

MASSIVE LATE ENDOLEAK TYPE IA, ASSOCIATED WITH SHOCK AND ACUTE ANEMIA: CONSERVATIVE SURGICAL TREATMENT

ABSTRACT

We present a case of type 1 endoleaks associated with massive hemorrhage and shock, treated with traditional open surgery. We present a 74-year-old male patient with a history of endovascular repair of abdominal aortic aneurysm 6 years ago, was admitted to the emergency department in shock and acute anemia, showing a type IA endoleak associated with retroperitoneal hematoma. Open repair was performed with the interposition of a Dacron™ prosthesis with preservation of the aortic endoprosthesis. Although in these cases of extreme urgency, it has been proposed the extraction of the endoprosthesis, which involves a procedure associated with high mortality, in this case, it was feasible a simple repair as was the interposition of prosthesis between proximal aorta and endoprosthesis. Endovascular repair of aortic aneurysm requires strict monitoring and a good selection of patients for this procedure since this late complication has a high mortality rate.

Keywords: endoprosthesis, endoleak, abdominal aortic aneurysm.

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INTRODUCTION

Abdominal aortic aneurysm represents a major problem due to the risk of rupture. Until 1991, the treatment was traditional open surgery, with high morbidity and mortality rates, especially in the case of rupture¹. Even some patients who met the criteria for this procedure presented a high risk of complications, which precluded surgery. In that year, the era of endovascular therapy began, with stents to exclude the aneurysm, achieve sac thrombosis, and, later, reduce the sac size and the risk of rupture². Endovascular aneurysm repair (EVAR) is less invasive than traditional surgery; in addition, it has lower mortality and shorter hospital stay, is associated with a shorter intensive care unit (ICU) stay, shorter surgery time, and, above all, is accessible to patients who are at high risk for traditional open surgery³.

This technique, however, is not free of serious complications, which occur in 16 to 36% of cases. For this reason, several reinterventions are performed during patient follow-up to reduce the size of the aneurysm and the risk of rupture, which can reach up to 19%⁴.

With this new technique, endoleaks arise that repressurize the aneurysm in the long term, leading to its rupture, so it is recommended to follow up strictly and lifelong through different modalities of imaging studies.

We present a clinical case of late-type I A endoleak associated with shock and acute anemia that required traditional open surgery to resolve this severe complication.

CLINICAL CASE

A 74-year-old male patient with a history of EVAR in 2017, arterial hypertension, obstructive pulmonary disease, and cessation of smoking. In May 2023, he

went to the polyclinic of the sector for presenting hypotension and lipotimia. He was immediately referred to our emergency department, where he arrived with hypotension and unconscious, vasoactive drugs and a massive blood transfusion were administered. An angiotomography showed a large aneurysm with contrast leakage into the sac, associated with retroperitoneal hematoma, reported as endoleak type I A (*Figure 1*). No elements were available to treat this endoleak endovascularly, and given the extreme severity of the clinical picture, it was decided to take him to the surgical ward. A laparotomy was performed, and a retroperitoneal hematoma was found with active bleeding and an intact aneurysm with no reduction in size.

To stop the bleeding, the suprarenal aorta was clamped. Once the bleeding was controlled, the aneurysm sac was opened, and a wide space was found between the aorta and the stent, attached to the proximal aorta only with the hooks of the free-flow device. The distal aorta was prepared, and a useful area was left flush with the renal arteries. The endoleak was repaired by the interposition of a 16 mm Dacron™ prosthesis joining the normal wall aorta after the removal of the wires of the free-flow device and the endoprosthesis. The sac and retroperitoneum were closed in two planes (*Figure 2*).

RESULT

The patient is maintained on vasoactive drugs and a massive transfusion protocol, both in the operating room and in the ICU. During the hospital stay, a right renal infarction was confirmed; the left kidney had normal circulation. However, dialysis was required to improve conditions. Another complication was pneumonia associated with mechanical ventilation that required broad-spectrum and second-line antibiotics. During

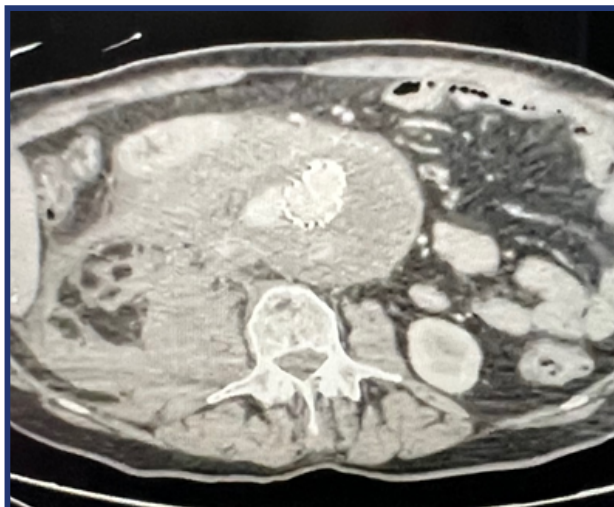


FIGURE 1. Angiotomography shows a type 1A endoleak with aneurysm reproduction associated with a retroperitoneal hematoma.

