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# NON TRAUMATIC FEMORAL ARTERY PSEUDO-ANEURYSM: A RARE PRESENTATION

**[1]Satya Prakash Meena, [2]Surendra Patel, [3]Mahaveer Rodha, [4]Mahendra Lodha**

[1]Assistant Professor, Department of General Surgery, AIIMS Jodhpur, Rajasthan, India

[2] Assistant Professor, Department of Trauma & Emergency (Cardio-Thoracic Surgery), AIIMS Jodhpur, Rajasthan, India

[3]Additional Professor, Department of Trauma & Emergency (General Surgery), AIIMS Jodhpur, Rajasthan, India

[4]Associate Professor, Department of General Surgery, AIIMS Jodhpur, Rajasthan, India

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Corresponding author: Dr Satya Prakash Meena

**Abstract:**

A sixty-six years old male patient presented with left upper thigh pulsatile swelling for 5 months. He had no history of any trauma or chronic infection. All necessary investigations were done. The diagnosis was uncertain and could not differentiate between femoral artery pseudo- aneurysm and vascular soft tissue tumor. Intraoperative findings were suggested chronic pseudo-aneurysm of the femoral artery and diagnosis supported by histopathology. We concluded that chronic non-traumatic femoral artery pseudo-aneurysm is very rare and early surgery should be initiated to prevent complications.

**Keywords:** Swelling, Pulsatile, femoral, Pseudo-aneurysm

## Introduction

*False aneurysms* or pseudo-aneurysms are differentiated from true aneurysms by the presence of blood flow outside the normal layers of the arterial wall. At its most basic level, a pseudo-aneurysm is simply a hole in an artery that allows extravasation of blood into a contained space outside the artery, it remains pulsatile because of the "to-and-fro" motion of blood in the aneurysm sac. The wall of the false aneurysm is composed of the compressed, surrounding tissues, not the wall of the artery from which the lesion arises known location of non-traumatic aneurysm is the thoracic aorta in the chest and renal artery, splenic artery, mesenteric vessels, and iliac vessels in abdomen. Popliteal artery is a common site of non-traumatic peripheral artery aneurysm. The femoral artery is common site of traumatic pseudo-aneurysm in extremities. Most patient has a recent history of blunt trauma in femoral artery pseudo-aneurysm. Sometime penetrating injury has also cause for it during femoral artery cannulation in intensive care units, dialysis, blood sampling in shock. [1, 2, 3] Patients usually presents with swelling of thigh, pain in legs, discoloration, numbness, and inability to move a limb. These patients are at risk of severe complication like a rupture, thrombosis, infection. [7] Rupture of femoral artery pseudo-aneurysm can cause hemorrhagic shock and difficult to manage. [8] Thrombosis can cause gangrene lower limb. Prognosis is very poor in those complications and amputation will be the last resource to save lives.

## Case Report

A 66 year old male patient was presented in outdoor patient department with a complaint of swelling in left thigh since last 5 months. This was not associated with any kind of pain, numbness, discoloration of the legs and difficulty in walking. There was no history of recent or old injury. On clinical examination there was visible 7x7 cm size, pulsatile swelling on the medial side of the left upper to mid-thigh (figure 1). On palpation swelling was firm, with smooth surface, having *expensile* pulsation and non-tender. There was no sign of gangrene or discoloration, numbness, and ulcer in *the lower limb*. All arterial pulsation were normal in both lower *limbs*. There were no medical or surgical comorbidity except COPD due to chronic smoker. Patient was anemic and hemoglobin was 8.0 gm/dl, rest of all other blood investgations were within normal limits.

**Figure 1:** Showing swelling medial aspect of left thigh

Ultrasonography finding was hypo to hetroechoic mass in left thigh measuring 3.6x3.1x2.39 cm in size and 14 cc volume, vascularity in it from the major vessel to total diameter 5.8 mm, approximate 5.4 mm deep from skin surface suggested Muscle Mass? Lipoma?? Aneurysm. *The MRI finding suggests the possibility* of chronic soft tissue hematoma/thrombosed aneurysm of *the proximal superficial femoral artery* (size 7.2x6.7x5.0 cm) and *another* possibility of soft tissue hemorrhagic neoplasm cannot be ruled out. Final clinical diagnosis was still uncertain and exploration was done.

