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## Total Abdominal Aortic Stent Graft Occlusion

### Abstract

We report a case involving an acute chronic endovascular abdominal aortic stent graft occlusion in which percutaneous angioplasty was performed via bilateral trans femoral approach. This case emphasized that endograft occlusion treatment after endovascular aortic aneurysm repair (EVAR) is feasible.

**Keywords:** Endovascular aneurysm repair; Abdominal aortic aneurysm; Endograft; Thrombosis

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### Introduction

The endovascular treatment of abdominal aortic aneurysm when compared to conventional treatment is less invasive and presenting lower morbidity, mortality, especially in patients with high anesthetic-surgical risk [1-3]. Among the complications described in the medium and long term after the treatment are the thromboembolic events associated with the stent graft occlusion, generally graft limb occlusion [3,4]. Furthermore, follow-up after surgery is necessary to decrease the risk of death or associated comorbidities [3]. We present a case of total occlusion of the endograft after long-term aortic aneurysm repair.

### Case Report

A 59-year-old female patient smoker and with systemic hypertension was admitted in the emergency room with pain and paraesthesia in both legs, absence of pulses in the lower limbs, with a history of aortic aneurysm repair of the abdominal aorta by endovascular technique in 2009 with another team. In the suspicion of aorto-iliac occlusion we requested a computerized angio tomography and it was identified an aortic stent graft occlusion. We performed arteriography trans bilateral femoral access (**Figure 1**) and after mechanical thrombectomy with Rotarex® and pharmacological thrombolysis with actilyse, 30 mcg, all long the procedure, diluted, during three hours with catheter-directed thrombolysis followed by prolonged balloon inflation (**Figure 2**), the final arteriography revealed a better final image but not as we would wish (**Figure 3**). The patient was taken to the ICU and was discharged on the fourth postoperative day. Since then, she maintains clinical follow-up with improvement of

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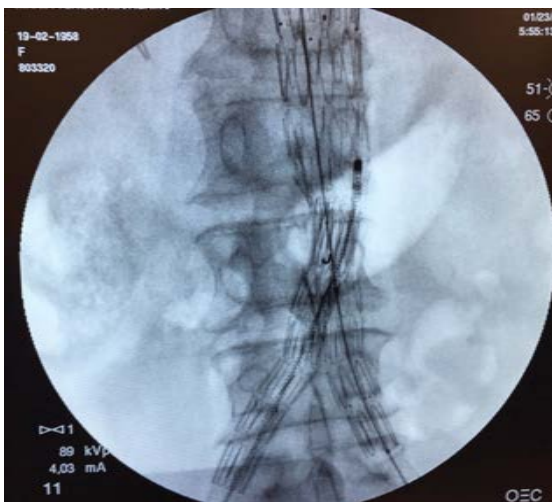
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paraesthesia, pain relief and presence of pulses in lower limbs and claudication for half distances. Angio TC control results (**Figures 4-6**) shows partial recanalization of Aortoiliac segment. Although with clinical improving since than indication of intervention, in our opinion, neither the patient nor the family wants to perform another interventional procedure.



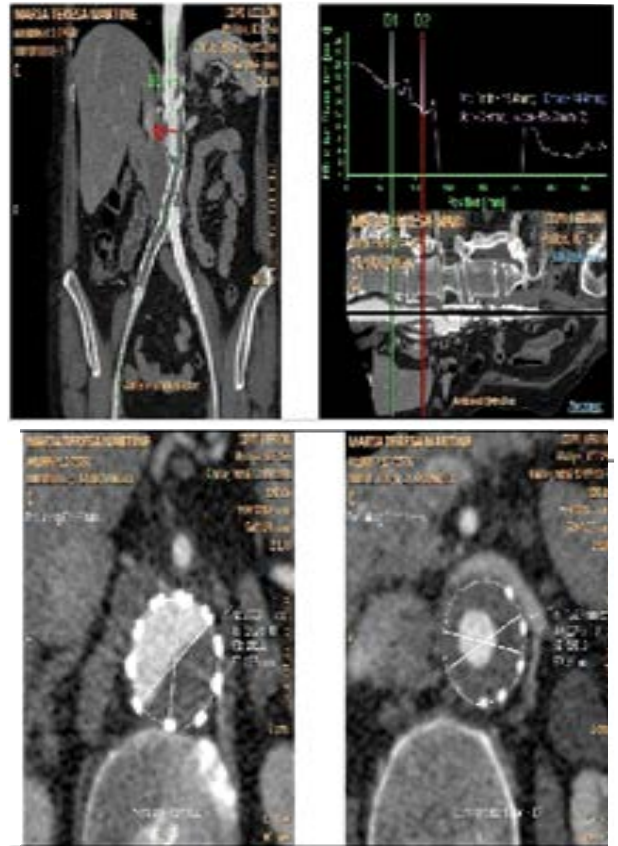
**Figure 1** Arteriography Trans bilateral femoral access.



