The evidence of F-EVAR is lacking, chimney is the winner

Konstantinos Donas

Münster, Germany

F-EVAR Literature

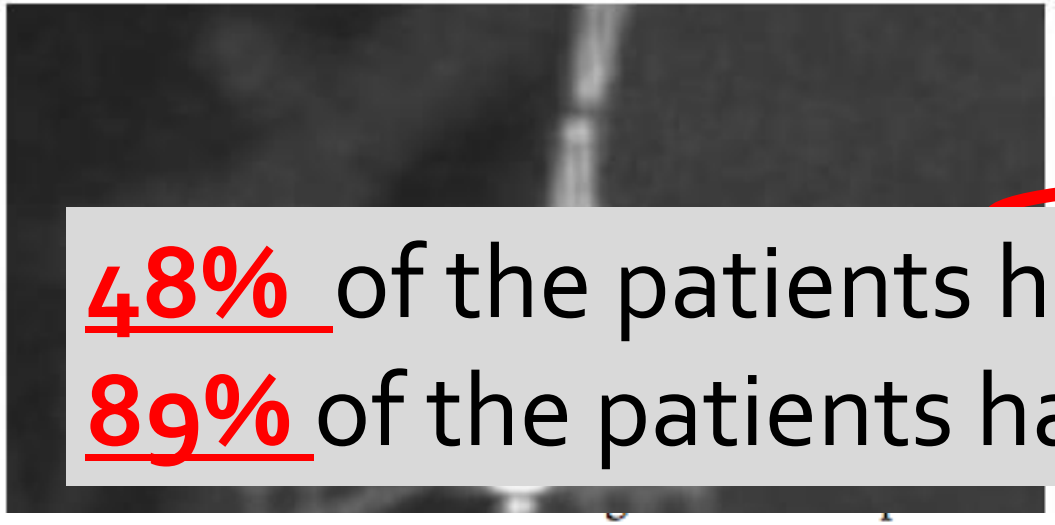
- Long-term results
- Durability

But…..

- Long-term results
- Durability
- Only in the titles/abstracts of the papers

Visceral stent patency in fenestrated stent grafting for abdominal aortic aneurysm repair

Frederike A. B. Grimme, MD,[a,b] Clark J. Zeebregts, MD, PhD,[a] Eric L. G. Verhoeven, MD, PhD,[c,d]
ielliu, MD, PhD,[a]



Finally, only 52% of the patients had a 1-year CT follow-up and only 11% had a 4-year CT follow-up, which influenced the results of this study.

Fig 5. Fractured uncovered stent in superior mesenteric artery (SMA) of 72-year-old man. Since the patient had no abdominal complaints, no intervention was performed.

troduced for treatment of
ted to be excellent. Results
y, including an overview of

54 target vessels. Technical
.7% at 1 year and 88.6% at
for uncovered stents; 97.3%
een covered and uncovered
3%) and occlusion in seven
ed stents ($P = .04$). Stent
with a significantly lower
renal function impairment
associated with renal stent

d 88.6% at 4 years. Patency
ed stents. Renal artery stent
ignificantly associated with

48% of the patients had no CTA FU at 1 year

89% of the patients had no 4-year CTA FU

Superior mesenteric arter
fenestrated endovascular

Salim Lala, MD,[a] Martyn Knowles, MD,[b] I
James Valentine, MD,[d] and Carlos Timaran

Objective: The Zenith (Cook Medical, Bloomingto
scallops or large fenestrations to address the su
unstented scallop or a large fenestration is possi
aortic aneurysm repa
Methods: During an 18-month period, 47 FEVA
grouped according to unstented (n = 23) vs stented (n =
Board approved this single-institution observational study
consent was unnecessary for the study.
Results: Technical success for FEVAR was 100%. The med
Nine of 21 patients (43%) in the unstented group had some
these, four patients (44%) developed complications: three
velocity in patients with and without SMA misalignment
misalignment occurred in the stented group, and only one
angioplasty. Overall, patients with unstented SMAs had si
misalignment than the stented group (44% vs 5%, respectiv
Conclusions: Misalignment of the SMA with the use of unste
Routine stenting of single-wide and large fenestrations, w
FEVAR. (J Vasc Surg 2016;64:692-7.)

