Journal of Clinical and Medical Images

Case Report

ISSN: 2640-9615 | Volume 7

Large Aneurysm in Contained Rupture on Arteriovenous Fistula: A Case Operated on at the Festoc Center of the Mother Child Hospital «Luxembourg» in Bamako

Diarra BI*, Doumbia M, Keita A, Toure M, Mariko M, Daffe S, Djiguiba K, Diallo B, Traore S, Coulibaly M, Koita S and Yena S

Cardiothoracic and Vascular Surgeon at Festoc Center in Bamako, Mali

***Corresponding author:**

Baba Ibrahima Diarra,
Cardiothoracic and Vascular Surgeon at Festoc Center in Bamako, Mali

Received: 15 May 2023
Accepted: 22 June 2023
Published: 30 June 2023
J Short Name: JCMI

Citation:

Diarra BI, Large Aneurysm in Contained Rupture on Arteriovenous Fistula: A Case Operated on at the Festoc Center of the Mother Child Hospital «Luxembourg» in Bamako. J Clin Med Img. 2023; V7(2): 1-3

Keywords:

Faux anevrisme; Fistula; Centre festoc; Bamakomots

1. Summary

An aneurysm is defined as a permanent localized dilatation of an artery with an increase of at least 50% in diameter compared with the expected normal diameter [12].

The association of a pseudoaneurysm with an arteriovenous fistula is rare [1-4]. However, in our developing country context, complications of arteriovenous fistulas are not uncommon, due to the proliferation of dialysis centers and the lack of experience in handling them. In this case, a 67-year-old patient known to be hypertensive and followed in the nephrology department for 05 years for renal insufficiency due to angioclerosis on arterial hypertension, and dialyzed for 03 years at a rate of 03 sessions per week in a local dialysis center, was referred to us for the management of a large swelling of the left forearm. The patient reported that the swelling had been evolving for about 1 year, had increased in volume over the past 1 month and was becoming increasingly painful. On admission, she presented with a large mass on her left forearm. It consisted of 3 swellings, the largest measuring around 8 cm. The swellings were throbbing and expansive, and a very intense systolic murmur was noted on auscultation, indicating that the fistula was functional. They were very painful to palpate, and the skin was taut and shiny.

We therefore performed a cure by flattening and closing the necks.

The approach was based on a check upstream and downstream of the swellings. We then made an arciform incision taking the 03 swellings before carefully dissecting them. Opening them allowed us to evacuate numerous clots and reveal the three necks, which ranged from 1 cm to 3 cm. The 3 necks were closed with a 5/0 prolene overjet and ligation of the arteriovenous fistula. Closure was followed by drainage. Progress was favorable.

2. Introduction

An aneurysm is defined as a permanent localized dilatation of an artery with an increase in diameter of at least 50% over the expected normal diameter [12].

The association of a pseudoaneurysm with an arteriovenous fistula is rare [1-4]. However, in our context of developing countries, complications of arteriovenous fistulas are not uncommon, due to the proliferation of dialysis centers and the lack of experience in handling them. The appearance of a pseudoaneurysm or arteriovenous fistula represents a major functional risk for the limb, requiring early diagnosis and management [1-4].

We report the case of a 67-year-old female patient who developed a large aneurysm in the path of her arteriovenous fistula after 3 years of use.

3. Observation

This 67-year-old patient, known to be hypertensive and followed in the nephrology department for 05 years for renal failure due to angioclerosis on arterial hypertension, had been dialyzed for 03 years at a rate of 03 sessions per week in a local dialysis center. She was referred to us for the management of a large swelling of the left forearm. The patient reported that the swelling had been evolving for about 1 year, had increased in volume over the past 1 month and was becoming increasingly painful.

On admission, she presented with a large mass in the left forearm. It consisted of 3 swellings, the largest measuring around 8 cm. The swellings were throbbing and expansive, and a very intense systolic murmur was noted on auscultation, indicating that the fistula was functional. They were very painful to palpate, and the skin was taut and shiny.

Finger sensitivity and motricity were preserved, and there were no signs of ischemia. Biological tests were normal.

In this patient, we performed a cure by flattening and closing the necks. The approach was based on a check upstream and downstream of the swellings. We then made an arciform incision taking the 03 swellings before carefully dissecting them. Opening them allowed us to evacuate numerous clots and reveal the three necks, which ranged from 1 cm to 3 cm. The 3 necks were closed with a 5/0 prolene overjet and ligation of the arteriovenous fistula. Closure was followed by drainage.

Progress was favorable. The patient continued her dialysis sessions with a femoral catheter. Another fistula was planned for the other limb, once the false aneurysm had been cured.

Figure 1: Voluminous, tortuous aneurysm in the path of the arteriovenous fistula

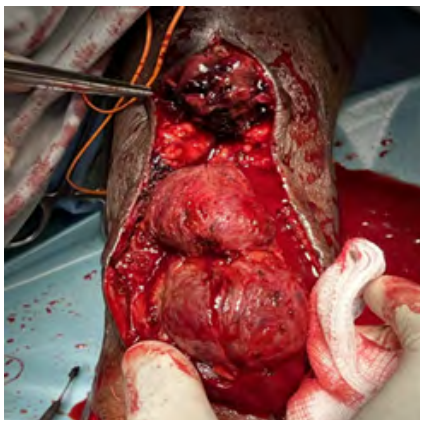

Figure 2: Aneurysm control and dissection

Figure 3: Post-cure skin closure

4. Discussion

Aneurysms arising in the upper extremities can be classified into two broad categories categories: false aneurysms and true aneurysms. False aneurysms are also known as pseudoaneurysms. They may arise after traumatic penetration of the vessel, resulting in hemorrhage and extravasation. The hematoma that forms leads to fibrosis and recanalization of the soft tissue. The false vessels thus formed resemble true vessels, but are characterized by a coating of endothelial cells. Unlike the sac-like shape of true aneurysms, pseudoaneurysms have a uniform shape and form easily at the site of repetitive trauma, such as puncture sites in our case [13].

