**The impact of aneurysm extent on mid-term survival after elective fenestrated-branch endovascular aortic repair**

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**Background**
To compare the early and mid-term outcomes of elective fenestrated and branch endovascular aortic repair (FBEVAR) according to aneurysm extent.

**Method**
Single-centre retrospective study of consecutive patients who underwent elective FBEVAR for primary aneurysms between December 2007 and December 2024. Patients who had prior AAA repair were excluded. Primary endpoint was Kaplan-Meier estimates of medium-term survival. Data are presented as median (IQR). A P-value of <0.05 was considered significant.

**Results**
797 patients [657 men; median age, 74 (69-79) years] were treated for primary juxtarenal (JR) AAA (n=456), extent IV (n=163) or extent I-III thoracoabdominal aortic aneurysms (TAAA) (n=178). There was no difference in 30-day mortality (2.4%; JRAAA 2.6%, extent IV 2.5%, extent I-III 1.7%). Median follow-up was 46 months (19-80). Estimated 5-year survival (±SE) was 66%±2%: JRAAA 69%±3%, extent IV 56%±5%, extent I-III 67%±4% (p=.2).

**Conclusion**
In an experienced centre, aneurysm extent does not have a significant impact on early or mid-term survival after elective FBEVAR. Patients with extent IV TAAA appeared to have worse mid-term survival but this did not reach statistical significance.

**Effectiveness of the MANTA Vascular Closure Device for repair of ruptured abdominal aortic aneurysm by Endovascular Aneurysm Repair (RAAA-EVAR) in rAAA: A pilot study**

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**Background**
EVAR has quickly become the mainstay in managing RAAA if anatomically feasible. Femoral cutdowns were used due to the large profile devices. However, pEVAR is associated with shorter haemostasis and procedure completion times with less blood loss and groin pain.
The MANTA is the first dedicated collagen plug-based vascular closure device used for large-bore arterial puncture. It is mainly used in cardiac procedures, but is finding increasing use in endovascular surgery, particularly in EVAR. It is deployed in a shorter time and have lower failure rate than proglide. We carried out a study looking at the effectiveness of the MANTA device at RAAA-EVAR.

**Method**
Nine patients (Male n=7, female n=2 mean age 79 ± 9 years) underwent RAAA-EVAR, where the Manta was used as VCD. The median BMI was 29.5kg/m2. Overall, 16 large bore punctures were closed using the MANTA (Right n=9, Left n=7). Of these, 14 were virgin groins, and 2 were redo groins. The median arterial depth was 3.5cm.

**Results**
Our results showed that technical success was 93.75% (Haemostasis n= 14, safeguard dressing n=1, cutdown n=1). The median length of stay was 16 days. There were two mortalities in 30 days. None of the patients had PSA or stenosis from the closure site.

**Conclusion**
The MANTA can be used safely and effectively in RAAA. Our study shows that it has a high success rate with low complications and has clear advantages in minimal set-up time as a single-device-per-groin, with scope of usage even in redo groins.

**Central Blood Pressure and Variability Evaluation (CAVE-ON): Assessing the impact of blood pressure and blood pressure variability on AAA growth rates**

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**Background**
Blood pressure (BP) and BP variability (BPV) are closely linked with cardiovascular health; hypertension is linked with increased risk of AAA rupture. We investigated the relationship between peripheral and central BP, BPV and AAA growth and time taken to reach repair threshold.

**Method**
A multicentre, prospective study recruited patients ≥55 years with AAA to undergo peripheral and central BP and AAA measurement every four months from June 2022-2024. Visit-to-visit BPV was estimated by standard deviation (SD), coefficient of variation (CoV) and variation independent of mean (VIM); AAA was measured using ultrasound, by the same assessor. Growth was estimated using linear mixed effects.

**Results**
137 patients (110 male) were followed over a mean of 15±5.4 months. Peripheral and central BP and BPV were not related to AAA growth, nor did they affect the time it took to reach repair threshold. The growth rate was 1.34mm/year. A 1cm greater baseline diameter increased the growth rate by 1.12mm/year. Current smoking was associated with faster growth (+0.93mm/year, CI=0.3-1.6, p=0.005); ischaemic heart disease (IHD) was associated with slower growth (-0.56mm/year, CI=-1.1--0.01, p=0.047), independently of AAA diameter and smoking. More guideline compliant cardiovascular medication prescription including two-fold use of antihypertensives were noted in the IHD group; antihypertensive adherence was similar in both groups.

**Conclusion**
There was no relationship between peripheral and central BP or BPV and AAA growth. Reduced growth in the presence of IHD seems to be attributable to better prescription of cardiovascular medications, suggesting best medical therapy may have an important role in reducing AAA growth.

**Fenestrated-branch endovascular aortic repair in octogenarians**

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**Background**
According to the NVR, endovascular repair accounts for over 80% of elective abdominal aortic aneurysm (AAA) repairs in octogenarians. This study compares the outcome of elective fenestrated and branch endovascular aortic repair (FBEVAR) in octogenarians and non-octogenarians.

