

Post-EVAR aneurysm sac enlargement: When conventional screening tests fail, laparotomy remains the key to findings

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Abstract:

A 69-year-old man underwent standard EVAR for a symptomatic abdominal aortic aneurysm (maximum diameter 10.5cm). The patient presented four years later with an enormous abdominal mass and back pain. Computed tomography angiography (CTA) revealed an abdominal aortic aneurysm (max diam. 15cm) with no signs of endoleak or rupture. We decided to proceed to urgent laparotomy. Intraoperative findings were two sites of active bleeding (endoleak type IIIb) and absence of type I/II endoleak. We sutured the graft defect and enhance it with Dacron patch. Postoperative course was uneventful, and the patient remains in good health six months postoperatively.

CASE

A 69-year-old man underwent EVAR using endograft with suprarenal fixation (Endurant, Medtronic) for a symptomatic abdominal aortic aneurysm (maximum diameter 10.5cm). Four years later, the patient presented with an enormous abdominal mass and back pain. Duplex scan revealed an AAA of ~15cm and no signs of endoleak or rupture. Computed tomography angiography (CTA) revealed the AAA (max diam. 15cm) with no component disconnection or endoleak/rupture. (fig.1) Owing to the enormous dimensions of the aneurysm and its symptomatic character, we decided to proceed to urgent laparotomy. (fig.2) After the incision of aneurysm sac and the removal of excessive amount of thrombus, two sites of active bleeding were identified (one in the internal surface of right iliac limb and one in the anterior surface of left iliac limb).(fig.3) No type I/II endoleak was identified intraoperatively. We decided to suture the graft defect and enhance it with Dacron patch. (Fig.3) Postoperative course was uneventful, and the patient remains in good health three months postoperatively.

TECHNICAL NOTES - DISCUSSION

In this case, bleeding may be attributed to manufacturer fault, to tearing of the fabric due to stent graft fatigue or to porosity. According recent recommendations, identification of fabric

hole after the first 30 days post-operation should be considered as type IIIb endoleak and be treated promptly. Type III endoleak expose the aneurysm to direct aortic pressure with a subsequent risk of rupture. Moreover, some suggest that type IIIb endoleak can be misdiagnosed with type IV or type II endoleaks. Long-term follow-up after EVAR is mandatory and in cases where there is a significant aneurysm sac expansion or the patient becomes symptomatic intervention is indicated.

From our experience, it seems that conventional screening tests (CTA and duplex scan) may fail to diagnose the endoleak. Type IIIb endoleak should be highly suspected in cases with continuous growth of an excluded aneurysm sac without direct radiologic evidence of endoleak. Other diagnostic methods such as contrast enhanced ultrasound or digital subtraction angiography may be utilized but it is uncertain whether their findings are definitive for the diagnosis. In case of aortography one should try to do bilateral balloon occlusion of the proximal limbs. The reason we didn't perform DSA or intraoperative angiography was because we were determined to evacuate that 15cm mass.

Management options at the time of the presentation included endovascular procedure with relining of the endograft or conversion to open procedure with possible explantation of the endograft. In case of conversion, the vascular surgeon should always ensure proximal control of the aorta so in case of endograft dislocation he will be able to clamp the aorta immediately and avoid hemorrhage.

According type IIIb endoleaks, there are two recent systematic reviews available in the literature with comparable results. [1,2] In one third of the cases the definite therapy was performed by conversion. Moreover, the main body seems to be the most common location for the holes and the in majority of cases, endograft's fabric was polyester.

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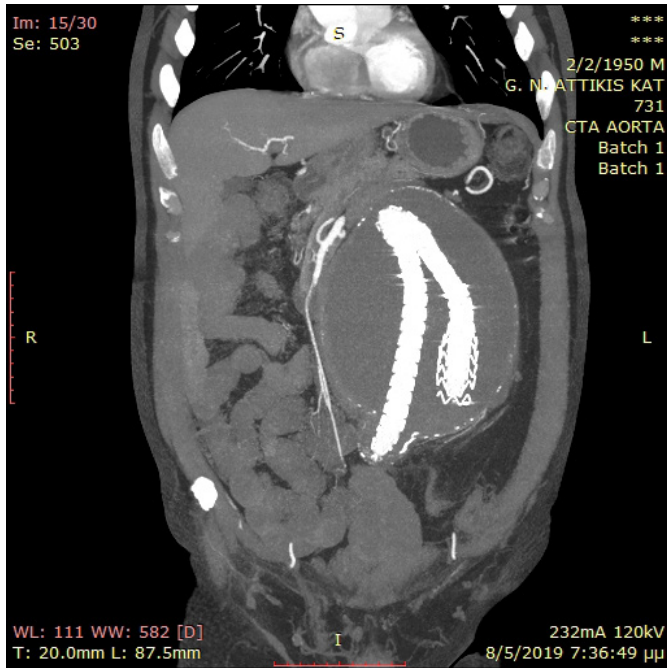


Figure 1



Figure 2

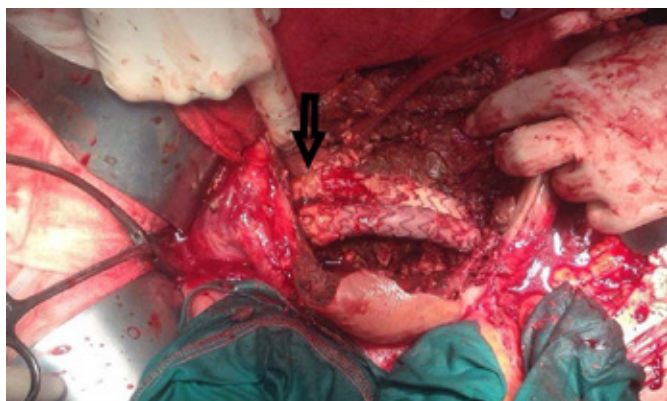


Figure 3

CTA revealed an expansion of the abdominal aortic aneurysm without recognizing any endoleak. No limb disconnection and no signs of rupture were noted either.

Note the enormous abdominal mass.

Intraoperative findings included two sides of bleeding. We suture the holes and enhanced it with Dacron patch.

CONCLUSION

It is - once more - proved that long-term follow-up is mandatory in patients treated with EVAR. Diagnosis of type IIIb is a difficult task and misdiagnose is possible. We need further studies to identify if there is difference in the incidence of type IIIb endoleak among dacron and ePTFE endografts. Surgeons should remember that when there is a mysterious post-EVAR aneurysm sac enlargement, exploratory laparotomy remains the key to findings.

Acknowledgment:

1. Informed consent has been obtained from the patient before publishing.
2. This case report was also presented at 2nd Athens Cardiovascular & Thoracic Symposium which was held in Athens (Greece) 7-9 November 2019.3

No conflict of interest.

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