Poststab Injury Subclavian Artery Pseudoaneurysm Excision

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Abstract

Poststab injury subclavian artery pseudoaneurysm is a rare entity with great significance because of the risk of complications such as thrombosis, rupture, gangrene, or limb loss. It should be repaired early whenever diagnosed. Our case report has a 24-year-old male patient with a history of stab injury to left supraclavicular region followed by pulsatile swelling after 2 days due to subclavian artery pseudoaneurysm. We excised the pseudoaneurysm with vein patch repair of the subclavian artery.

Key Words: Pseudoaneurysm, pulsatile swelling, stab injury, subclavian artery

Introduction

According to the literature data, posttraumatic pseudoaneurysm is a rare entity. Most common site is common femoral artery, followed by radial and brachial artery but subclavian artery is very rare because trauma to it is rare. Incidence of complications associated with such pseudoaneurysm is estimated around 2–6%. We present a case of the patient in whom a pseudoaneurysm of left subclavian artery developed after 2 days of stab injury by pointed object and was successfully treated by surgical excision and vein patch closure of opening in subclavian artery.

Case Report

A 24-year-old male patient was admitted to our institute with a history of stab injury to left supraclavicular region lateral side that was closed at a local hospital [Figure 1]. After 2 days, the patient noticed gradually increasing pulsatile swelling at closed stab injury site. Clinical examination revealed the presence of pulsatile 10 cm × 10 cm mass at stab injury site. Left brachial, radial, and ulnar artery pulsations were palpable. Ultrasonography and computed tomography angiography revealed a pseudoaneurysm in the third part of left subclavian artery (two arterial defects) [Figure 2].

The patient underwent surgical intervention under general anesthesia. A left supraclavicular incision was used to access and loop the proximal subclavian artery [Figure 3a and b]. A left transaxillary incision was made to access and loop the axillary artery. Intravenous heparin (5000 IU) was administered. The proximal subclavian and axillary artery were clamped. Dissection and separation of pseudoaneurysm followed by excision were done with cautery along with its content the clotted blood [Figure 4a and b]. The arterial defect was repaired with vein patch using prolene 6-0. The vein patch was prepared from a small axillary vein tributary. The wound was closed in layers over a drain [Figure 5]. The skin was closed with staples. The radial and ulnar artery pulsation were normal postoperatively. The drain was removed after 48 h and the patient was discharged on the 10th postoperative day.

Discussion

The most common cause for a posttraumatic pseudoaneurysm is iatrogenic such as postarteriovenous fistula dialysis needle puncture or invasive procedures such as percutaneous coronary interventions. Most common sites for such pseudoaneurysms are the radial, brachial, and common femoral artery. A subclavian artery pseudoaneurysm after a stab is rare.

Repair of a subclavian artery pseudoaneurysm with a vein patch may be possible in some cases where the trauma is recent and the artery normal. Meta-analyses showed no superiority of subclavian stenting in such pseudoaneurysm. Although the arterial leak may be stopped by stenting, the remnant pseudoaneurysm hematoma remains at a high risk of infection. Operative repair is thus a more preferable option. A more delayed presentation may necessitate repair with subclavian artery excision with interposition grafting.

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Access this article online

Website: www.indjvascsurg.org

DOI: 10.4103/0972-0820.180219

How to cite this article: Nagre SW, Bhosle KN, Khatod A. Poststab Injury Subclavian Artery Pseudoaneurysm Excision. Indian J Vasc Endovasc Surg 2016;3:31-2.

Received: January, 2016. Accepted: February, 2016.
Conclusion
Proximal and distal control of artery is must for safe excision of any pseudoaneurysm. By proper anatomical dissection, pseudoaneurysm can be excised without damaging the surrounding vital structure such as brachial plexus and axillary vein. Timely management is important to prevent complications such as infection, rupture, and gangrene. If the subclavian artery is normal after excision of the pseudoaneurysm, a vein patch closure may suffice.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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