

EVAR using an ultra-low-profile bifurcated device is feasible with a very narrow distal aortic neck: a case study

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BACKGROUND:

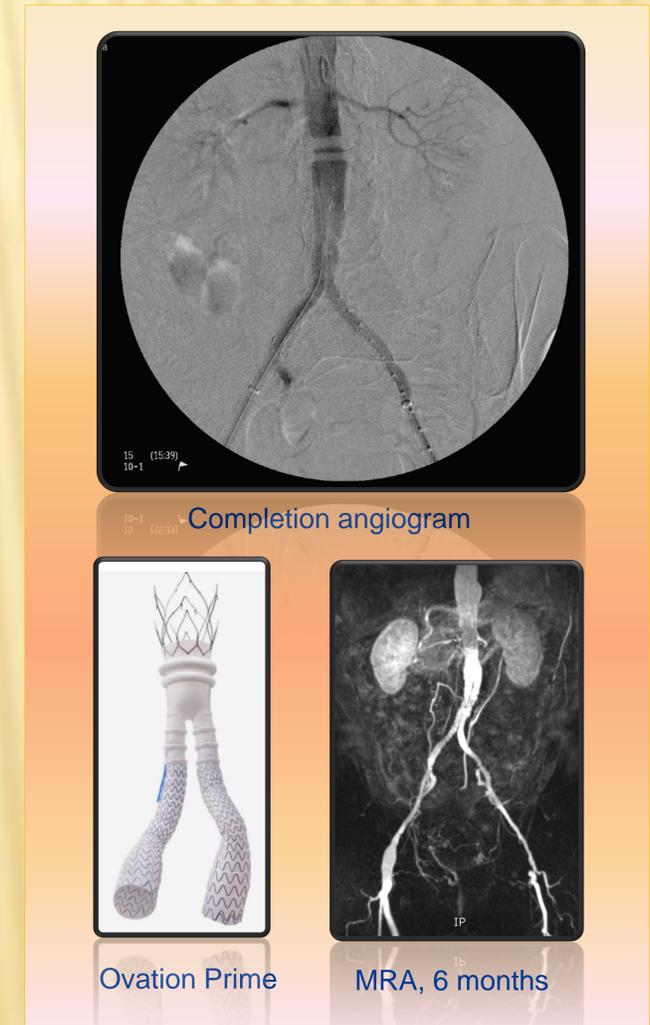
A number of patients are not eligible for endovascular aneurysm repair (EVAR) of abdominal aortic aneurysms (AAAs) due to anatomical constraints. We present a case study challenged by hostile iliac anatomy, a significantly narrow *distal* aortic neck and narrow AAA lumen.

METHODS:

1. A 65-year-old man with significant co-morbidities presented with a 5.5cm infra-renal AAA.
2. Planning issues:
 - a. narrow external iliac arteries (<5mm)
 - b. Bilateral external iliac stents
 - c. **tight distal aorta measuring 11.5mm** in maximum diameter precluded EVAR using a standard bifurcated device.
 - d. functioning right-sided femoropopliteal bypass,
 - e. it was decided to avoid AUI-EVAR with femorofemoral crossover (FFXO).
 - f. the ultra-low-profile (ULP) **Ovation Prime** (TriVascular Inc., Santa Rosa, USA) bifurcated endograft system was selected [1,2].

RESULT:

1. Bilateral percutaneous femoral access
2. Endograft body implanted from the right:
 - a. contralateral limb buckled within the narrow AAA lumen
 - b. contralateral cannulation therefore completed via a percutaneous left brachiofemoral pullthrough wire
3. Iliac limbs synchronously ballooned with 'kissing balloon' angioplasty particularly at the distal aortic neck and aortic bifurcation
4. Femoral arterial closure achieved using Angio-Seal VIP (St Jude Medical, Minnesota, US) vascular closure devices via a double-wire 'post-close' approach [3].
5. Length of stay was 2 days
 - a. no post-operative complications
 - b. bilaterally patent iliac limbs at 12-month follow-up
 - c. He has since also had a left-sided femoropopliteal bypass
6. Luminal details
 - a. Distal aorta (11.5 x 11.1 mm)
 - b. Area = 100.25 mm²
 - c. Europe's smallest!



CONCLUSION:

This case study confirms successful applicability of a bifurcated ultra-low-profile EVAR device where a narrow distal aortic neck would have precluded use of standard profile bifurcated devices and normally resulted in the therapeutic option being AUI-EVAR and FFXO. This represents a novel indication for an ULP aortic endograft such as the Ovation Prime.

References

1. Available at: <http://www.trivascular.com/expanding-evar>. Accessed 03.01.2015.
2. Ioannou CV *et al*. Endovascular aneurysm repair with the Ovation TriVascular Stent Graft System utilizing a predominantly percutaneous approach under local anaesthesia. *Br J Rad* 2015. DOI: <http://dx.doi.org/10.1259/bjr.20140735>
3. Chaudhuri A. A 'post-close' technique for femoral hemostasis after percutaneous EVAR using an ultra-low-profile endoprosthesis system. *Eur J Vasc Endovasc Surg Short Reports* 2015. DOI: 10.1016/j.ejvssr.2015.10.001.

