

Anaconda™ AAA Stent Graft System for Infrarenal Neck Angulations Up to 90°

A clinical case report demonstrating endovascular aneurysm repair in an elderly patient with hostile neck anatomy.

BY ANTONIO GIMÉNEZ-GAIBAR, MD; ELENA GONZÁLEZ-CAÑAS, MD; TERESA SOLANICH-VALLDAURA, MD; AND CAROLINA HERRANZ-PINILLA, MD

In 2013, approximately 75% of patients with abdominal aortic aneurysms (AAAs) were treated with endovascular aneurysm repair (EVAR) in the United States, but the potential advantages of this less-invasive approach are limited by the anatomical morphology of the aneurysm.¹ Approximately 20% of patients with AAAs have hostile neck anatomy that is inadequate for current stent grafts,² and some studies report that non favourable neck anatomy may result in exclusion from EVAR for approximately 60% of patients.³

CLINICAL CASE REPORT

An 84 year old woman without toxic habits but with a history of hypertension, asthmatic bronchitis, hiatal hernia, and cholelithiasis had undergone surgery for varicose veins and cataracts. Abdominal CT performed at another centre 6 months earlier showed a AAA with a diameter of 5.5 cm, but due to the patient's age, a conservative approach was adopted.

The patient presented to the emergency department with pain in the upper abdominal area, without nausea or vomiting. CTA revealed a AAA that was 6.6 cm in diameter, no mural thrombus, hostile neck with a 90° angle, 27 mm right common iliac artery aneurysm, and 15 mm left common iliac artery (Figure 1). Given the patient's clinical situation and rapid enlargement of the aneurysm, she was referred to our centre to assess the possibility of endovascular treatment of the aortic aneurysm.

The Anaconda™ AAA Stent Graft System (Vascutek Ltd.) with a bifurcated configuration was used for endovascular repair. First, embolisation of the right hypogastric artery was performed using an occlusion device (Amplatzer, St. Jude Medical, Inc.). The main body of the stent graft was placed in the infrarenal position, and the diameter used was 25 mm. A 19 mm

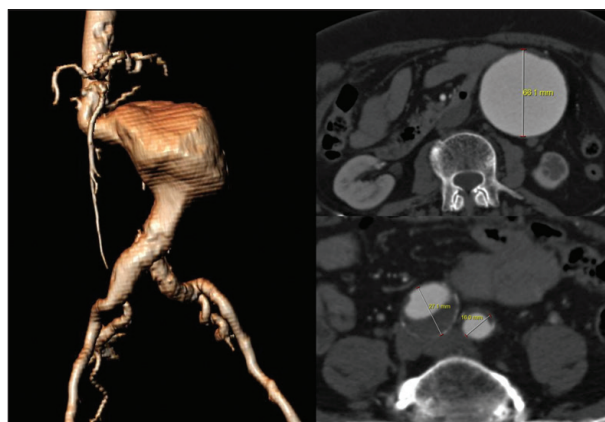


Figure 1. Pre-operative CTA.

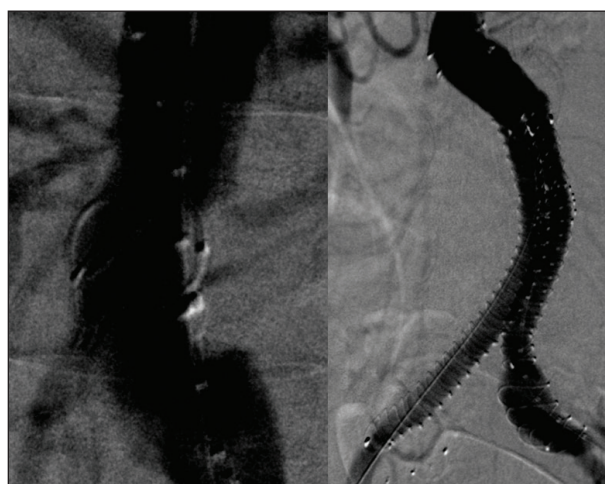


Figure 2. Intra-operative angiogram.

left iliac extension was implanted in the common iliac artery, and subsequently, an endograft extension was placed in the right external iliac artery. Intra-operative angiography revealed the patency of the endoprosthes-

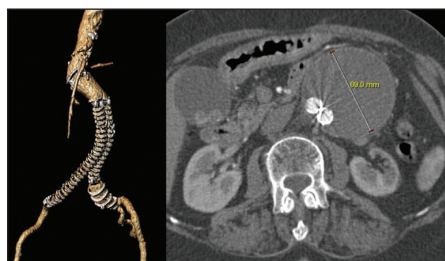


Figure 3. CTA at 1 month.

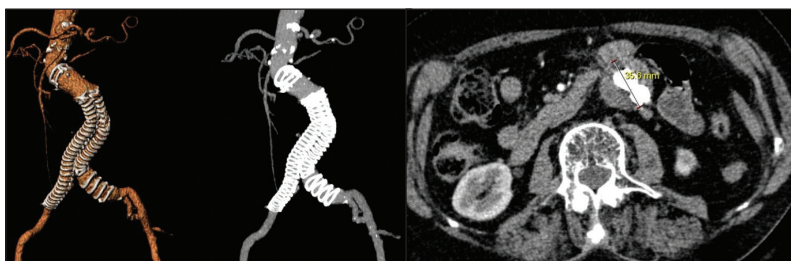


Figure 4. CTA at 5 years.

sis and visceral vessels, without endoleaks (Figure 2). Post-operative evolution was uneventful with remission of pain, and the patient was discharged after 72 hours. Follow-up CTA performed at 30 days (Figure 3), 12 months, and yearly thereafter has not shown any abnormalities, endoleaks, or migration, with a reduction in the diameter of the aneurysm sac to 38 mm at 5 years (Figure 4).

EVAR IN HOSTILE NECKS

Numerous authors have reported poor results with hostile AAA neck anatomy, but these often include a variety of grafts, techniques, and patient selection. A study by the EUROSTAR collaborators⁴ revealed that the group of patients with the most severe neck angulation had the worst early and late results, but this was also the least healthy group of patients. On the other hand, Dillavou et al⁵ considered that with careful selection, many patients with classic hostile necks may be successfully treated using an unsupported unibody endograft with active proximal fixation. In a meta-analysis of the literature, Antoniou et al⁶ concluded that EVAR could be used in patients with unfavourable neck anatomy, but suggested that this approach should only be applied in patients at high surgical risk in whom all other alternative treatments are not feasible.

CONCLUSION

In cases with severely angulated proximal necks, adequate apposition between the stent graft and the native aortic neck wall is essential to maintain a circumferential seal and to reduce the risk of endoleak and distal migration. The features of Anaconda™ AAA Stent Graft System include the lack of suprarenal stent, full repositionability, and dual proximal ring stents with hooks. These are qualities to take into account when selecting an endoprosthesis for treating AAAs with angulated necks. ■

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Antonio Giménez-Gaibar, MD

Department of Vascular Surgery
Hospital Universitario Parc Tauli
Sabadell, Spain
agimenezg@tauli.cat

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Elena González-Cañas, MD

Department of Vascular Surgery
Hospital Universitario Parc Tauli
Sabadell, Spain
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Teresa Solanich-Valldaura, MD

Department of Vascular Surgery
Hospital Universitario Parc Tauli
Sabadell, Spain
Disclosures: None.

Carolina Herranz-Pinilla, MD

Department of Vascular Surgery
Hospital Universitario Parc Tauli
Sabadell, Spain
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