43% of the patients with misalignment

44% of these patients developed visceral complications

Fig 1. Superior mesenteric art
lated as scallop misalignment rel
the diameter of the SMA ostia
calcu-
led by

Twelve-year results of fenestrated endografts for juxtarenal and group IV thoracoabdominal aneurysms

Tara M. Mastracci, MD, Matthew J. Eagleton, MD, Yuki Kuramochi, BScN, Shona Bathurst, and Katherine Wolski, MPH, *Cleveland, Ohio*

Objective: The practice of using fenestrated endografts to treat juxtarenal and group IV thoracoabdominal aortic aneurysms (TAAAs) has become more accepted, but long-term outcomes are still unknown. We report long-term survival, complications, and branch-related outcomes from a single-center experience.

Methods: The study included consecutive patients enrolled prospectively into a physician-sponsored investigational device exemption classified as undergoing group IV TAAA or juxtarenal aneurysm repair by the treating surgeon using fenestrated endografts. Device morphology was used to subclassify this group of patients. Long-term survival and a composite outcome of secondary intervention, branch occlusion, stent migration, endoleak, aneurysm growth, or spinal cord injury were calculated. Descriptive analysis of branch-related outcomes and need for any reintervention was performed. Univariate and multivariate analysis of mortality and the composite outcome was performed to determine associative risks.

Results: Long-term survival for patients with juxtarenal and group IV TAAA aneurysms treated with fenestrated stent grafts was 20% at 8 years. Multivariate analysis showed long-term survival for this patient population was negatively associated with increasing age, congestive heart failure, cancer, and previous aneurysm repair. The risk of spinal cord ischemia (SCI) in this group was 1.2% and of aortic-related mortality was 2%. The risk of a spinal event increased with coverage above the celiac artery (52 mm of coverage above the celiac artery in patients with SCI vs 33 mm without SCI; $P = .099$). More complex device configurations were more likely to require an increased rate of reinterventions, and patients with celiac fenestrations were more likely to experience celiac occlusion over time (3.5% vs 0.5%; $P = .019$). However, less complex designs were complicated by an increased risk of type I endoleak over time (10.4% for renal fenestrations only vs 1.9% for others; $P < .01$). As experience evolved, there was a trend to increase the number of fenestrations in devices treating the same anatomy.

Conclusions: The use of fenestrated devices to treat juxtarenal and group IV TAAA is safe and effective in long-term follow-up. Mortality in this patient population is largely not aortic-related. Devices designed for fenestrated repair of juxtarenal and group IV thoracoabdominal aneurysms within a physician sponsored investigational device exemption have changed over time. Further research is needed to determine the best configuration to treat aneurysms requiring coverage proximal to the celiac artery. (J Vasc Surg 2015;61:355-64.)

