CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE

CONTROVERSIES & UPDATES IN VASCULAR SURGERY

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MARRIOTT RIVE GAUCHE & CONFERENCE CENTER, PARIS, FRANCE

Homemade FEVAR: are results comparable to industry-customized grafts?

Frédéric Cochennec

Disclosure

Speaker name: Frédéric Cochennec

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- [x] I have the following potential conflicts of interest to report:
- [x] Consulting
- [ ] Employment in industry
- [ ] Shareholder in a healthcare company
- [ ] Owner of a healthcare company
- [x] Other(s)
- [ ] I do not have any potential conflict of interest

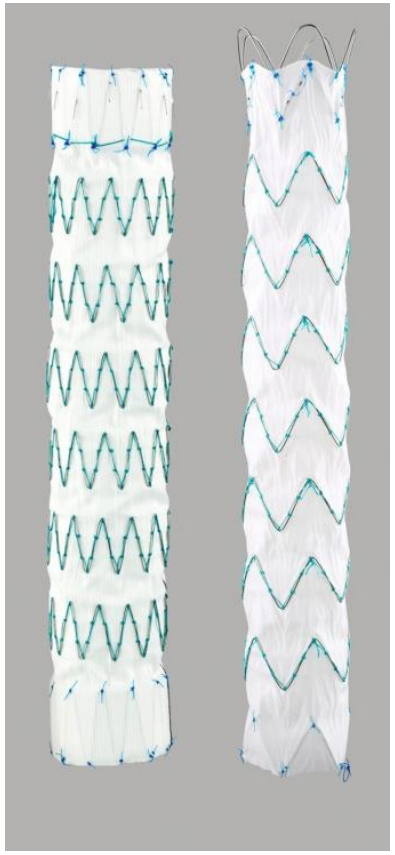
Selected Technique

Diameter-Reducing Wire to Facilitate Deployment of a Modified Zenith Fenestrated Stent Graft

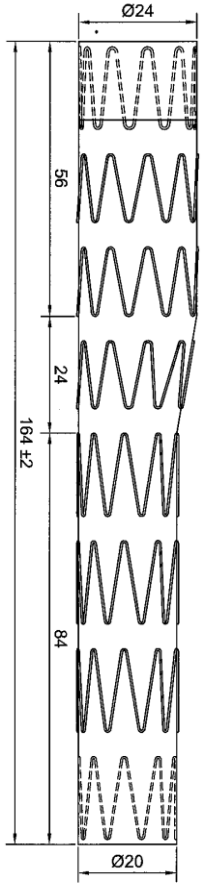
Gustavo S. Oderich, Rochester, Minnesota

Background: Modified fenestrated stent grafts have been used for compassionate treatment of large complex aortic aneurysms in high-risk patients who do not have access to a manufactured device and are not candidates for conventional open surgical repair. Accurate device design and precise implantation are key components of the procedure. A technique of device modification with diameter-reducing wire is described to facilitate catheterization of side branches.
Methods: The modified Cook Zenith stent graft was created using reinforced fenestrations with gold nitinol markers. The stainless steel wire, which secures the top cap into the uncovered stent, was partially withdrawn, retrieved, and redirected externally through-and-through the fabric of the stent graft. Each Z-stent was constrained using the stainless steel wire for support and by two nonlocking prolene loops. The constrained stent graft was 30% narrower than the unconstrained device, which allowed flow between the stent graft and the aortic wall, as well as longitudinal and rotational movement of the stent graft. After successful catheterization of the fenestrations, balloon-expandable stent grafts were advanced over hydrophilic sheaths, and the stainless steel diameter-reducing wire was removed with full expansion of the Z-stents to its unconstrained diameter. The fenestrations were stented with balloon-expandable stent grafts, followed by placement of iliac limbs
Conclusion: The use of a diameter-reducing wire allows longitudinal and rotational movement to the modified fenestrated stent graft and facilitates side branch catherization in patients in whom there is misalignment between the fenestration and the origin of the target vessel.

