



Hybrid repair for complicated chronic B dissection

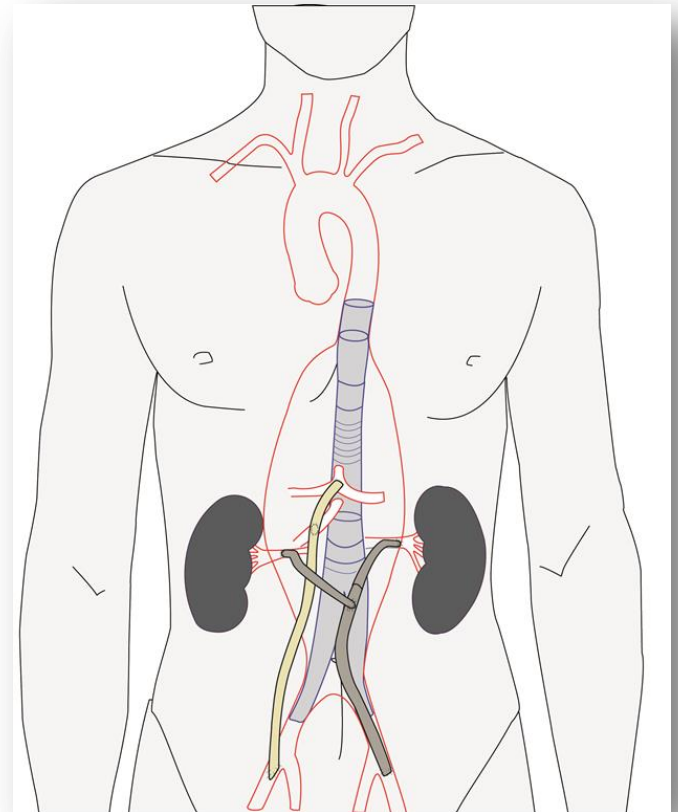
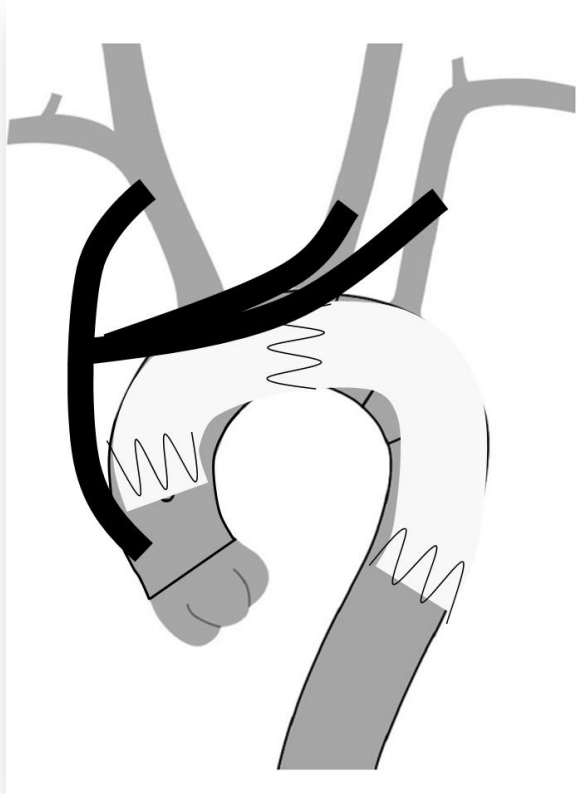
Zoran Rancic, MD, PhD

Francesco Setacci, MD

on behalf of Vascular Specialists @ UHZ



Hybrid repair (Debranching)



HYBRID VISCERAL PROCEDURE

thoracoabdominal and pararenal aortic aneurysms

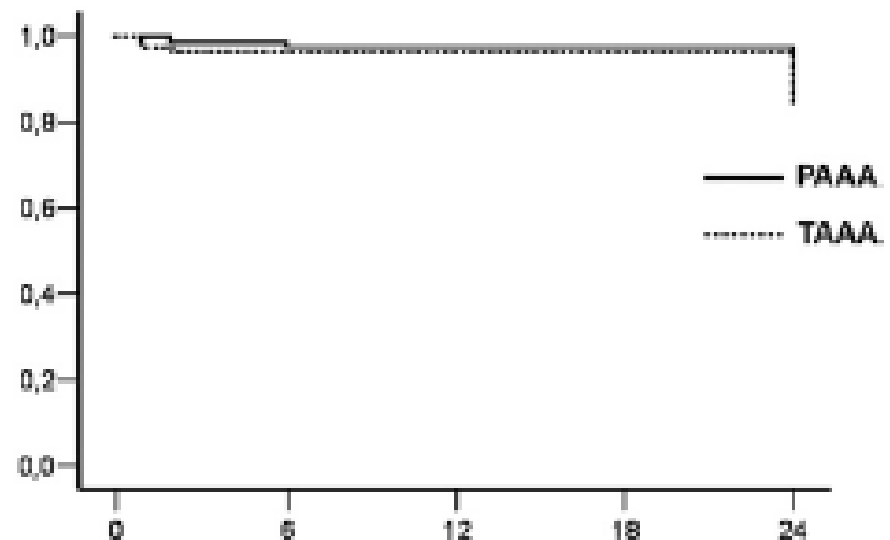
Konstantinos P. Donas, MD,^a Mario Lachat, MD,^a Zoran Rancic, MD,^a Christian Oberkofler, MD,^a Thomas Pfammatter, MD,^b Ivo Guber, MD,^a Frank J. Veith,^c and Dieter Mayer, MD,^a *Zurich, Switzerland; and Cleveland, Ohio*

