anatomical position is limited in comparison with surgical intervention. Herein, we present the case of patients with rare isolated giant axillary artery aneurysm that was surgically treated.

Case Presentation

A 45-year-old male patient presented with the prediagnosis of axillary artery pain in the left armpit and a

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Address for Correspondence/Yazışma Adresi: Serkan Burç Deşer, Department of Cardiovascular Surgery, İstanbul University-Cerrahpaşa, Cerrahpaşa School of Medicine, İstanbul, Turkey
E-mail/E-posta: sbd983@yahoo.com
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6-cm aneurysmatic dilatation of the left axillary artery. He was a farmer and preformed had intense physical activity in his daily life; further, he had no previous symptoms of fever, redness, insect bites, etc. He had no history of trauma, use of crutches, or possible injuries in the past or recent times under the left armpit. There was no history of hand or arm ischemia due to thromboembolism. Physical examination revealed a pulsatile mass with no erythema and induration around the left armpit. Both upper and lower extremity pulses were palpable. There was no ischemia, edema, and neurological defect in the extremities. Doppler US examination revealed an aneurysm (size: 69x34 mm) in the left arm and angiography revealed a thrombus (thickness: 2 cm) with a diameter of 6 cm.

The patient who was unsuccessful during endovascular stent implantation in the external center was hospitalized for surgery. Following routine surgical preparations and with informed consent, a transverse incision was made under the left armpit. Under general anesthesia, the aneurysm sac was incised, and the proximal and distal were controlled. The aneurysm sac was opened after systemic heparinization and clamping, and the thrombus was evacuated; the aneurysm was excised. Further, an 8-mm polytetrafluoroethylene (PTFE) (Gore-Tex®; W.L. Gore & Associates Inc., Flagstaff, AZ, USA) flat graft was anastomosed both proximally and distally. Distal pulses were taken after the removal of the clamps (Figures 1–3). No significant blood loss occurred during the operation. The operation lasted for approximately 1.5 h. The patient was taken to service after surgery and discharged on the postoperative day 2 without any complications. He was asymptomatic 12 months after surgery.

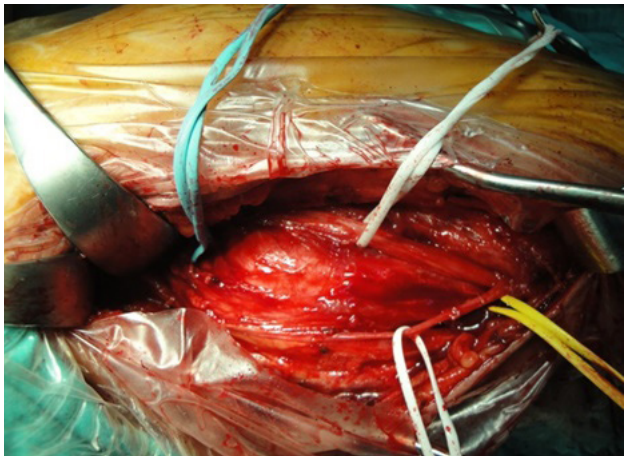

Figure 1. Appearance of the aneurysm sac

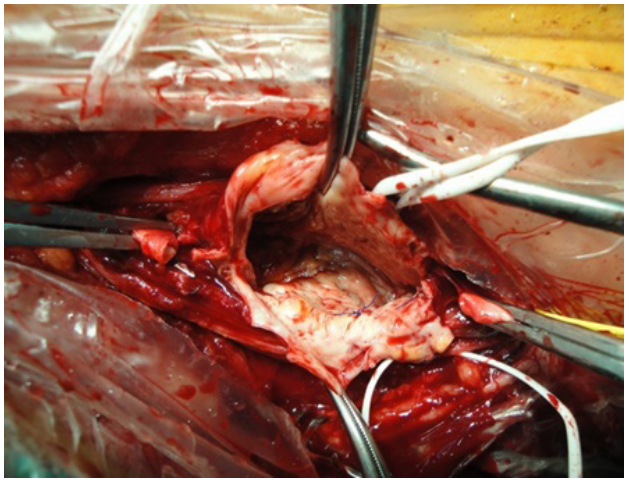

Figure 2. Opening of the aneurysm sac after controlling the proximal and distal

Discussion

Axillary artery aneurysms of the upper extremities are very rare and usually diagnosed as pseudoaneurysms. Therefore, the differential diagnosis of ganglion cysts, synovial cysts, dermoid cysts, abscesses, neural tumors, fibromuscular diseases, or Raynaud's disease must be considered. Doppler US, CT, MRI, and angiography can be used for diagnosis [9]. Rupture, thromboembolism, and surgical risk should be considered using the most accurate treatment method. Surgical intervention should be considered according to the severity of the patient's symptoms due to limited stent use in axillary artery aneurysms [4-7]. In axillary artery aneurysms, the compression of the brachial plexus may result in permanent or temporary neurological disorders. Such aneurysms can also cause thromboembolic complications. Selective upper extremity arteriography is the most important diagnostic method in traumas, obstructive lesions, and aneurysmal pathologies. Contrast-enhanced CT and color Doppler ultrasonography can also have diagnostic importance in such aneurysms [6]. Although endovascular techniques are used in several vascular condi-

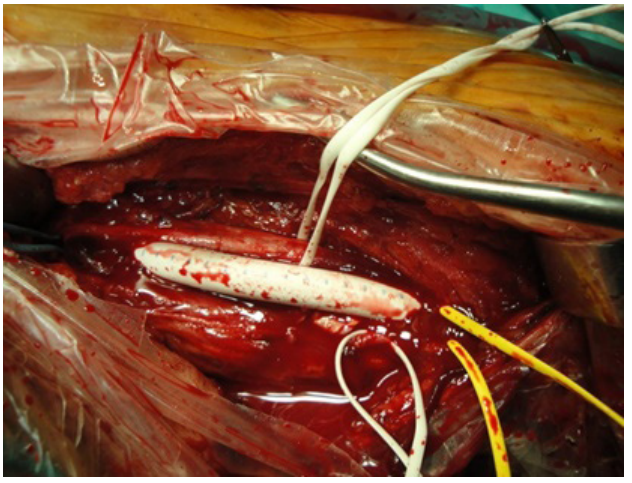

Figure 3. An 8-mm PTFE graft interposition after aneurysm excision

tions, the traditional surgical approach remains to be the best method. Aneurysmectomy and interposition with the saphenous vein graft application are currently used in the surgical treatment of axillary artery aneurysms [8]. Care should be taken not to damage the neighboring brachial plexus. To prevent extremity ischemia due to neurological complications and thromboembolism, an axillary artery aneurysm should be surgically resected and axillary artery reconstruction with appropriate vascular graft should be performed [9]. In conclusion, open surgery remains the primary treatment modality for axillary artery aneurysms.

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