Ann Vasc Surg 2010



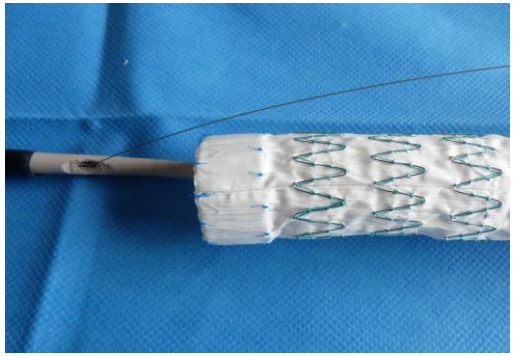
Standard TX2 or Alpha

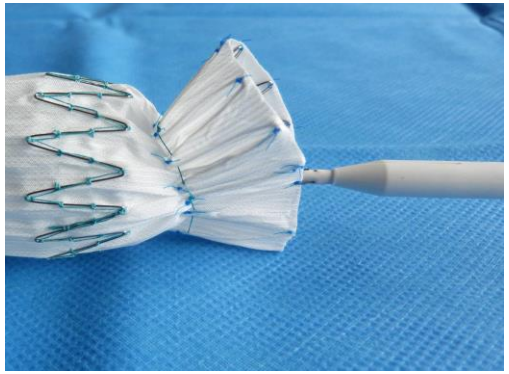


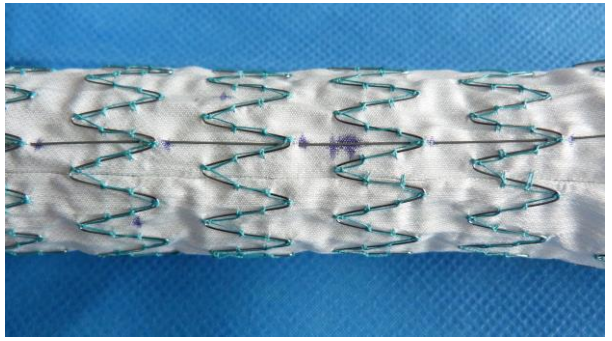
CMD TX2 Cook device

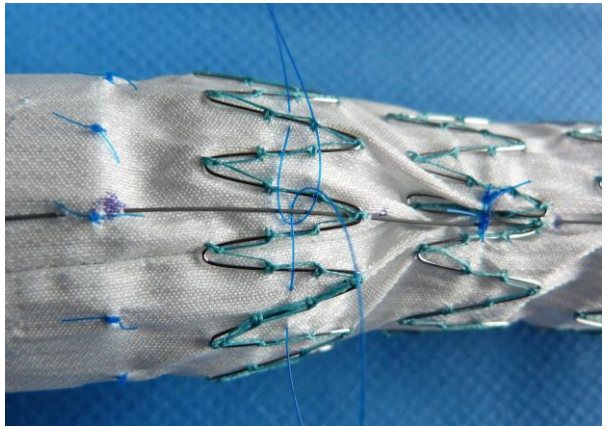
No proximal barbs

Reducing ties:

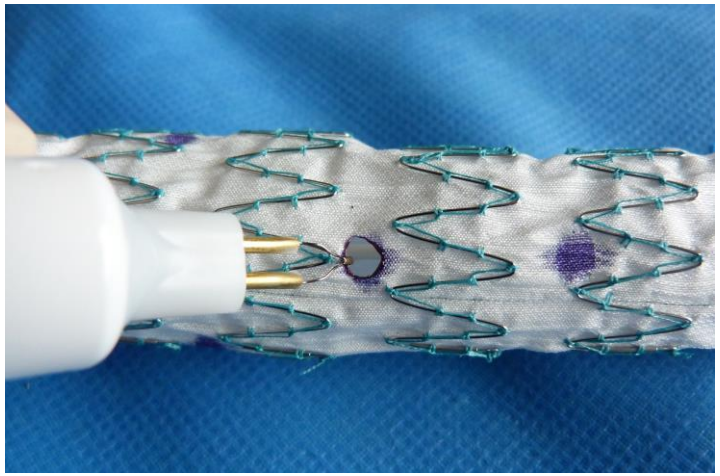








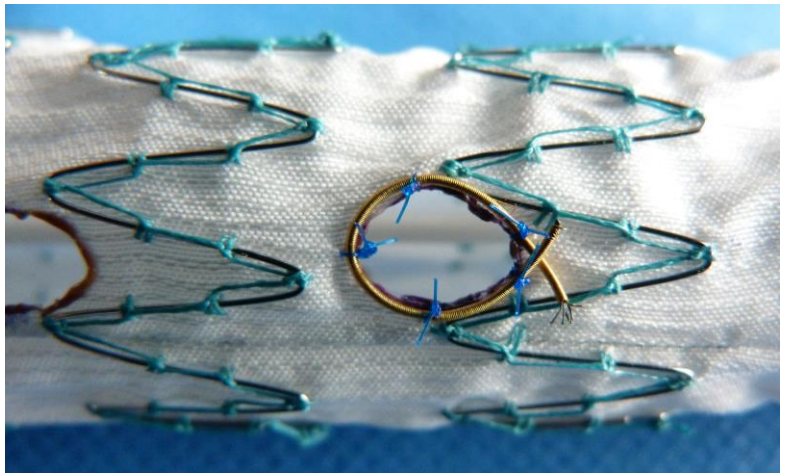
Fenestrations



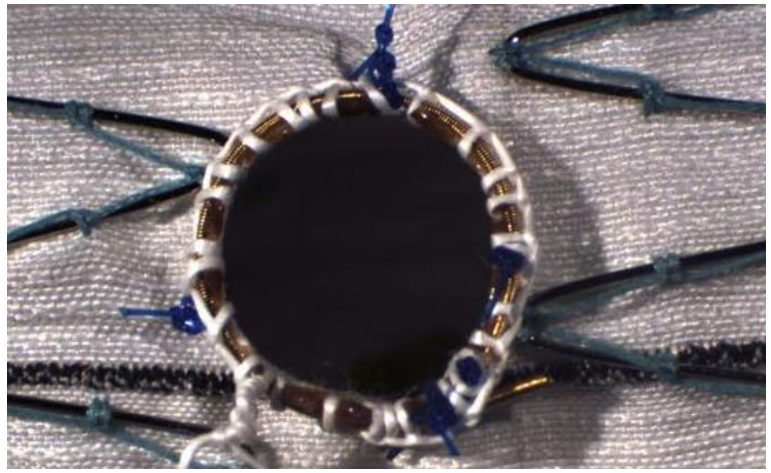
Ophthalmologic cautery

Renal: 6-7 mm

SMA / CA: 7-8 mm



GoseNeck Snare



4 stitches of prolene 5-0
Locking suture of CV5 (Gore)