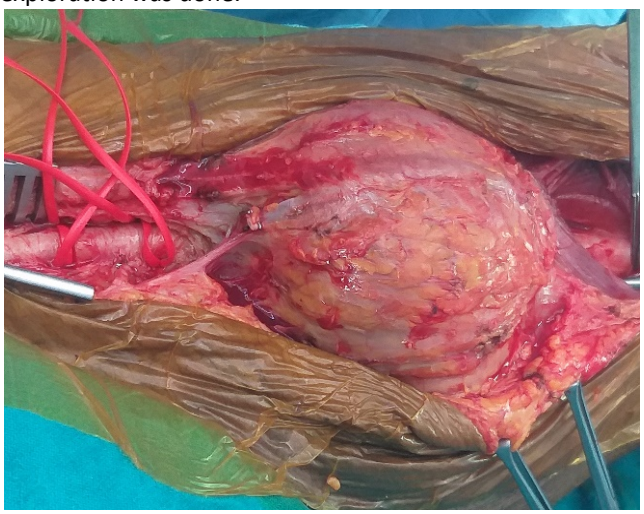

**Figure 2:** Showing large sac of pseudo aneurysm, vessel loops taking proximal control of superficial femoral artery.

Intraoperative findings were, there was large 7 x 7 cm mass with a thick sac present arising from superficial femoral artery (figure 2) and neck of sac was around 2 cm communicating with anterior part of superficial femoral artery (figure 3). Femoral artery was friable and not healthy up to 4 cm length.

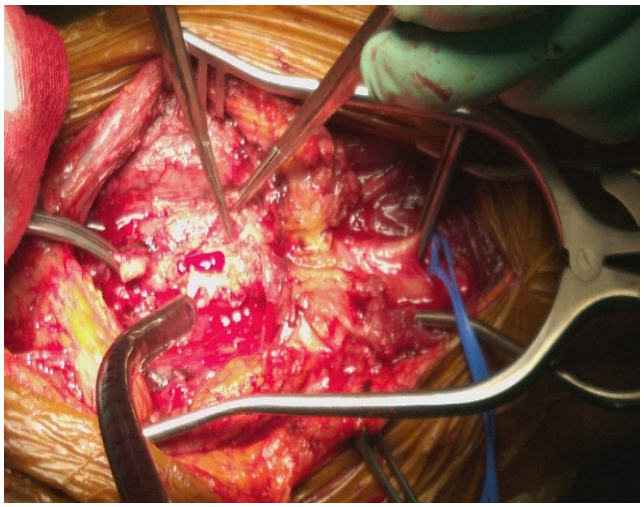

**Figure 3:** Showing opened sac of pseudoaneurysm and neck of sac communicating with superficial femoral artery.

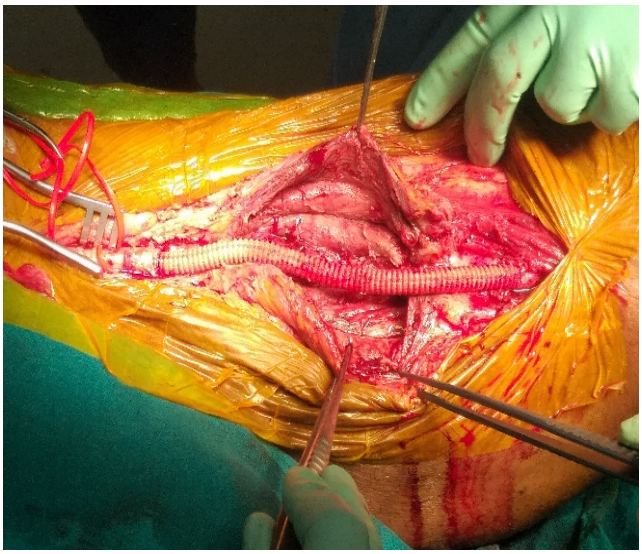

**Figure 4:** Showing opened up sac of pseudo-aneurysm and repair of superficial femoral artery by interposition Dacron graft 7 mm size.

After taking proximal and distal control of the superficial femoral artery, sac of pseudo-aneurysm opened and organized clots removed and neck of sac identified and wall of sac partially excised. As superficial femoral artery around sac was friable and was not healthy so around 4 cm superficial femoral artery excised and repaired with interposition Dacron graft 7 mm size (figure 4). Intraoperative finding were in favor of pseudo-aneurysm of superficial femoral artery with chronic changes. Hemostasis achieved patency of femoral blood flow ensured and skin closure was done with a negative suction tube under low pressure. Heparin infusion was given in the postoperative period and oral anticoagulants started. The patient was discharged on day 7 of surgery with healthy wound and palpable distal pulsations. Oral anticoagulant drugs continued keeping INR of 2-3. In follow up period patient was readmitted for observation with complaint of small swelling over operated site but peripheral pulsation was maintained. The final histopathology report suggested of blood clots with non-necrotizing granulomatous inflammation and PAS, ZN stain were negative for fungal elements or Acid-fast bacteria. A patient again discharges in satisfactory condition. Next all follow up period was uneventful.

