

**Case Report**

## **SUBCLAVIN ARTERY PSEUDOANEURYSM SECONDARY TO ACCIDENTAL STONE CHIP INJURY AND ITS EXCISION**

**\*Nagre S. W.**

*Grant Medical College, Mumbai, India*

*\*Author for Correspondence*

### **ABSTRACT**

A pseudoaneurysm, also known as a false aneurysm, is a hematoma that forms as a result of a leaking hole in artery. Hematoma is contained by the surrounding tissues. Also it must continue to communicate with the artery to be considered a pseudoaneurysm. Post stab injury subclavin artery pseudoaneurysm is rare entity with great significance because of risk of complications like thrombosis, rupture, gangrene, limb loss and should be operated early whenever diagnosed. Our case report has 18 year male patient with history of accidental stone chip injury to left supraclavicular region followed by pulsatile swelling after five days due to subclavin artery pseudoaneurysm. We excised pseudoaneurysm with direct closure of opening in subclavin artery and removal of stone chip.

**Keywords:** *Pseudoaneurysm, Stone Chip Injury, Subclavin Artery, Pulsatile Swelling*

### **INTRODUCTION**

According to the literature, post traumatic pseudoaneurysmis rare entity (Sherev *et al.*, 2005). Most common site is common femoral artery, followed by radial and brachial artery but subclavin artery is very rare because trauma to it is rare. Incidence of complications associated with such pseudoaneurysm is estimated around 2–6% (Muller *et al.*, 1992). We present a case of the patient in whom pseudoaneurysm of left subclavin artery developed after five days of accidental stone chip injury and was successfully treated by surgical excision of pseudoaneurysm and removal of stone chip with direct closure of opening in subclavin artery.

### **CASES**

An 18 -years-old male patient was admitted at our Institute with a history of accidental injury to left supraclavicular region at lateral side by stone chip while walking nearby to stone chipper [Figure 1A]. After five days the patient noticed gradually increasing pulsatile swelling at injury site. Clinical examination revealed presence of pulsating mass at injury site of 12 by 12 cm in diameter. Left brachial, radial and ulnar artery pulsations are palpable. Chest Xray shown radiopaque stone chip below left clavicle [Figure 1B]. Ultra sonography and CT angiography verified presence of pseudoaneurysm connected by opening in second part of left subclavin artery (12 cm in diameter) [Figure 2].

After short preoperative preparation, the patient underwent surgical intervention under general anaesthesia. Left supraclavicular incision taken to access and loop the proximal subclavin artery [Figure 3A, 3B]. Left side transaxillary incision taken to access and loop the axillary artery. Intravenous heparin (5000 IU) was administered. Proximal subclavin artery and axillary artery both clamped. Dissection and separation of pseudoaneurysm followed by excision was done with cautery along with its content the clotted blood [Figure 4A, 4B]. Stone chip causing trauma also removed. The opening of pseudoaneurysm in left subclavin artery was closed with prolene 6-0 directly. After putting 14 number negative suction romovac drain in supraclavicular and axillary region, wound closed in layer [Figure 5]. Skin closed with stappler. Radial and ulnar artery pulsation checked. Drain removed after 48 hours. On the seventh postoperative day the patient was discharged.

### **DISCUSSION**

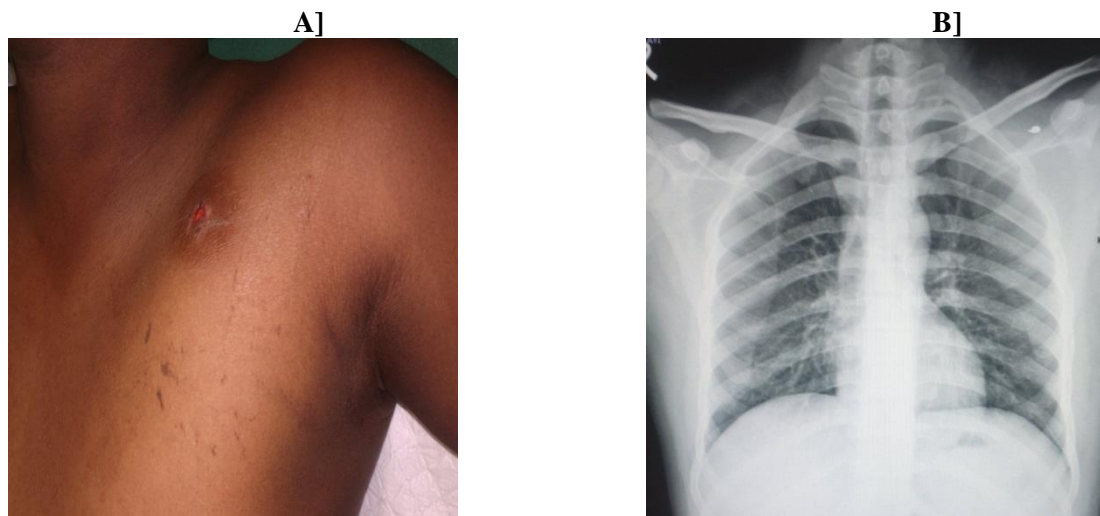
Post traumatic pseudoaneurysm is rare. The most common cause for such pseudoaneurysm is itragenic like post av fistula dialysis needle puncture or invasive procedures like percutaneous coronary