Early Results of Physician Modified Fenestrated Stent Grafts for the Treatment of Thoraco-abdominal Aortic Aneurysms

F. Cochennec [a,*], H. Kobeiter [b], M. Gohel [c], M. Leopardi [a], M. Raux [a], M. Majewski [a], P. Desgranges [a], E. Allaire [a], J.P. Becquemin [a]

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[c] Department of Vascular Surgery Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust, UK

EJVES 2015

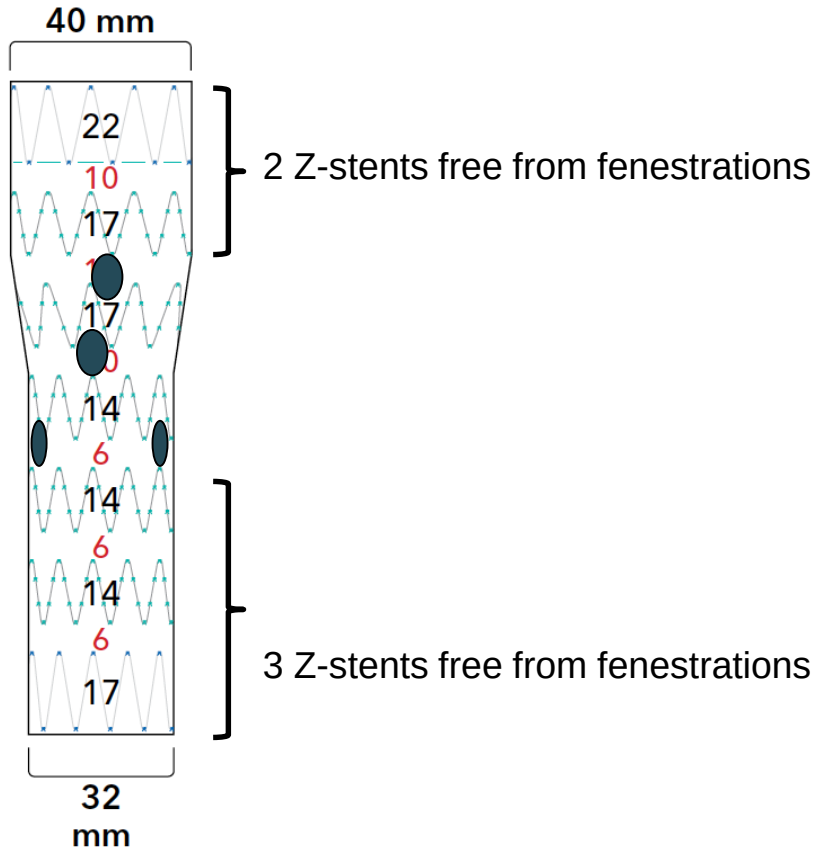
N=11

- Extended: 8; Type IV: 3
- In hospital mortality: 9% (n=1)
- One (9%) regressive paraparesis
- Four early reinterventions (endovascular)
- 6 months: all target vessels patent, no death, One type 2 endoleak

Recent Technical adjustments?

juxtarenal/suprarenal AAAs:

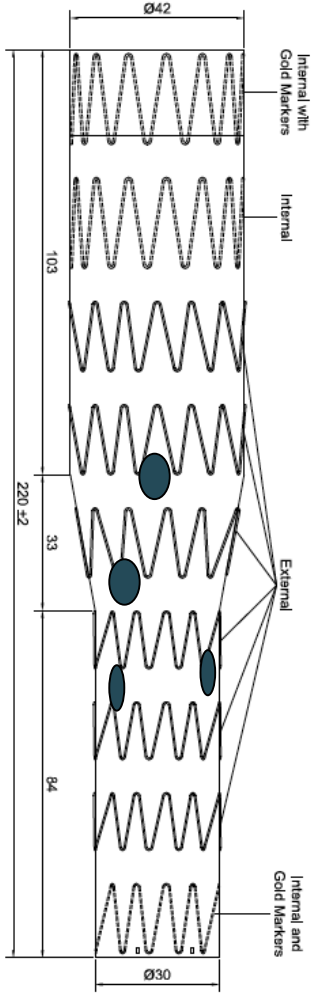
8 mm tapered TX2 Dissection Stent grafts



Thoracoabdominal aneurysm:

