

## Bilateral Axillary Artery Aneurysms: A case report

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World Journal of Advanced Research and Reviews, 2025, 27(02), 647-651

Publication history: Received on 30 June 2025; revised on 09 August 2025; accepted on 11 August 2025

Article DOI: <https://doi.org/10.30574/wjarr.2025.27.2.2899>

### Abstract

An aneurysm is defined as a loss of arterial parallelism associated with an increase in vessel diameter exceeding 50% of the original size. Axillary artery aneurysms are rare and often asymptomatic. Their clinical presentation includes painful pulsatile masses, upper limb ischemia, or rupture. We present a case of bilateral axillary artery aneurysms to highlight the management of this rare condition, where surgical intervention remains the cornerstone, with endovascular approaches playing a supportive role.

**Keywords:** Aneurysm; Axillary Artery; Ischemia; Painful Mass; Prosthetic Bypass

### 1. Introduction

Axillary artery aneurysms are a rare form of peripheral arterial aneurysms. They can manifest as pulsatile axillary masses, compression-related neuralgia, or complications such as distal embolization or rupture(1). We report the case of a 61-year-old woman with end-stage renal disease on chronic hemodialysis via a radiocephalic arteriovenous fistula (AVF), who presented with bilateral axillary artery aneurysms. The diagnosis was clinically evident and confirmed by CT angiography. The most probable etiology was infectious, and the patient was treated surgically via aneurysm resection and axillo-axillary bypass.

### 2. Case Presentation

Mrs. X, a 61-year-old woman with end-stage chronic kidney disease on hemodialysis through a left radiocephalic AVF, presented with bilateral pulsatile axillary masses evolving over five years. The clinical worsening included increased volume and pain in the left axillary region, without ischemia or rupture ( figure 1)

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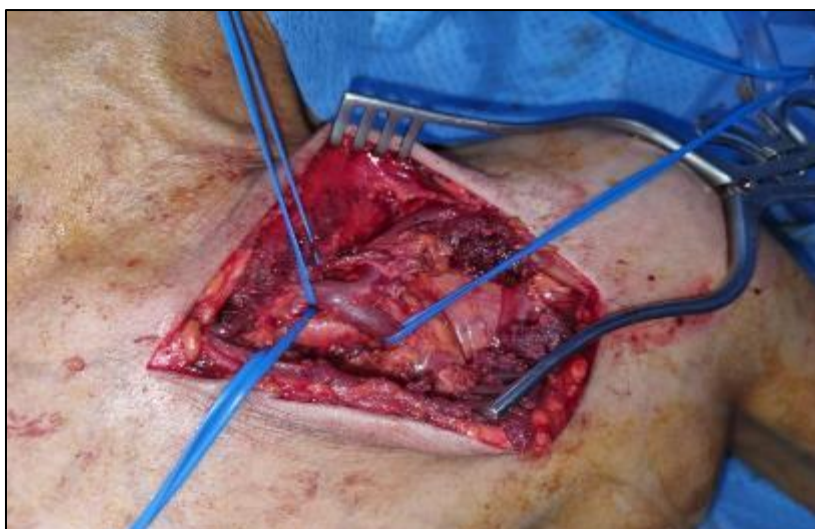
**Figure 1** Clinical aspect

On examination, there were two pulsatile masses in both axillae (Figure 1). Peripheral pulses were preserved. Hemoglobin was 6 g/dL, with leukopenia ( $2,000/\text{mm}^3$ ) and thrombocytopenia ( $75,000/\text{mm}^3$ ). CT angiography revealed true aneurysms of both axillary arteries, measuring 10 cm (left) and 5 cm (right), partially thrombosed, without signs of rupture or thoracic outlet syndrome (Figure 2).



