## CHIRURGIE VASSCULAIRE / VASCULAR SURGERY

# FALSE TRAUMATIC ANEURYSM OF THE LEFT RADIAL ARTERY IN A TEENAGER

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**Abstract**
A 17-year-old man sustained a minor penetrating injury to his left foreman, resulting in false aneurysm formation. It is a generally rare unrecognized pathology. Complications are serious: embolism and thrombosis of interdigital arteries. The diagnosis is based on the presence a pulsatile mass, with finger dysesthesia. It is confirmed by duplex Doppler. Surgical treatment was successful
Keywords: False, aneurysm, radial artery, surgery.

**Résumé :**
Les anévrysmes des artères de la main sont le plus souvent d'origine traumatique. Il s'agit d'une pathologie assez rare, aux conséquences parfois graves, car se compliquant de thrombose ou d'embolie distale au niveau des artères interdigitales. Le diagnostic est suspecté devant une masse pulsatile, sensible, associée à des dysesthésies des doigts. La confirmation est apportée par l'échographie doppler.
Nous rapportons le cas d'un adolescent présentant un faux anévrisme de l'artère radiale post traumatique traité chirurgicalement.
**Mots clés :** Faux, anévrisme, artère radiale, chirurgie.

## Introduction

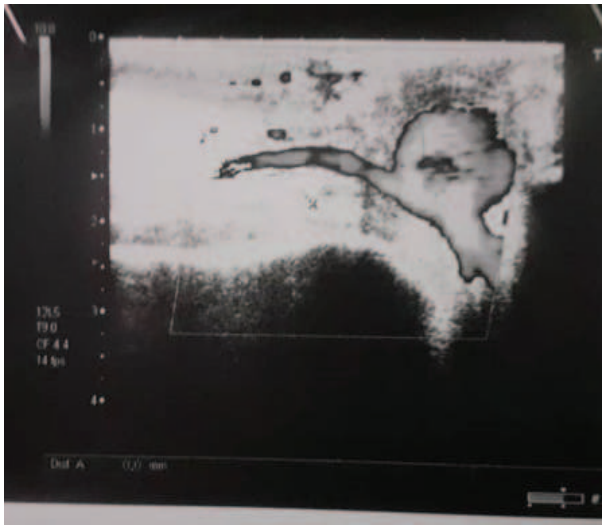
A false aneurysm is defined as extravasation of blood with hematoma formation outside the lumen of an artery, which is contained by the surrounding tissue and continues to communicate with the vessel.

Penetrating trauma is the most common cause and increasingly this is iatrogenic secondary to the increase number of endovascular procedures[1,2]. We report a case of false traumatic aneurysm of left radial artery in a teenager patient, successfully treated by open surgery.

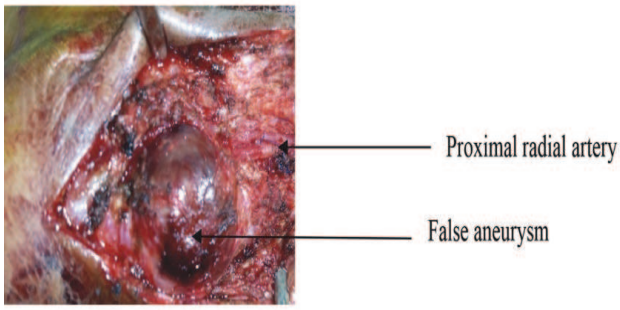
## Case report

A 17-year-old man, who cut his left wrist with a nail, presented to the Emergency department 28 days later, with a painful lump on the site of trauma. Physical examination revealed a pulsatile mass on the lateral region of his left wrist. There was no neurological deficit and Allen's test demonstrated that both the radial and ulnar arteries were patent and that the palmer arch was intact.

Duplex ultrasonography confirmed the diagnosis of a false radial artery aneurysm, which measured 2 mm of great diameter (Picture 1). Given its size with local pressure effects on the skin and spontaneous risk of breaking, we decided to intervene, after writing consent of the patient. A requirement to reduce the tension on the skin to prevent subsequent pressure necrosis, made surgery the most appropriate option in this case. After skin incision, we note a voluminous false aneurysm (Picture 2). We performed an exclusion of the false aneurysm from the native radial artery, and direct suture with 3-0 polypropylene. under loco-regional anesthesia by brachial plexus blocked. At one month follow up, he was asymptomatic with no post-operative complications.



**Picture 1: Doppler view of false neurysm.**




**Picture 2: Pre-operative view of false radial artery aneurysm after dissection.**

## Discussion

False and true radial artery aneurysm in teenager are less frequent. Most of time, trauma is the predominant etiology. Diagnosis is evoked in the presence of complications. As Radial nerve injury by compression, with hypoesthesia at thenar eminence. Other potential complications are distal embolization, which might lead to possible ischemia of the extremities.

In our case, we had radial artery damage by direct trauma. Clinical presentation showed a pulsatile mass, without neurological deficit. False radial aneurysms in teenager are less frequent, as reported by some authors[3]. Exceptional cases of false traumatic axillary artery aneurysms had been reported[4]. In most cases, direct trauma, lead to neither complete arterial section, or incomplete arterial lesion. A pulsatile mass and direct trauma notion, are sufficient to evoke false aneurysm even when complications are absent. Confirmation of the diagnosis has been realized by duplex ultrasonography. In our institution, arteriography has not been realized. Once diagnosis has been done, surgery is urgent. Several therapeutic approach might be used, such as: conventionnal surgical approach, catheterization, or

embolization with coils. Our department, has only one therapeutic option, surgical approach. We realize false aneurysm exclusion by direct suture of a tear between the radial artery and the aneurysm hull. Therapeutic attitude is controversial. Some authors, defend surgical approach with systematic revascularization, to prevent thromboembolic events in one hand. Revascularization by end to end, saphenous vein graft interposition is feasible with good results[6]. Therapeutic abstention may be possible, in asymptomatic and patients with small aneurysm[7]. In the presence of painful mass, with difficulty to work or practice sport, or existence of neurologic symptoms; aneurysm excision is mandatory[8,9]. If contra-lateral artery is dominant, and collateral vessels well developed, simple ligation of injury artery may be indicated[10]. Others therapeutic technics might be used, for example interventional approach[11]. Komorowska et al[12], reported their results about intraarterial thrombin injection under duplex ultrasonography.

## Conclusion

Diagnosis of false radial aneurysm in a teenager, might be evoked when specific symptoms are presents, in the context of penetrant trauma in history. Duplex ultrasonography, is essential for the diagnosis. Surgical revascularization remains the landmark for the treatment to prevent complications.

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