CM TX2 devices

No proximal barbs

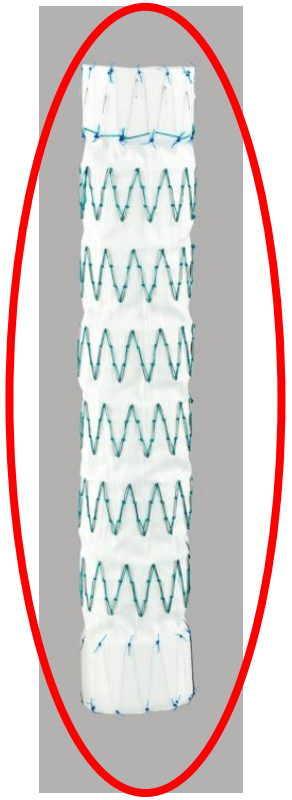


≥ 3 stents free from fenestrations

Tapering: 4th or 5th Z stent

≥ 3 stents free from fenestrations

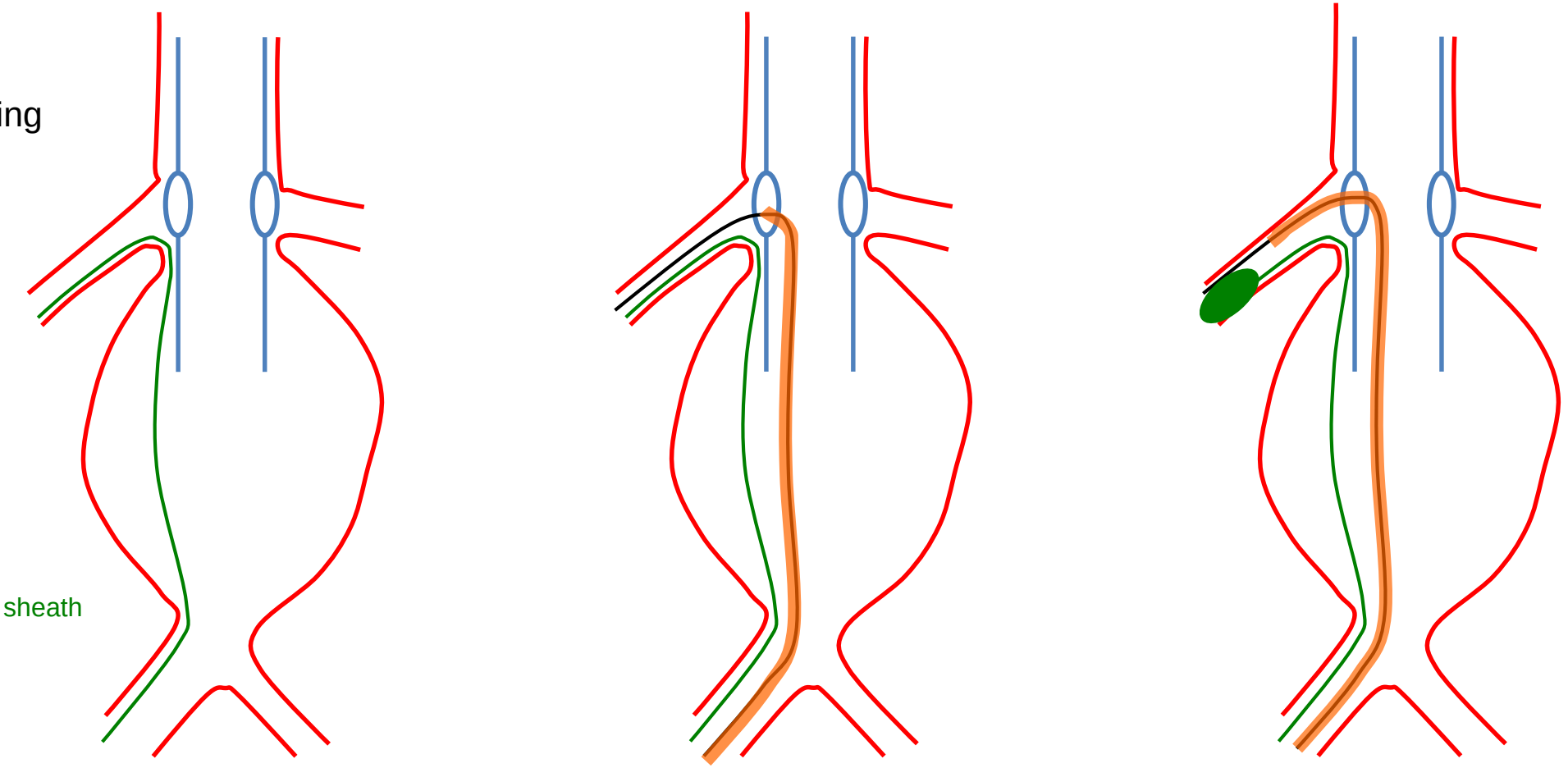
TX2



Alpha

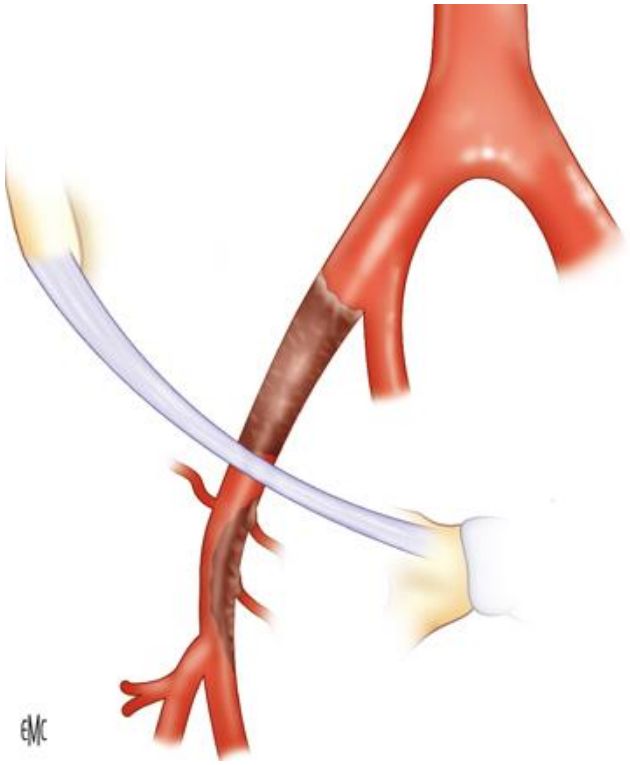
Renal pre cannulation

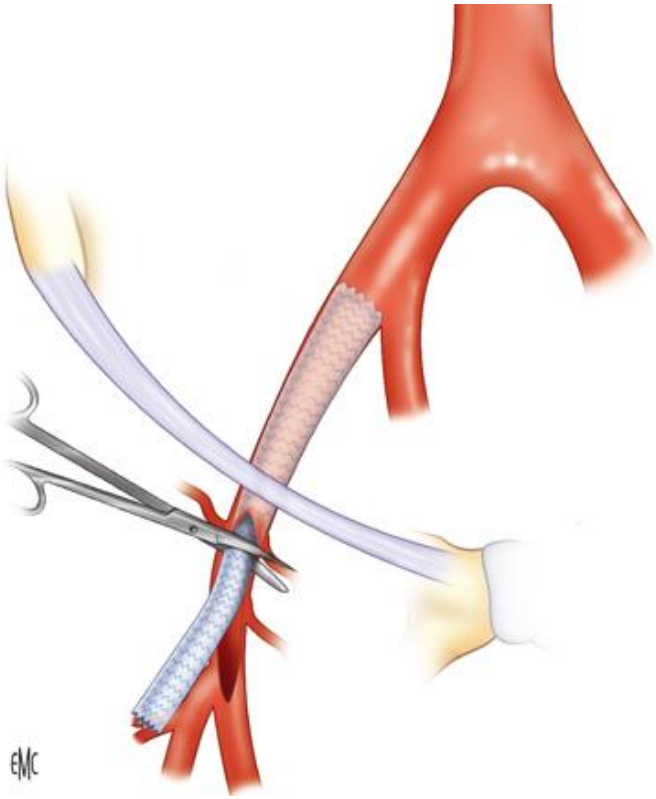
- Tortuous
- Stenosed
- Down-ward facing