### Case Report

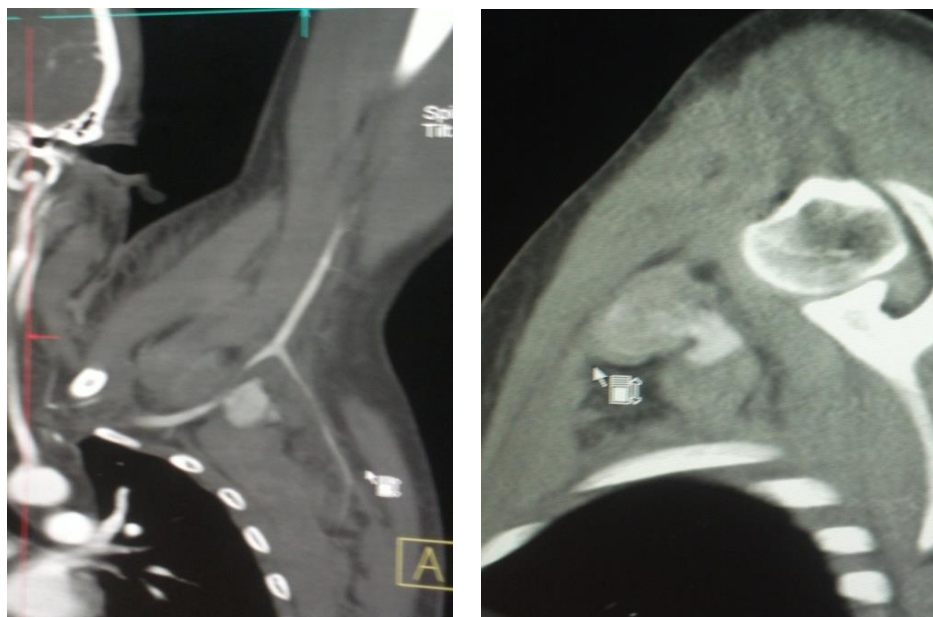
interventions. Most common site for such pseudoaneurysm are radial, brachial and common femoral artery. Post foreign injury pseudoaneurysm is rare in that subclavin artery pseudoaneurysm was rarest. If such pseudoaneurysm became infected, the surgical treatment can be extremely difficult.

Although recently published, meta-analyses showed no superiority of subclavin artery stenting in such pseudoaneurysm because even after closing the opening which connect subclavin artery with pseudoaneurysm, the already formed pseudoaneurysm is high risk of infection (Koreny *et al.*, 2004; Carey *et al.*, 2001). So, excision of that pseudoaneurysm is must.

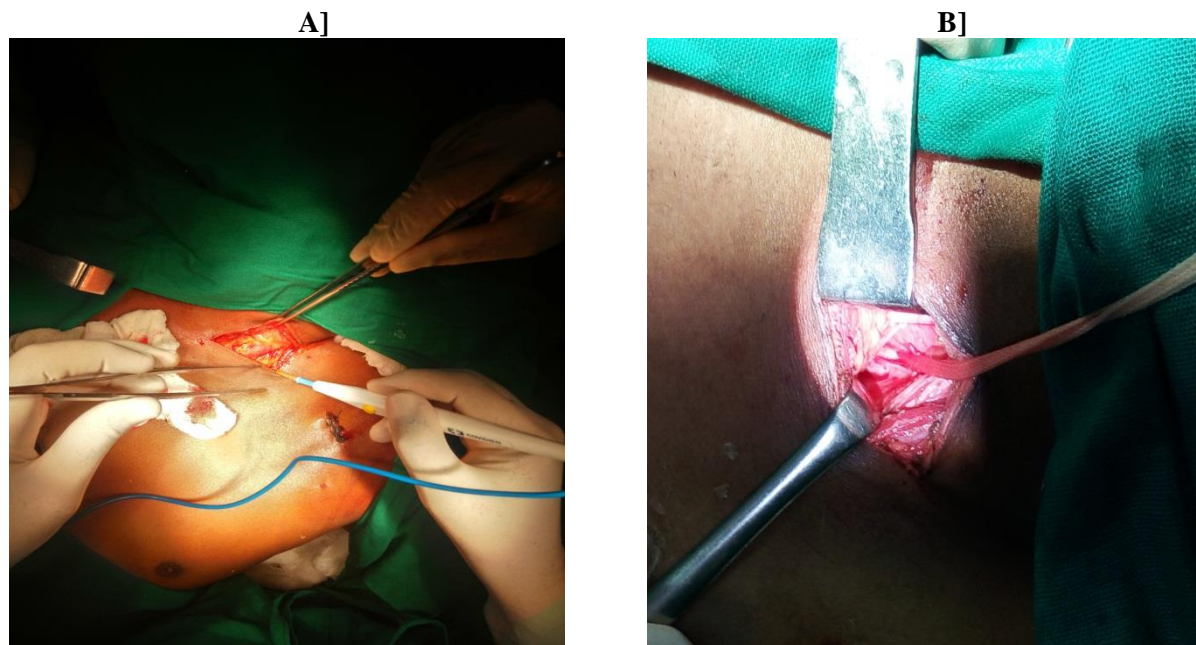
If the subclavinartery is normal with clearly visible opening that connect with pseudoaneurysm then pseudoaneurysm can be excised without sacrificing the part of subclavin artery by just direct or vein patch closure of that opening with prolene suture. Sometimes, rarely excision of part of subclavin artery with interposition grafting may be required.