**Method**
Single-centre retrospective study of consecutive patients who underwent elective FBEVAR between December 2007 and December 2024. Primary endpoint was Kaplan-Meier estimates of medium-term survival. Data are presented as median (IQR). A P-value of <0.05 was considered significant.

**Results**
A total of 701 non-octogenarians [581 men; median age, 72 (68-76) years] and 216 (24%) octogenarians [180 men; median age 82 (81-84) years] underwent repair. Octogenarians were more likely to have prior AAA repair (19% vs. non-octogenarians 11%; p<.001) and require juxtarenal AAA repair (69% vs. non-octogenarians 53%; p<.001). The 30-day mortality was 2.1% (n=19; octogenarians 3.2% vs. 1.7%, p=.27). Median follow-up was 46 months (19-80). Estimated 5-year survival (±SE) was 52%±4% in octogenarians compared with 68%±2% in non-octogenarians (p<.001).

**Conclusion**
While early mortality was similar, mid-term survival was inferior which may be a consequence of the fact that octogenarians were a decade older than their younger counterparts and more likely to have had prior AAA repair.

**The impact of introducing a surgeon-led emergency EVAR service on outcomes and cost efficiency in ruptured aortic aneurysm management: A UK single-centre experience**

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**Background**
Ruptured abdominal aortic aneurysm (rAAA) is a life-threatening emergency with high mortality. Open surgical repair (OSR) has been the standard treatment, endovascular aneurysm repair (EVAR) offers a potentially superior alternative. This study assesses the patient outcomes and cost-efficiency of an emergency EVAR service at UK a tertiary centre.

**Method**
A retrospective cohort study was conducted, including all patients presenting with rAAA from January 2019 to December 2023. Patients were split into two periods: Period A (2019-2020), when only OSR was available, and Period B (2021-2023), after the introduction of emergency EVAR. Patients were categorized into OSR and EVAR groups, and outcomes such as 30-day mortality, one-year mortality, reintervention rates, length of stay, and cost-effectiveness (using Quality-Adjusted Life Years [QALYs] and Incremental Cost-Effectiveness Ratio [ICER]) were evaluated.

**Results**
Seventy-one rAAA patients were identified, with 58 undergoing surgery. In Period A, all patients received OSR, while 36.8% of patients in Period B underwent EVAR. The 30-day mortality rate was significantly lower in the EVAR group (7%) compared to OSR (50% in Period B, 63.3% in Period A, $p = 0.011$). One-year mortality was similar between groups, though OSR patients in Period B had increased late mortality ($p = 0.00075$). Reintervention rates were higher for OSR (25% vs. 0% for EVAR, $p = 0.044$). EVAR also showed superior cost-effectiveness, with an ICER of £202,526 per QALY.

**Conclusion**
The introduction of emergency EVAR service significantly improved short-term survival and reduced reintervention rates. EVAR showed superior cost-effectiveness, suggesting it should be preferred when possible.

**Bridging the Gap: A propensity-matched analysis of sex differences in complex EVAR**

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**Background**
Recent evidence indicates that women undergoing aneurysm repair experience inferior outcomes relative to their male counterparts, irrespective of treatment modality. Moreover, female sex has been identified as an independent predictor of both one-year and five-year mortality following aneurysm repair.

**Method**
We performed an analysis of patients undergoing complex abdominal and thoracoabdominal aneurysm repair between 2010 and 2024. To adjust for major confounding factors, we applied propensity score matching (1:1 nearest neighbour method) for imbalanced covariates, including aneurysm extent, prior repair, referral source, modality, and number of target vessels.

**Results**
In total, 917 patients were identified (156 women, 17\%), with a median age of 75 years (IQR 70-79). Of these, 781 (85.2\%) underwent fenestrated EVAR (FEVAR) and 136 (14.8\%) underwent branched EVAR (BEVAR), for juxtarenal aneurysms (519, 56.6\%), Extent IV (190, 20.7\%), and Extent I-III aneurysms (208, 22.7\%). Women were more likely than men to be referred from other centres (70.5\% vs 54.1\%, p<0.001) and to present with thoracoabdominal aneurysms (62.8\% vs 39.4\%; OR=0.39, 95\% CI 0.27-0.55, p<0.001). In the propensity score-matched cohort, 30-day survival did not differ significantly between men and women (2.1\% vs. 1.3\% mortality, p = 1.000), and similar results were observed for survival (median follow-up 44.8 months [IQR 16.8;79.6]; HR(male)=0.88, 95\%CI 0.64-1.20, p=0.425).

**Conclusion**
Our findings suggest that perioperative mortality and overall survival following complex EVAR procedures are comparable between sexes. Detailed population-based analyses of the incidence of complex aneurysms are needed to elucidate potential sex discrepancies in this cohort.