Complications of arteriovenous fistulas require rapid diagnosis and management to prevent and avoid complications including rupture, infection, heart failure or limb ischemia [3, 6, 7]. Masses in the path of an arteriovenous fistula should raise the suspicion of a pseudoaneurysm. Diagnosis is fairly straightforward, with the presence of a pulsatile mass, palpable thrill and distension of the superficial veins [1-4]. In Bakran A and Mickley's [11] study of aneurysms on AVF, they referred to segments of dilated vein whose diameter exceeded 1.5 to 2 times the diameter of the adjacent vein [10]. Several types of aneurysm can develop, either on the arterial, anastomotic side, or along the drainage tract. The frequency of aneurysms on AVFs reported in the literature has been 0% [11].

In advanced forms, arteriovenous fistulas result in significant vascular volume, leading to limb ischemia, which is potentiated by the compressive effect of the pseudoaneurysm [1-4]. However, it should not delay treatment [8]. If the false aneurysm is small, it can be treated by ultrasound-guided compression; otherwise, treatment consists of flattening the false aneurysm, with or without venous bypass [2-7-9]. In our case, flattening was combined with closure of the various collars. From a technical point of view, it is important to insist on primary vascular control to avoid fatal hemorrhage in the event of early rupture of the false aneurysm [9]. Endo-vascular treatment can be proposed with the placement of a covered stent that excludes the false aneurysm and fistula. This has been proposed for popliteal artery lesions [4]. In theory, placement of a covered stent has the advantage of reducing morbidity and mortality, and shortening hospital stays.

5. Conclusion

False aneurysms on arteriovenous fistulas are fairly common in our developing country. This is due to the proliferation of dialysis centers and the limited availability of skilled human resources, which necessitates ongoing training of nursing staff. This implies good coordination between the surgeon, the nephrologist, the nurses and the patient. Endovasvular stenting could also have a place in our country, but at the cost of consumables.

References

1. Grace Carvajal Mulatti. Traumatic Arteriovenous Fistula. In: André Brito Queiroz, editor.Arteriovenous Fistulas [Internet]. Rijeka: Intech Open. 2013; 10.
2. Daniel HE, Firmin A, Angele PO, Esthelle MN,Freddy B, Bernadette NN. Giant PseudoaneurysmAssociated with Arteriovenous Fistula of the Brachial and Femoral Arteries following Gunshot Wounds:Report of Two Cases. Case Rep Vasc Med. 2015; 2015: 454713.
3. Loughlin V, Beniwal JS. Post-traumatic brachial artery aneurysm and arteriovenous fistulae. J Cardiovasc Surg (Torino). 1988; 29(5): 570-1.
4. Zizi O, Naouli H, Jiber H, Bouarhroum A. Fistuleartérioveineuse poplitée post-traumatique associée à un faux anévrysme. JMV-J Médecine Vasc. 2017; 42(1): 46-9.
5. Bahebeck J, Atangana R, Mboudou E, Nonga BN, Sosso M, Malonga E. Incidence, case-fatality rate and clinical pattern of firearm injuries in two cities where arm owning is forbidden. Injury. 2005; 36(6): 714-7.
6. Aduful H, Hodasi W. Peripheral vascular injuries and their management in Accra. Ghana Med J. 2007; 41(4): 186-9.
7. Raherinantenaina F, Rakotorahalahy RAL, Andrianandraina MCG, Rakoto Ratsimba HN, Rajaonanahary TMA. Prise en charge des fauxanévrysmes artériels traumatiques et iatrogènes enmilieu tropical. JMV-J Médecine Vasc. 2017; 42(6): 338-48.
8. Schwartz M, Weaver F, Yellin A, Ralls P. Theutility of color flow Doppler examination in penetrating extremity arterial trauma. Am Surg. 1993; 59(6): 375-8.
9. Melek Ben Mrad, Nizar Elleuch. Faux anévrysmede l'artère humérale suite à plaie par arme à feu. PanAfr Med J. 2015; 22: 212
10. Turmel-Rodrigues L, Raynaud A, Louail B, Beyssen B, SapovalM. Manual catheter-directed aspiration and otherthrombectomy techniques for declotting native? stulas forhemodialysis. J Vasc Interv Radiol. 2001; 12(12): 1365-71.
11. Bakran A, Mickley V, Passlick-Deetjen J. Management of therenal patient: Clinical Algorithms on vascular access fohaemodialysis. Lengerich: Pabst Science Publishers. 2003; P85-86.
12. Jack L, Cronenwett KWJ. Cronenwett: Chirurgie vasculaire de Rutherford. 7ème édition. Saunders: Elsevier; 2010.
13. Hudorovic N, Lovricevic I, Franjic DB, Brkic P, Tomas D. Anévrisme vrai de l'artère brachiale. Wien Klin Wochenschr. 2010; 122: 588-91.