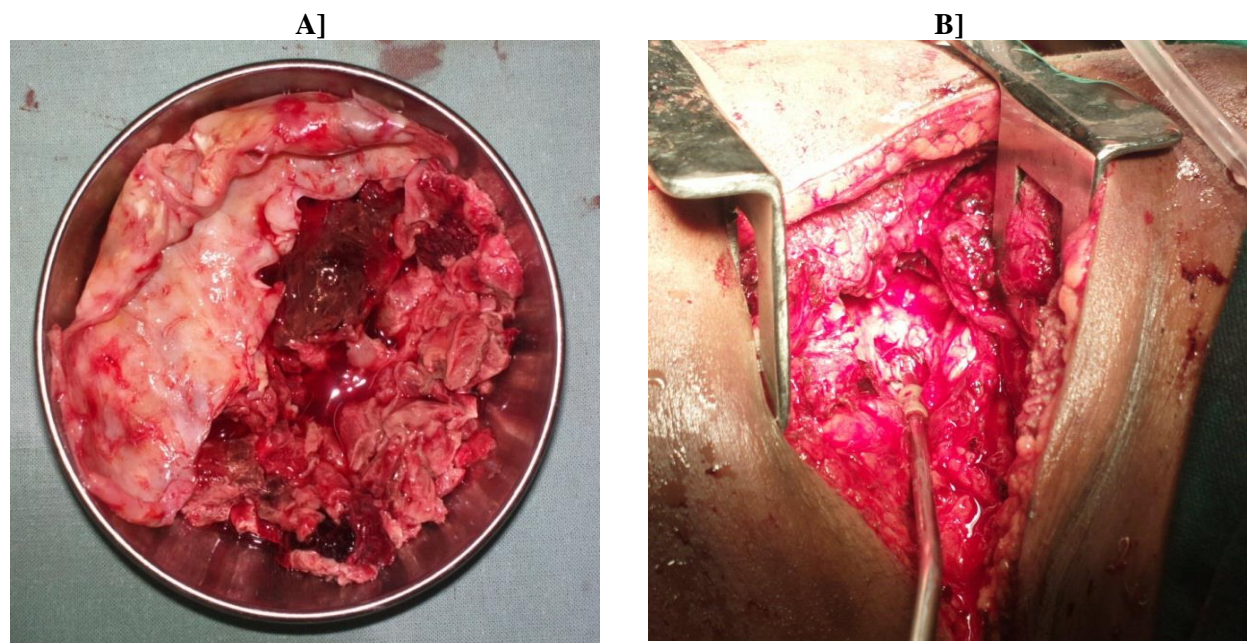
**Figure 1 –A] Entry Wound in Supraclavicular Region due to Stone Chip; B] Chest X Ray Showing Radio Opaque Stone Chip below Left Clavicle**



**Figure 2: CT Angiography Showing Subclavin Artery Pseudoaneurysm with Openings in Subclavin Artery**



**Figure 3: A] Supraclavicular Incision to Expose Proximal Subclavin Artery B] Exposed and Looped Subclavin Artery**



**Figure 4: A] Excised Pseudoaneurysm; B] Opening in Subclavin Artery Closed Directly by Prolene 6-0**

### **Conclusion**

The pseudo aneurysm excision was simple and safe even in inexperienced hands by proper anatomical knowledge. Proximal and distal control of artery is must for safe excision of pseudoaneurysm. By proper anatomical dissection pseudo aneurysm can be excised without damaging the surrounding vital structure like brachial plexus and axillary vein. Timely management was important to prevent complications like infection, rupture and gangrene. If the subclavin artery is normal with clearly visible opening feeding



### Case Report

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**Figure 5: Closed Tranaxillary and Supraclavicular Surgical Incision with Negative Suction Drain in Situ**

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