**Discussion**

Our case presented as a non-traumatic femoral artery pseudo-aneurysm in our outpatient department. He had a five month history of left thigh swelling without any complication. Till now no studies were published for nontraumatic femoral artery pseudo-aneurysm. Most of the studies included iatrogenic injury in femoral artery during intervention or cardiac monitoring in the intensive

care unit. [1, 2, 3] The incidence of iatrogenic injuries varies from 0.5% to 10 %, according to the complexity of the procedure. [6] There were short duration (average 5-20 days) of femoral artery pseudo aneurysm formation and presented with rupture, infection, bleeding or swelling only. [7, 8]

Duplex scanning with color Doppler ultrasound is important basic investigation for diagnosis of pseudo-aneurysm with criteria - A swirling type of color flow in a sac which is separated from adjacent vessels, color flow within an existing tract leading from the artery to the sac consistent with a neck of pseudo-aneurysm and a typical "to and fro" Doppler waveform seen in in the pseudo-aneurysm neck. [5] In our study Doppler ultrasound suggests hypo to hetroechoic vascular mass in thigh, but could not differentiate in vascular muscle mass or aneurysm, although the sensitivity of Doppler ultrasonography is 94-97 %. [4]

In medical management, pseudo-aneurysm can be treated with Doppler ultrasound guided compression repair, percutaneous interventions like thrombin injection, coil embolization, and insertion of different type of vascular stents.[4] In our case patient had a long history without complication and heterogeneous vascular mass in ultrasound, vascular soft tissue neoplasm in MRI with angiography. We concluded there was also the possibility of some soft tissue vascular tumor and decision was taken for surgery. Intraoperative finding and Histopathology of the excised mass were in favor of our diagnosis as non-traumatic pseudo-aneurysm of the femoral artery.

Our case reports are unique because Non traumatic femoral artery pseudo-aneurysm cases were not reported yet as per literatures. This is very rare case and minimal intervention can delay the definitive management in thick wall chronic pseudo-aneurysm. To prevent life threatening complications, early vascular surgery should be initiated.

**Conclusion**

Chronic non-traumatic femoral artery pseudo-aneurysm is very rare and early vascular surgery can prevent life threatening complications.

**References**

1. Julie Renner, Pierre Pasquier, Elisabeth Falzone, Faye Rozwadowski, and Stéphane Mérat. Life-Threatening Rupture of a False Aneurysm after Femoral Arterial Catheterization: Unexpected Delay after a Common Procedure. Volume 2013, Article ID403507,3 pageshttp://dx.doi.org/10.1155/2013/403507.
2. B. V. Scheer, A. Perel, and U. J. Pfeiffer, "Clinical review: complications and risk factors of peripheral arterial catheters used for haemodynamic monitoring in anaesthesia and intensive care medicine," Critical Care,vol.6,no.3,pp.198–204,2002.
3. T. Maecken and T. Grau, "Ultrasound imaging in vascular access," Critical Care Medicine,vol.35,no.5,pp.S178–S185,2007.
4. F. Ahmad, S. A. Turner, P. Torrie, and M. Gibson, "Iatrogenic femoral artery pseudoaneurysms—a review of current methods of diagnosis and treatment," Clinical Radiology,vol.63,no.12,pp. 1310–1316, 2008.
5. M. Lenartova and T. Tak, "Iatrogenic pseudoaneurysm of femoral artery: case report and literature review," Clinical Medicine & Research,vol.1,no.3,pp.243–247,2003.
6. A. T. Truong and D. R. Thakar, "Radial artery pseudo aneurysm:a rare complication with serious risk to life and limb," Anesthesiology, vol. 118, no. 1, p. 188, 2013.
7. C. A. Soderstrom, D. H. Wasserman, and C. M. Dunham, "Superiority of the femoral artery for monitoring. A prospective study," American Journal of Surgery,vol.144,no.3,pp.309–312,1982.
8. K. Muralidhar, "Complication of femoral artery pressure monitoring," Journal of Cardiothoracic and Vascular Anesthesia, vol.12,no.1,pp.128–129,1998.