Closure of a pseudo aneurysm developed after trauma in the brachial artery with endovascular stent graft: A case report

Burak Tamtekin¹, Güler Gülsen Ersoy¹, İsmail Dal²

¹Kastamonu Training and Research Hospital, Department of Cardiovascular Surgery, Kastamonu, Turkey
²Kastamonu Training and Research Hospital, Department of Thoracic Surgery, Kastamonu, Turkey

ABSTRACT

Aneurysm is defined as 50% enlargement of the normal diameter of the artery. The most common cause of true aneurysms is atherosclerosis. Pseudoaneurysms, on the other hand, occur as a result of the blood leaking from the tear in the arterial wall forming a thrombus formation and surrounding it with a fibrous capsule. In pseudoaneurysms, blood pools in a closed area. However, they may enlarge and rupture in the late period. Treatment options are thrombin injection, endovascular graft implantation, surgical ligation, and arterial bypass. In this case report, we present a patient with a stab wound to the axilla. Two years after the injury, a pseudoaneurysm developed in the left brachial artery. The pseudoaneurysm was treated with endovascular stent graft.

Keywords: Brachial artery, aneurysm, stent graft, minimal invasive

INTRODUCTION

With the development of technology, the surgical approach to aneurysms has completely changed. Classically, dilation of more than 50% of the normal arterial diameter is defined as an aneurysm. The most common cause of true aneurysms is atherosclerosis. Rarely, aneurysm may develop due to infection or congenital malformation. Pseudoaneurysms are caused by tears in the arterial wall. Blood leaking from the tears creates thrombus formation. Thus, a pseudoaneurysm surrounded by a fibrous pseudocapsule is formed. Pseudoaneurysms may enlarge and rupture (1). Peripheral artery aneurysms have been encountered more frequently in recent years (2). Increasing incidence of atherosclerosis is one of the reasons for this. Another reason is the widespread use of invasive endovascular methods for diagnosis and treatment. In this case report, we discuss a case of pseudoaneurysm treated with endovascular stent graft.

CASE REPORT

A 47-year-old gentleman was stabbed in the left axilla 2 years ago. Since there was no active bleeding on the day of the event, no intervention was performed. In the late period, there was a swelling extending from the axilla to the arm. Numbness and weakness developed in the left arm. A pansystolic murmur was detected on auscultation. The brachial artery and distal artery pulses could not be obtained with palpation. In addition, coldness was detected in the left hand. An aneurysmatic dilatation of 5×10 cm was detected in the left brachial artery on Doppler USG. Contrast-enhanced CT images were compatible with physical examination and Doppler USG (Figure 1a). The patient was recommended interventional endovascular treatment. The patient signed the informed consent form for the procedure.

The patient was transferred to the angiography unit. Percutaneous intervention was performed on the brachial artery from the left arm under USG guidance. An 8 Fr sheath was placed in the brachial artery. Brachial artery aneurysm was visualized by administering contrast agent (Figure 1b). The 7.0-6.0 selfexpandble flexible coated graft stent was opened in the pouch (Figure 1c). Balloon dilatation was performed into the stent graft and distal brachial artery with a 6.0 - 8.0 balloon. Post-procedure imaging revealed successful closure of the aneurysm vesicles. A complete patency was observed in the distal brachial artery (Figure 1d).

The patient was discharged 24 hours after the procedure. Antiaggregant therapy was prescribed. In the outpatient clinic control 1 month later, it was observed that the aneurysm sac was thrombosed and there was full patency in the brachial artery.
In delayed cases, extremity loss and even mortality may occur (3). In the treatment, interventional techniques or surgical methods can be performed. Compression with a bandage may be effective in small sized radial and ulnar pseudoaneurysms. Thrombin injection or endovascular graft implantation can be performed as an interventional method (8,9). In addition, surgical ligation or arterial bypass can be performed. Since the case we presented had a large brachial artery aneurysm, procedures such as bandage or compression were not planned. The patient was treated with endovascular stent graft placement. In addition, balloon dilatation of the brachial artery was performed. After the procedure, pulses could be taken in the brachial, radial and ulnar arteries.

CONCLUSION

Large brachial artery aneurysm, which is rare after penetrating trauma, can be treated with endovascular interventional method as an alternative to surgical treatment.

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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