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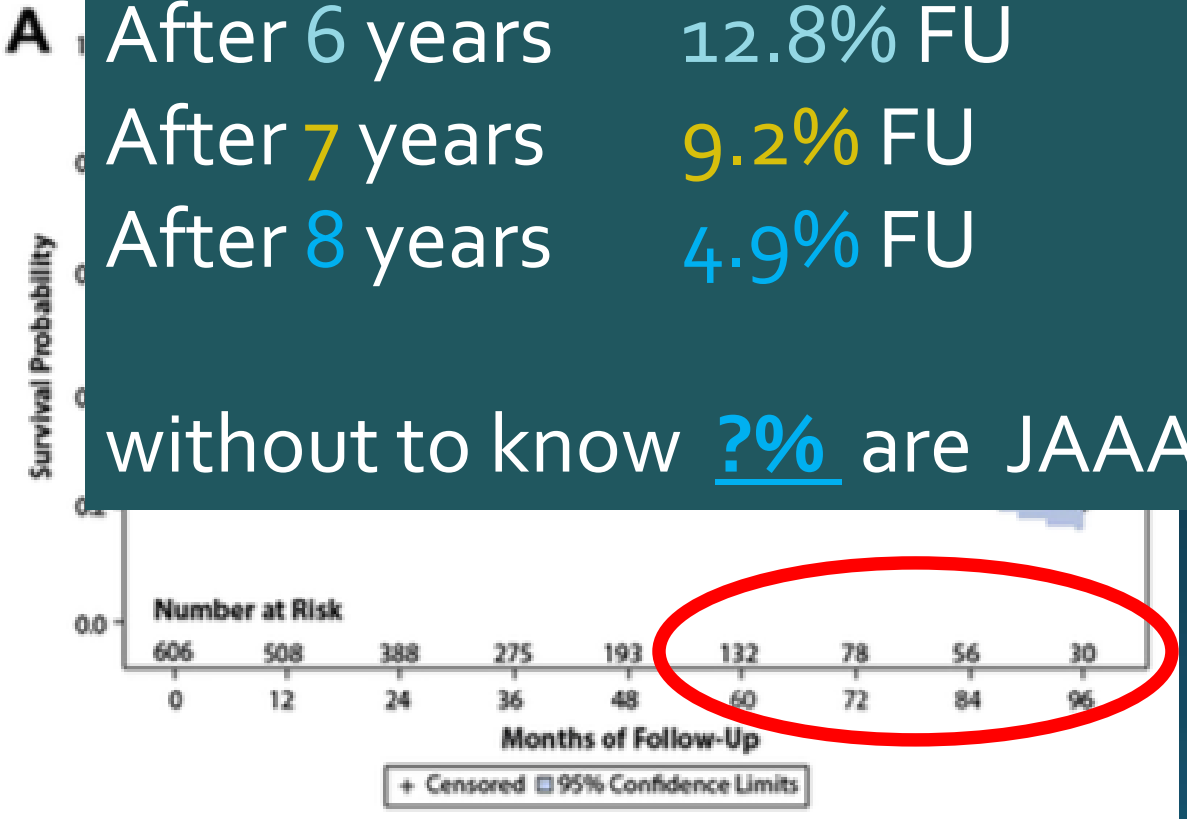
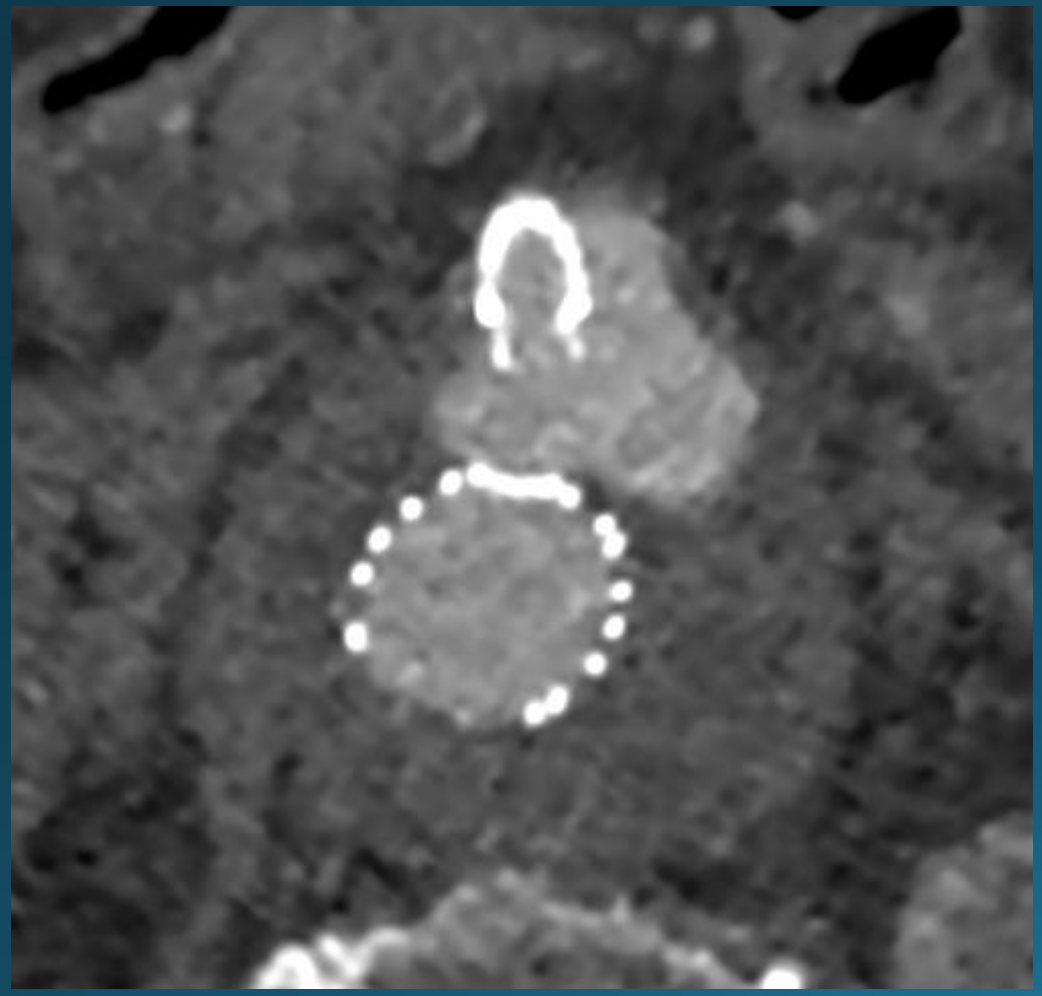