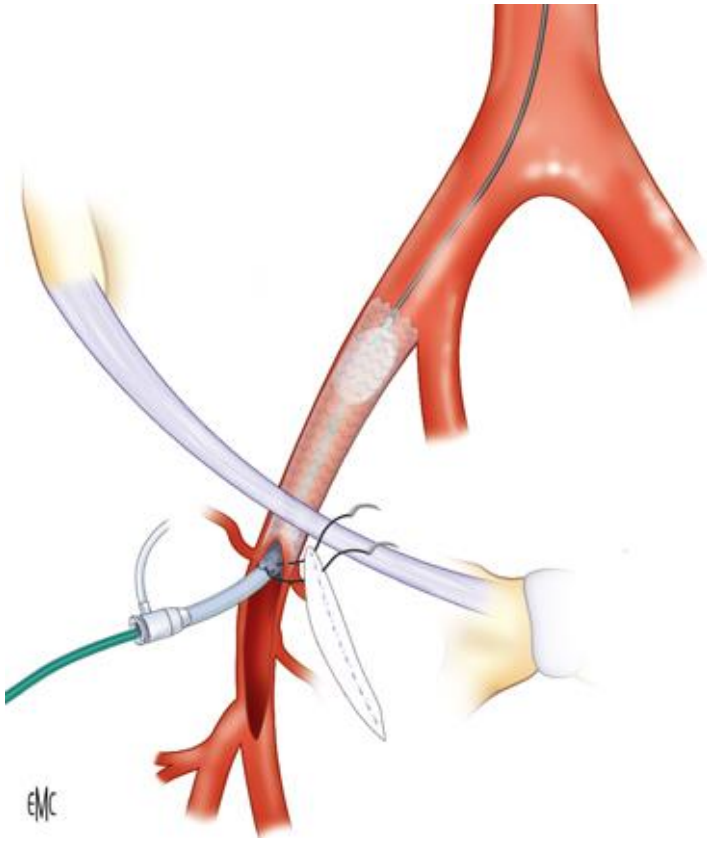


Rosen Wire +/- 5F sheath

Iliac access

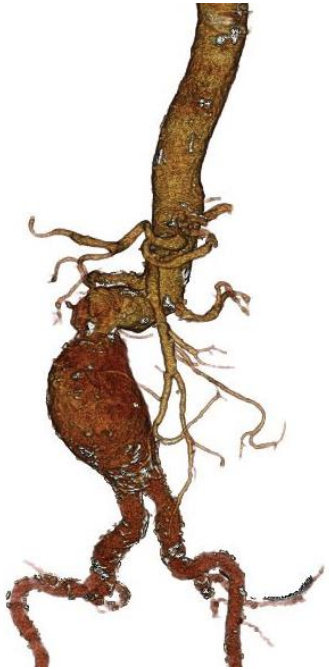






Fenestrations + parallel grafts

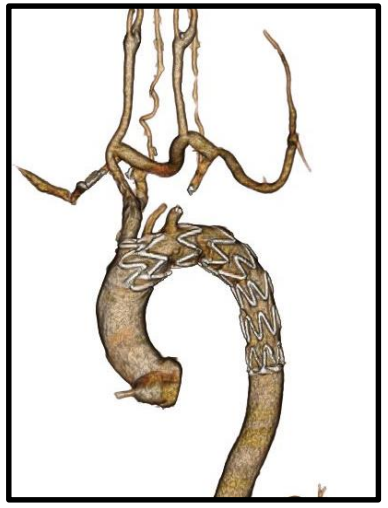
Chimneys

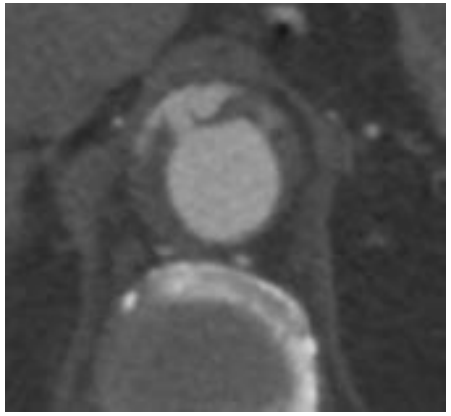


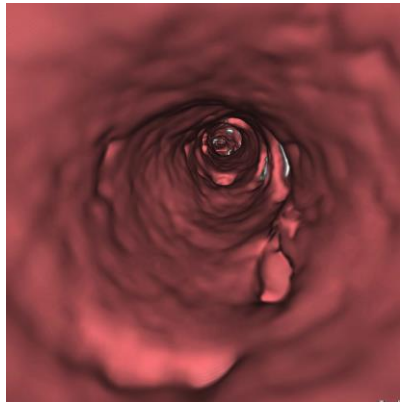
- Suprarenal AAA supra rénal