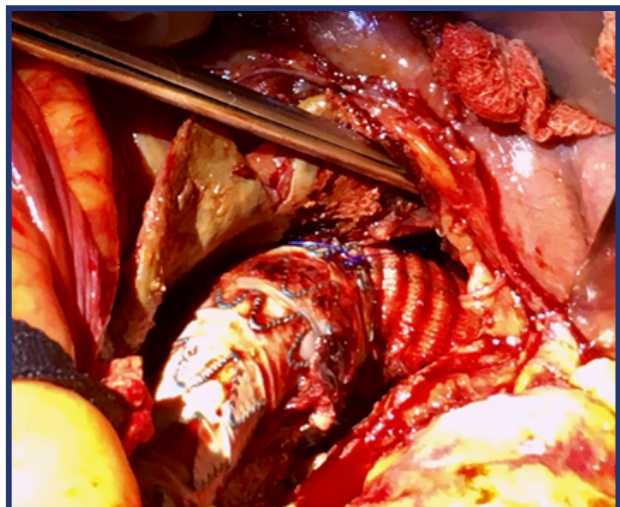


FIGURE 2. Interposition of Dacron™ prosthesis between the proximal aorta and the aortic endoprosthesis, with the release of the aorta from the wires of the free flow device.

follow-up, the original aneurysm presented thrombosis and no endoleaks (Figure 3). However, the patient died due to a hiatal hernia with the entire stomach in the chest associated with aspiration pneumonia, it was almost impossible to resolve the possibility of enteral feeding and hiatal hernia, which prevented this type of feeding (Figure 4).

DISCUSSION

Although EVAR is a widely accepted technique for the repair of infrarenal aneurysms, endoleaks are a very frequent complication affecting 15-52% of all patients in whom it was used. Type 1A is infrequent (1-3%) but is associated with a high risk of expansion and rupture of the aneurysmal sac. There are several endovascular options for its solution, including the use of Palmaz stent XL™ and the use of Heli-Fx system R™ (Aptus, Medtronic)⁵, and the possibility of adding a fenestrated stent. If the latter fails, the only option is open surgery, with removal of the stent and reconstruction of the original type with a bifurcated prosthesis, which is associated with high morbidity and mortality⁶. It is important to mention

that these endovascular techniques are not universally accepted recommendations.

In our case, the elements could not solve the endoleak endovascularly. In addition to the patient's shock, we were forced to repair it using an open technique, with good results, such as the interposition of Dacron™ between the proximal aorta and the endoprosthesis. This is a simple and safe technique we have not seen in other publications. As a complication, and due to the proximity of the renal arteries, one of the circulations of the kidney was compromised. In the literature, we have not found this severe acute complication associated with hemodynamic compromise and acute anemia, so we should resolve the situation with traditional surgery and, at the same time, conclude that EVAR requires lifelong imaging surveillance to avoid this severe complication.

Declarations

The authors declare no conflict of interest.

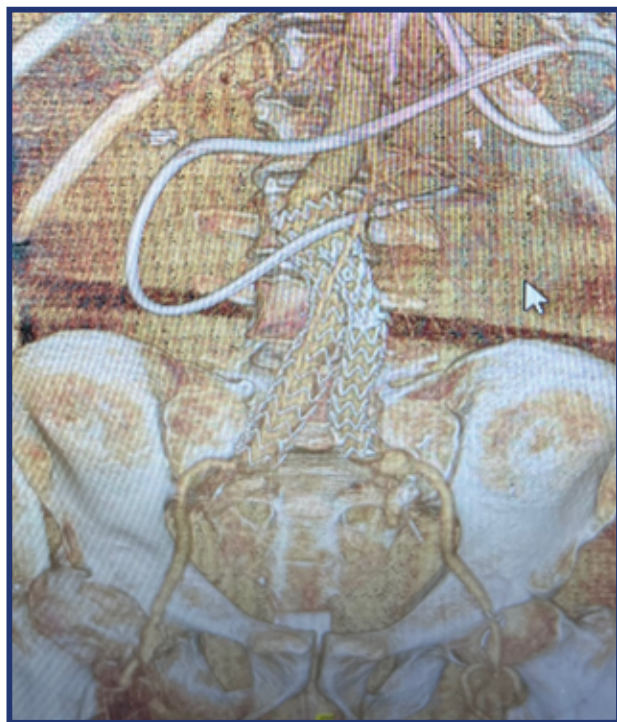


FIGURE 3. Repair control of a type 1A endoleak.

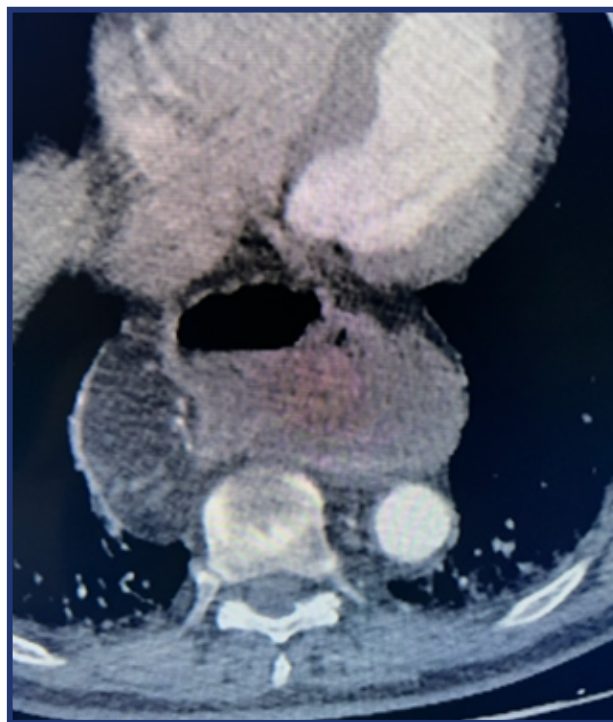


FIGURE 4. Large hiatal hernia with displacement of the stomach into the thorax.

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