After 5 years 21% FU
After 6 years 12.8% FU
After 7 years 9.2% FU
After 8 years 4.9% FU

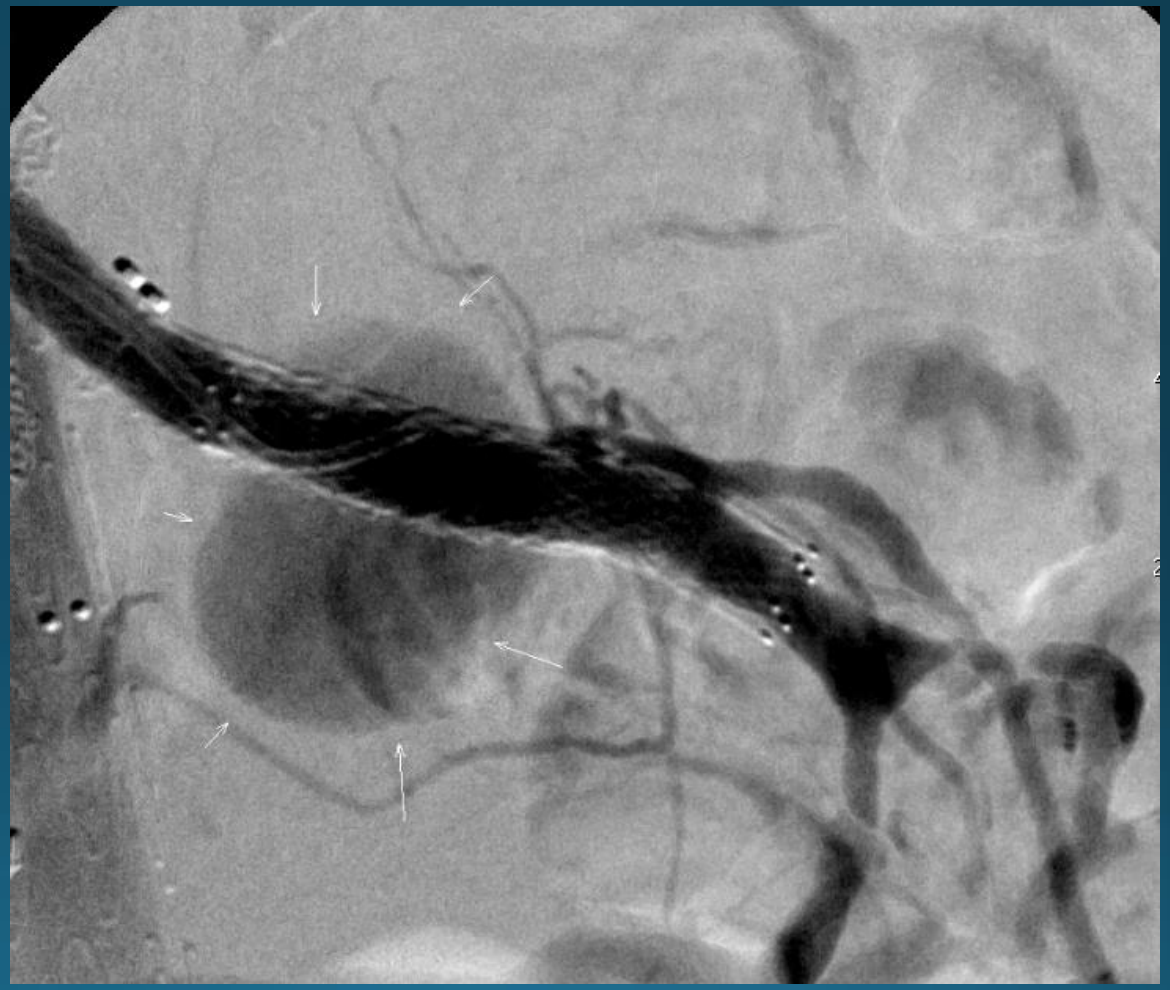
without to know ?% are JAAAs

Study	Year	Details of complication requiring secondary reintervention	Time of reintervention	Morbidity from reintervention	Mean follow- up
Greenberg[41]	2009	• 3 patients treated by angioplasty at 6, 12, and 24 months for in-stent stenosis of right renal artery; 1 patient treated for bilateral renal artery in-stent stenosis at 6 months. • Left renal artery occlusion treated by left iliac-renal bypass	6, 12, 24 months	Uneventful	24 months
Chisci[16]	2009	• Fogarty embolectomy + fibrinolysis • Major amputation • Fogarty embolectomy + fibrinolysis • Stent graft + coil embolization of superficial femoral artery • Renal artery stent graft • Superior mesenteric artery stent			19.5 months
Kristmundsson[42]	2009	• Distal type I endoleak treated by Giant Palmaz[b] stent in right iliac artery • Type II endoleak treated by coil embolization of inferior mesenteric artery and glue embolization of lumbar arteries • Renal artery stenoses treated by percutaneous transluminal angioplasty at 12 months.	Perioperative, 1-18 months		25 months
Scurr[43]	2007	• Distraction of graft components treated by bridging cuff addition at 28 months • 2 iliac limb extensions at 1 and 24 months • Progressive stenotic disease treated by iliac angioplasty at 6 months • Stenosis within stented superior mesenteric artery treated by angioplasty at 15 days	Perioperative, 1 month, 28 months	• Patient with distraction of graft components late died of pancreatitis • Patient with superior mesenteric artery stenosis developed critical stenosis at 6 months, which was successfully treated by iliac-superior mesenteric artery bypass.	24 months
Semmens[44]	2006	• Unresolved type I endoleak treated by Giant Palmaz Stent • Persistent type II endoleaks	Perioperative, 16.8 months	• 2 patients died ≤30 days of secondary procedure • 1 patient died after	16.8 months

Secondary procedures caused by dislocation of bridging devices



Secondary procedures caused by fracture of bridging devices



The role of open and endovascular treatment with fenestrated and chimney endografts for patients with juxtarenal aortic aneurysms

Konstantinos P. Donas, MD, PhD,[a] Markus Eisenack, MS,[a] Giuseppe Panuccio, MD, PhD,[a] Martin Austermann, MD, PhD,[a] Nani Osada, PhD,[b] and Giovanni Torsello, MD, PhD,[a] *Münster, Germany*

Objective: To present endovascular techniques in the treatment of juxtarenal aortic aneurysms (JAAAs) in relation to surgical repair; this is the "gold standard."