- Major aortic angulations

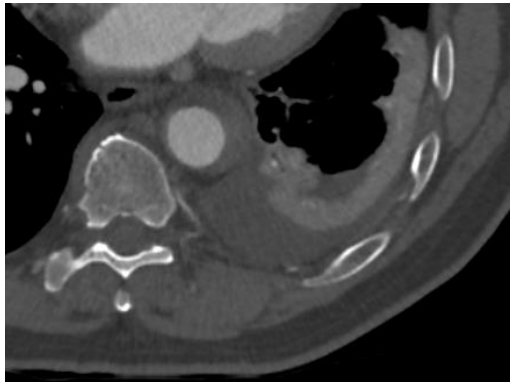
2 renal chimney grafts
2 fenestrations (SMA and CA)

Dissections ?

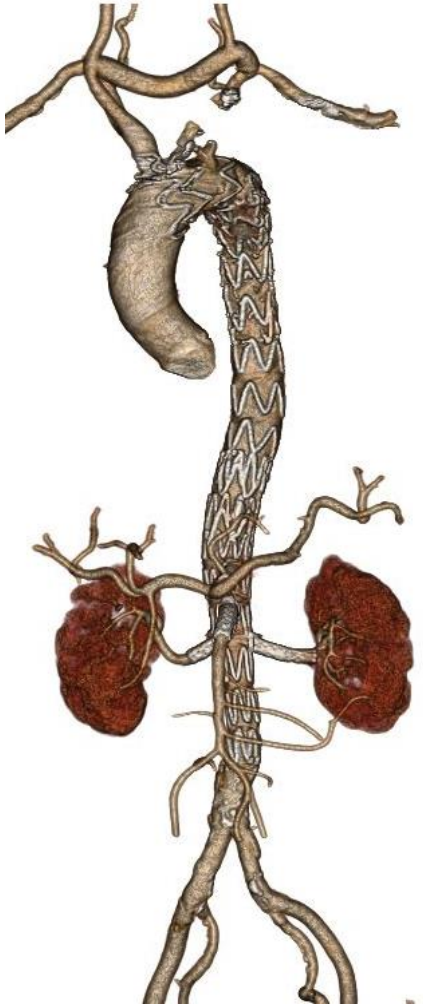


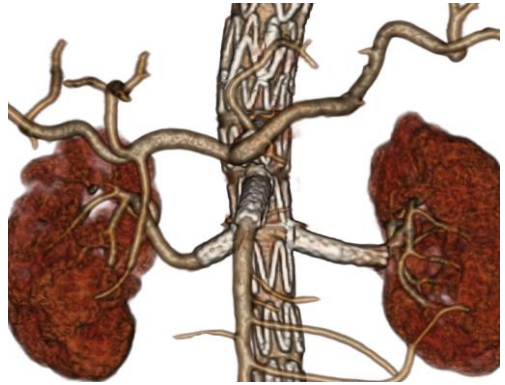


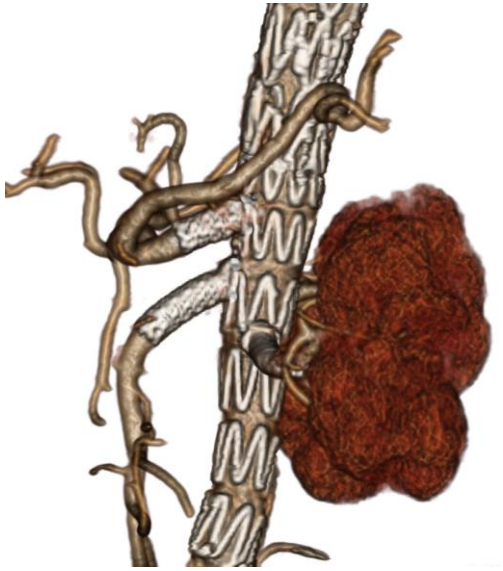




Day 3 post op







Henri Mondor experience:

