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# A CASE REPORT ON CRUTCH INDUCED AXILLARY ARTERY ANEURYSM

Vascular Surgery

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## ABSTRACT

**Introduction –** True axillary artery aneurysms are very rare. Crutch induces axillary artery aneurysm develop as a result of abnormal weight bearing over the crutches for a long duration and may also give rise to ischemic limb changes. **Case Discussion** – A 32 year old gentleman presented to hospital with pain and numbness of left upper limb since 1.5 months associated with blackish discoloration of left ring and little finger since 1 month. Patient gave history of chronic smoking. On examination, there were feeble left ulnar and radial pulsations and a pulsatile swelling was palpable along the course of left axillary artery which was soft and compressible with thrill. Left upper limb doppler was suggestive of focal fusiform dilatation of left axillary artery of maximum diameter 3cm with circumferential thickening of intimal wall and partial lumen occluding thrombus. Patient was managed by resection of left axillary artery aneurysm with interposition of left great saphenous vein graft. Patient had palpable ulnar and radial pulsations in the post operative period and was discharged on post-op day 5. **Conclusion** -The presented case highlights that axillary artery aneurysms secondary to use of crutches are rare which can be managed by resection and great saphenous vein graft interposition

## KEYWORDS

## INTRODUCTION :

True axillary artery aneurysms are very rare entity . [1,2] .Compared to lower limb aneurysm , upper limb aneurysms are less common , account for less than 1 % of peripheral arterial aneurysm of which 10% account to axilary artery aneurysm and only 0.15 % being true aneurysm , crutch induced are even rare. [1,2] .Crutch induced axillary artery aneurysm develop as a result of abnormal weight bearing over the crutches for a long duration and may also give rise to limb ischaemic changes[3]

Meticulous examination of the course of the vessel is essential. Ultrasound with doppler should be preferred primary investigation[3,4] .Rule out vascular origin for any lump nearer to normal site of any vessel before planning for biopsy[3]

## Case Report:

A 32 year old gentleman presented to the hospital with complaints of pain and numbness of left upper limb since 1.5 months. It was associated with blackish discolouration of left ring and little finger since 1 month. On enquiring patient gave a history of chronic smoking since last 10 years ( 20 pack-years ) .

Patient is not a known case of diabetes mellitus or hypertension. There is no history of similar complaints in the family. Past history reveals that patient was previously operated for left below knee amputation secondary to left lower limb peripheral arterial occlusive disease 3 years back. And he has been using crutches since then.

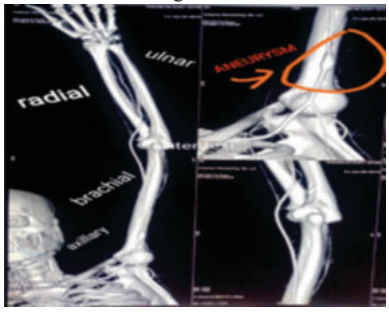


**Figure 1**. Left Upper Limb CT Angiography

On examination, patient was hemodynamically stable. Left radial and ulnar artery pulsations were not palpable. Left brachial artery pulsations were feeble. Pulsatile (expansile) swelling was palpable along the course of left axillary artery of about 2 x 1 cm with smooth surface, soft, compressible with thrill and bruit suggestive of left axillary artery aneurysm.

A left upper limb arterial doppler was ordered which was suggestive of focal fusiform dilatation of left axillary artery of maximum diameter 3 cm with circumferential intimal wall thickening and partial lumen occluding thrombus. Features suggestive of left axillary aneurysm.

CT Angiography of left upper was suggestive of a left axillary aneurysm with maximum diameter of 3cm Patient was posted for operative procedure and resection of left axillary aneurysm with interposition of left great saphenous vein graft was done.

**Figure 2.** Intraoperative image showing left axillary aneurysm

**Figure 3**. Intraoperative image showing repair of aneurysm

Patient was hemodynamically stable in the post-operative period and was discharged on post-op day 5 with warm peripheries and palpable left ulnar, radial artery pulsations on examination.

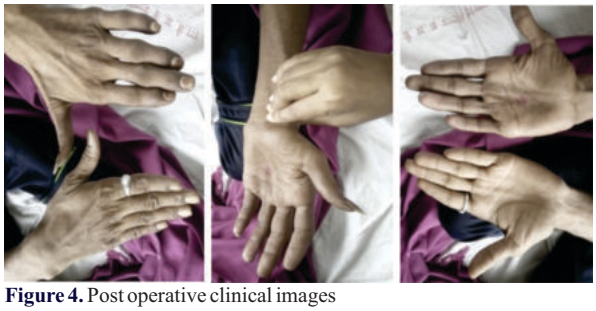

**Figure 4.** Post operative clinical images

## DISCUSSION:

With an increasing number of patients with permanent physical disabilities or using lower extremity prosthetic devices, the use of axillary crutches has also increased. Axillary crutches are designed to help the individual walk with reduced weight-bearing on the using lower extremity. The purpose of the horizontal axillary bar on the crutch is to provide lateral stability with pressure against the chest wall. However, when crutches are used incorrectly, 34% of the body weight is transferred to the axilla, resulting in up to a sevenfold increase in the force on the axilla[5].

Formation of an aneurysm is relatively rare compared to stenotic or thrombotic occlusions, possibly because it takes several decades to weaken the wall of the artery and cause the formation of an aneurysm. However, review of the available case literature shows that the incidence rates of aneurysms and stenotic or occlusive lesions are similar, developing in cases in which crutches have been used for just a few months[6]

The mainstay of treatment for aneurysms of the axillary artery is surgery. Resection and replacement with a suitable graft is the preferred approach. The majority of authors favors the use of reversed autogenous saphenous vein grafts over polytetrafluoroethylene material for upper-extremity arterial replacement. Others have recommended proximal and distal ligation of the aneurysm with subsequent bypass grafting to optimize limb blood flow[7]

## CONCLUSION:

The presented case highlights that axillary artery aneurysms secondary to use of crutches are rare which can be managed by resection and great saphenous vein graft interposition.

**This case demonstrates,**

a) The rarity of axillary artery aneurysms secondary to use of crutches.
b) Axillary artery aneurysms can be diagnosed clinically with supplementation of arterial doppler and CT angiography. Resection of aneurysm with great saphenous vein grafting is the treatment of choice.

**Disclosure:** No portion of the manuscript, including images, contains patient-identifiable information.

**Conflict of Interests:** The authors declare that there is no conflict of interests regarding the publication of this paper.

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