

Single centre experience with the Artivion Custom Made Stent Graft for complex AAA repairs

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Objective:

Inner multi-branched endovascular aneurysm stent grafts (iBEVAR) have gained traction for complex aortic abdominal aneurysm (AAA) repairs. Here, we report the initial experience and early to mid-term outcomes of this technology.

Methods:

Retrospective study of all patients treated with complex AAA using a custom-built inner multi-branched stent graft (E-xtra Design, Artivion, Germany) in a single tertiary vascular centre (UK) between February 2022 and September 2024. The primary outcome was technical success. The secondary outcomes included procedural-related mortalities, morbidities, target vessel patency, and re-intervention rates.

Results:

Thirty-five patients (median age 80 years, 91% male) were treated. Twenty-eight patients had juxta-renal AAA, two infra-renal conical necks, two type IV TAAA and three previous EVAR. Mean aneurysm diameter was 64mm +/- 12.4mm. All patients had an American Society of Anaesthetists (ASA) score of 3. All patients had a successful iBEVAR implantation (Three cases had unilateral, and one had bilateral iliac branched devices deployed). 149 target vessels (139 visceral + 10 iliac) were stented (99% using BeGraft Plus stent graft, Bentley, UK) with a 100% patency post-procedure. Follow-up identified six (4.3%) target vessel occlusions (two coeliacs, two superior mesenteric and two renal arteries). There were no 30-day mortalities. 30-day morbidity identified a single posterior circulation stroke. There was one T1bEL and one T3EL, which settled with close observation. Three early re-intervention procedures were performed (one T1cEL requiring renal stenting, one renal salvage

with aspiration thrombectomy and one covered stent for an external iliac dissection. Mean follow-up was 11.1 months +/- 7.9 months. In addition, three patients with ruptured juxta-renal aneurysms were successfully treated and discharged home using an off-the-shelf inner branch EN-side stent graft system (Artivion, Germany).

Conclusion:

Here, we report excellent early to midterm outcomes for elective use of the Artivion inner branch technology. Longer-term outcomes will be reported in due course.