2012-2017: 28 patients

Indications for home made FEVAR

- Painful : **13**
- Diameter > 70 mm: **11**
- Saccular aneurysm: **2**
- Complicated aortic intramural hematoma: **1**
- Anastomotic false aneurysm after Type IV TAAA OR: **1**

Henri Mondor experience (n=28)

Compassionate treatment…

- Mean age: 73
- **ASA 4**: 14 (**50%**)
- Coronary artery disease: 36%
- Cardiac failure: 39%
- COPD: 50%
- Renal Insufficiency: 25%
- Previous aortic repair: 25%

Thoracoabdominal: 18

Type IV: 4

Type I,II,III,V: 14

Pararenal: 8

Type Ia EL after EVAR: 2

Postoperative course:

In hospital death: 4 (14%)

1 stroke

1 colic ischemia

1 MI

1 severe pneumonia

Non fatal complications: 4 (14%)

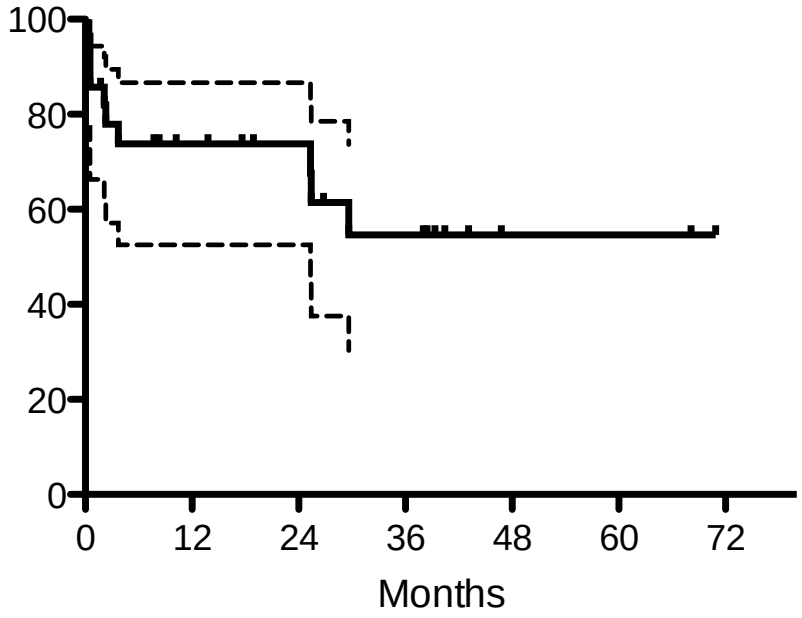
Spinal cord ischemia: 2 (7%)

1 grade 1
1 grade 2

haemorrhage: 2 (7%)

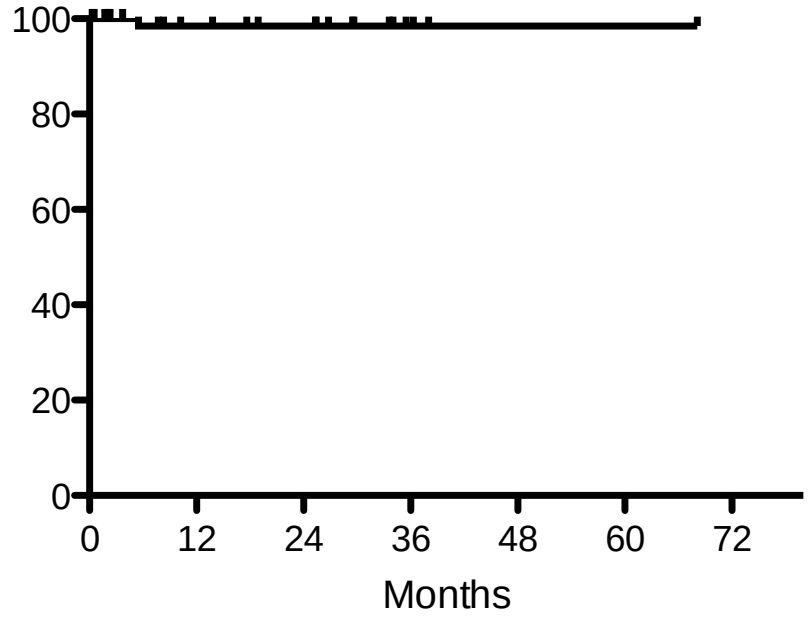
Median follow-up: 16 month (0-70)