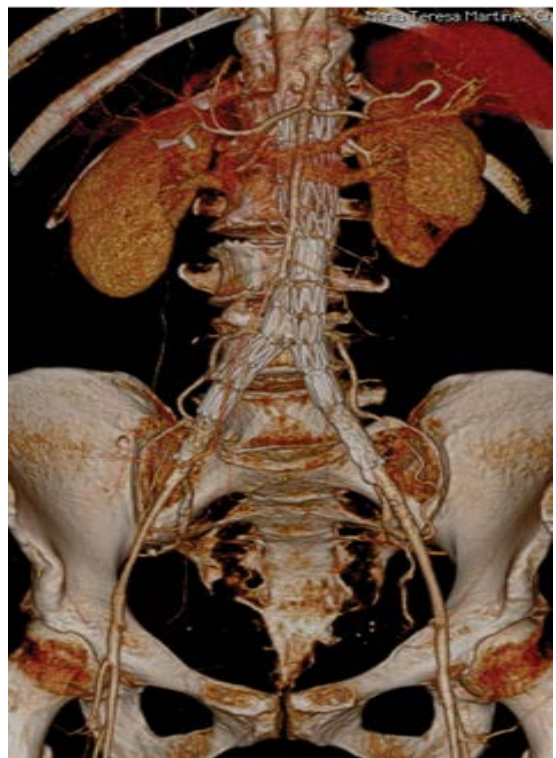
**Figure 2** From the left to the right- (2) Mechanical thrombectomy with Rotarex® and pharmacological thrombolysis with actilyse and catheter-directed thrombolysis.



**Figure 3** Control arteriography showing our final result during the procedure.



**Figure 4** CT controls.



**Figure 5** CT controls.

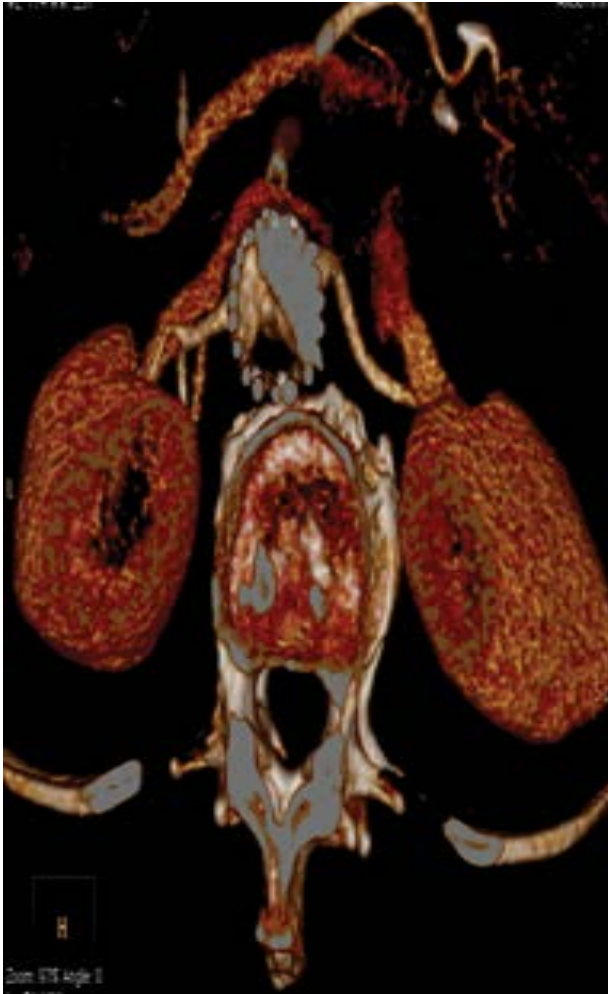


Figure 6 CT controls.

## Discussion

Long-term surveillance indicates that approximately 20% of patients require additional procedures, most of by endovascular procedures [5-7]. Limb thrombosis after EVAR is a complication in which the incidence rates have been reported to be 2% to 25%

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[3-8]. Placement of a large limb in a shorter vessel, kinking [3] or the presence of angulation or calcifications of the iliac arteries appear to be predictors of endograft limb occlusion after EVAR [6]. And didn't find statistical significance for occlusion rate between different endograft [5]. The mechanism of late limb occlusion should be related to migration or dislocation of an endograft and eventual endograft occlusion [5,9]. Mehta et al. reported that 7.4% of patients developed stent graft limb thrombosis, in 1768 cases, during a mean follow-up of 34 months [7]. Thrombosis in aortic Endoprosthesis seems to be a multifactorial process, especially local hemodynamic factors, which lead to a disturbance of the endothelial function, with repercussion on cell adhesiveness and increased viscosity. The increase blood viscosity in turn modifies the shear stress on the of the endograft wall, favoring formation of thrombus, however, the pathophysiology of these events has not yet been fully elucidated. Such findings are consistent with the case of the patient reported, since there was a history of significant smoking burden and irregular use of antiplatelet agents. In this way, the endovascular technique has established its bases, proving to be feasible and effective for the treatment of surgical vascular diseases, capable of offering safety and comfort with a minimally invasive approach, which is fundamentally important for patients with comorbidities and high surgical risk, however we need more randomized controlled trials to evaluate percutaneous angioplasty to treat an occluded endograft, if is a well-accepted tool. Endograft limb occlusion may be related to reduce outflow. Occlusion of the internal iliac artery or unrecognized distal dissection may increase the risk of limb thrombosis [10,11]. Acute endograft limb occlusion is manifested with claudication rather than with critical ischemia, provided the limb has been deployed proximal to the internal iliac artery, which facilitates collateral perfusion to the lower extremity.

## Conclusion

In this way, endovascular procedures has established its bases, proving to be feasible and effective for the treatment of aortic endoprosthesis occlusion, capable of offering safety and comfort with a minimally invasive approach, even as the treatment of its complications, which is fundamentally important for patients with critical comorbidities and high surgical risk.

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