Method: Between January 2008 and December 2010, 90 consecutive patients were diagnosed with primary degenerative JAAAs (≥5.0 cm) and assigned prospectively to different operative strategies on the basis of morphologic and clinical characteristics. In particular, 59 patients were treated by endovascular means such as fenestrated endovascular abdominal aortic repair (f-EVAR, n = 29) or chimney endovascular abdominal aortic repair (ch-EVAR, n = 30) endografting, and 31 patients underwent open repair (OR, n = 31).

Results: Early procedure-related and all-cause (30-day) procedure-related mortality was 0% for the endovascular group and 6.4% (n = 2/31) for the OR group, due to systemic inflammatory response syndrome with consecutive multi-organ failure ($P = .023$). Persistent postoperative hemodialysis occurred only after OR (2/31; 6.4%). The overall estimated pre- and postoperative median estimated glomerular filtration rate and creatinine values were similar in the three subgroups. There was one left renal artery occlusion for each endovascular subgroup, which presented as flank pain and was treated by iliaco-renal bypass in both cases. Transfusion requirements and length of hospital stay were significantly less in the endovascular group ($P = .014$ and $P = .004$, respectively).

Conclusions: Endovascular treatment of JAAA is a safe alternative for the short-term management of JAAA. (J Vasc Surg 2012;56:285-90.)

Status ….today?

(Evaluation completed Decem… 7)

- … are dead
- 5… re also dead

Chimney EVAR

- **Safe**
- Applicable in **urgent cases** (off-the-shelf devices)
- **Reproducible** having also mid-term fu[1]
- Treat anatomies **unsuitable for F-EVAR** without to involve the SMA
- **Cost-effective** (almost 65% of the treated patients will die after 5 years of FU)
- Regarding gutters (**only 2.9%** persistent and need re-intervention)[1]

[1]PERICLES Registry

VIDEO-CASE PRESENTATION

- Patient underwent double chimney graft placement during the ENDOVASCULAR MASTERCLASS (December 2017)
- Video starts with the intraoperative angiography showing gutter-related endoleak type IA
- Discussion in the panel about options for treatment of the gutters
- At the end you see the CTA 2 days after the procedure!


Münster

SOCIETY FOR VASCULAR SURGERY® DOCUMENT

The Society for Vascular Surgery practice guidelines on the care of patients with an abdominal aortic aneurysm

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Boston, Mass; Palo Alto, Calif; Chicago, Ill; Philadelphia, Pa; Boca Raton, Fla; Grand Rapid...

Rochester, Minn; and Seattle, Wash

chimney is the winner

«H... ...chimney or snorkel ...range of complex aortic anatomy potentially treatable by EVAR»