- 1-year survival: 74 % (95%CI: 86-53)
- 2-year survival: 68% (95%CI: 83-45)



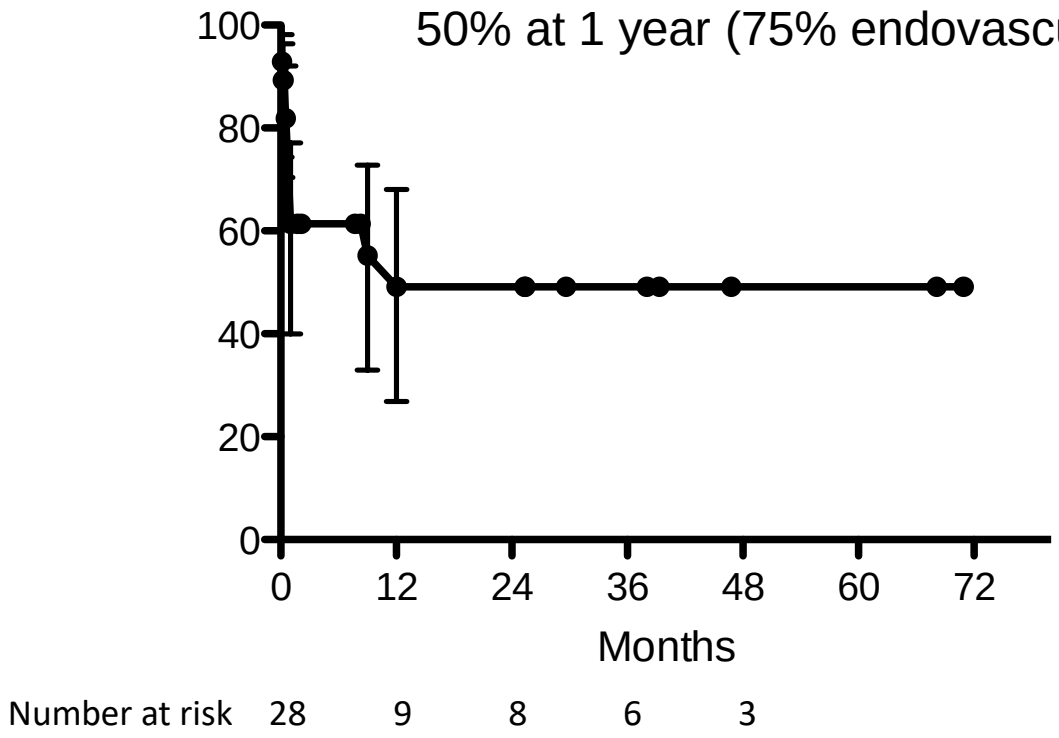
Number at risk	28	16	13	9	3

- target vessel patency at 2 years: 98%



Number at risk	98	54	44	16	8

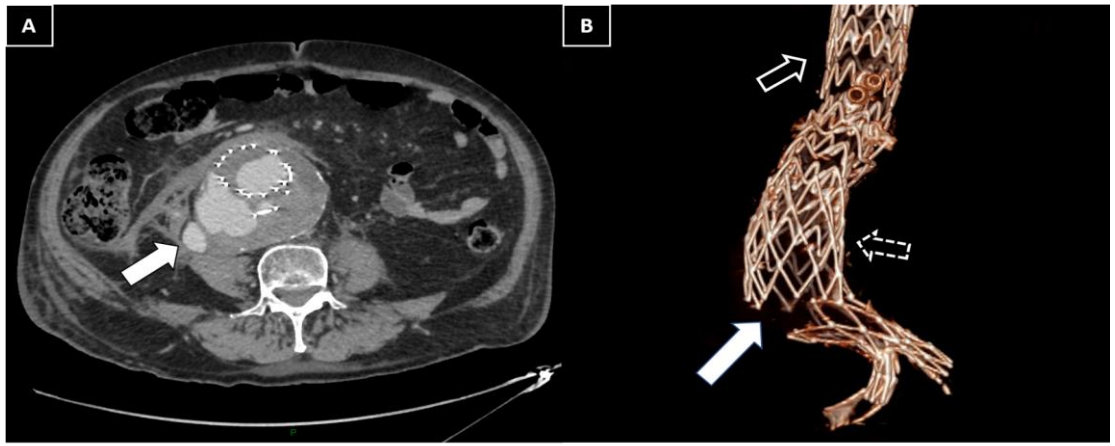
The Achille Heel: reinterventions



6 patients: type I or III EI

5 resolved

1 lethal rupture at 1 month



Manufactured stent grafts in expert centers

	Present series	Manufactured F/BEVAR
In-hospital mortality	14%	<5%
paraplegia	7%	<5%
2 year survival	75%	75-90%
Target vessel patency at 2 years	98%	95-99%
2 years Reinterventions rate	50%	10-50% ???

Oderich et al. JVS 2017
Roy et al. Br J Surg 2017
Mastracci et al. JVS 2015
Maurel et al. EJVES 2015
Katsargyris et al. JVS 2017

Conclusions

- Home made fenestrated stent grafts provide acceptable results in a high-risk population
- Higher rate of reinterventions than industry-customized fenestrated stent grafts
- Should be used in high-risk patients with painful/ > 70-80 mm aneurysms exclusively