**Figure 2** Bilateral axillary aneurysm, with the largest on the left measuring 10 cm in diameter

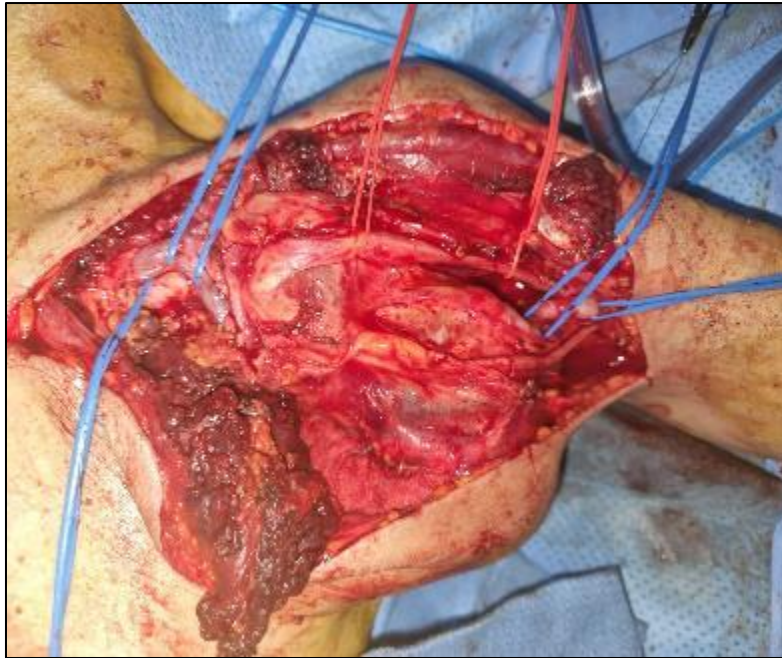
After transfusion with three units of packed red cells and platelets, the patient underwent surgery. The left axillary aneurysm was resected, and an axillo-axillary bypass was performed using a reinforced PTFE prosthesis (Figures 3–6).



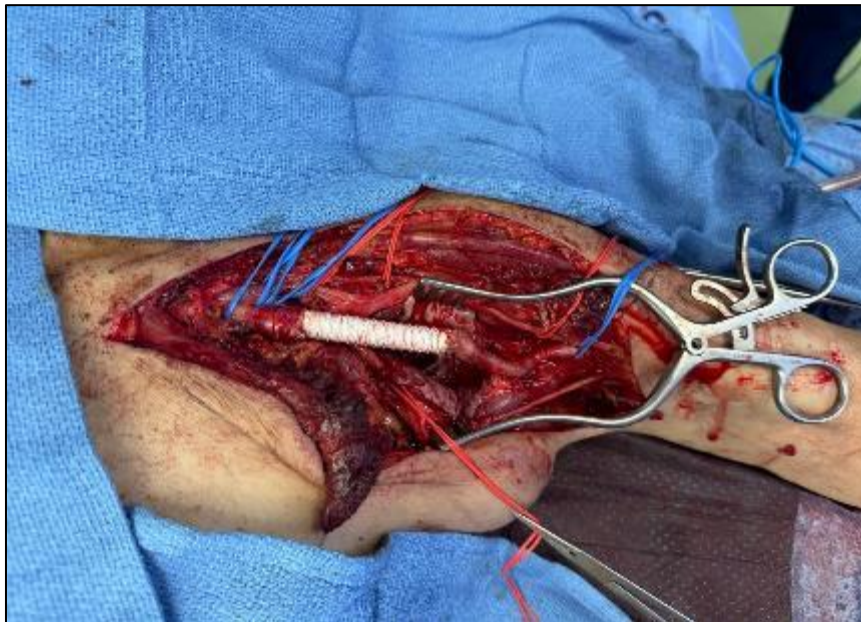
**Figure 3** The axillary subclavian junction dissection and control



**Figure 4** Axillary artery control



**Figure 5** Proximal and distal control of the aneurysm with identification and control of brachial plexus branches



**Figure 6** Aneurysm resection followed by axillo-axillary bypass using PTFE graft

Postoperatively, the limb was warm and all pulses were present. Bacteriological cultures were negative, and histopathology favored an atherosclerotic origin.

### 3. Discussion

Axillary artery aneurysms are the rarest among peripheral arterial aneurysms. Atherosclerosis is a common cause, although connective tissue disorders, thoracic outlet syndrome, and repetitive trauma are also implicated (2).

Clinical presentation can vary from pulsatile or painful masses to ischemia or neurologic symptoms due to nerve compression. Doppler ultrasound can aid diagnosis but may misinterpret pseudoaneurysms. CT angiography remains the gold standard, both for diagnosis and treatment planning (4)



Treatment involves exclusion of the aneurysm and decompression(3) (4). Surgical resection with revascularization via autologous vein graft or prosthetic conduit is the standard. Endovascular repair using covered stents is a viable option, especially in high-risk surgical candidates. However, in cases with large aneurysms and compressive symptoms, open surgery is preferred as endovascular approaches may not relieve mass effect. (5,6)

Postoperative complications may include paresthesia due to the close proximity of the brachial plexus. In our case, neurological examination was normal after surgery. (7)

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#### 4. Conclusion

Axillary artery aneurysms are rare but potentially life- and limb-threatening. They may lead to vascular or neurologic compression, thromboembolic events, or rupture. Surgery remains the primary treatment, with endovascular options considered in selected cases.

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#### Compliance with ethical standards

##### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

##### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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