n=58 (74 years)
30-day mortality
8.6%

with the main feeding graft, bypassing the aneurysm. All cases were treated by two-staged approach (endovascular debranching procedure). Computed tomography angiography was performed at three, six, and 12 months after the procedure. **Results:** Primary technical success of VORTEC was 97%. Primary patency rate of the Viabahn endoprosthesis in subgroups PAAAs and TAAAs was 97.7% and 96.4%, respectively. Occluded Viabahn grafts were reopened by thrombolysis and/or percutaneous transluminal angioplasty. Thirty-day mortality rate was 8.6%. A major neurologic deficit occurred in two cases (3.4%); paraparesis occurred in three patients presented early (30-day) type I endoleak, three of them treated by coil embolization. Long-term radiological surveillance.

Conclusion: VORTEC allows performance of easy, safe, and reproducible hybrid approach for thoracoabdominal aortic aneurysms and may represent a significant technical advancement for the treatment of thoracoabdominal aortic aneurysms. Questions of reproducibility by other centers and long-term follow-up are required. (J Vasc Surg 2009;50:1280-4.)

Cumulative primary patency



vessels
at risk

PAAA:	87	74	60	45	25
TAAA:	111	96	96	76	68

Fig. Primary cumulative patency rate of the Viabahn endoprosthesis in patients with thoracoabdominal and juxtarenal aortic aneurysms over a mean follow up period of 22.1 ± 12.9 months.

HYBRID ARCH PROCEDURE

Novel sutureless telescoping anastomosis
revascularization technique of supra-aortic vessels
to simplify combined open endovascular procedures
in the treatment of aortic arch pathologies

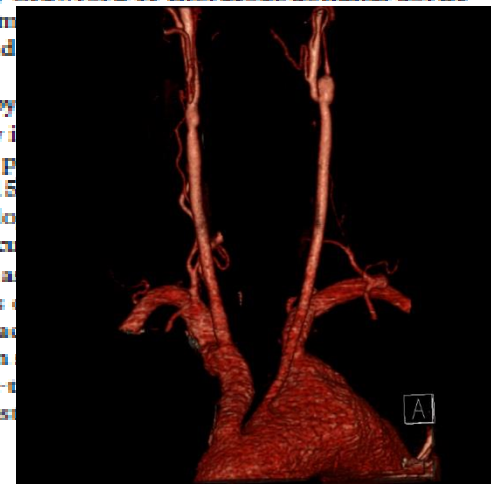
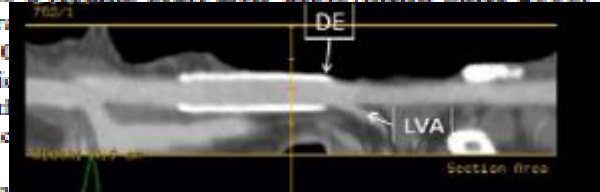
n=20
30-day mortality
7.6%

Rancic, MD,^a Mario Lachat, MD,^a Thomas Pfammatter, MD,^b
Veith, MD,^c and Dieter Mayer, MD,^a Zurich, Switzerland; Cleveland,

ence with the use of a sutureless telescoping anastomosis, initially described as
g TECHnique) revascularization technique, for debranching of supra-aortic

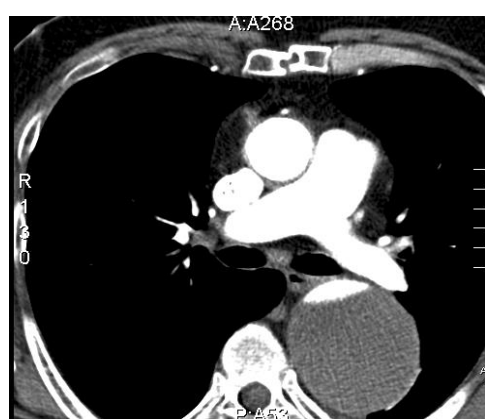
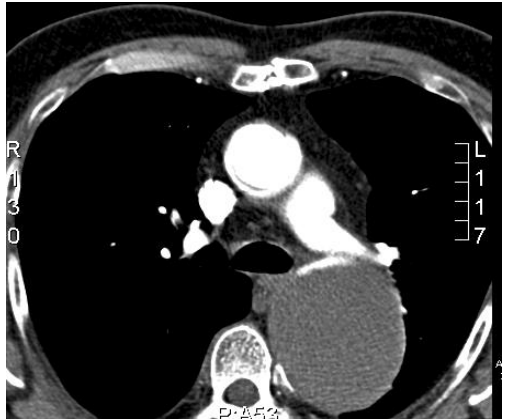
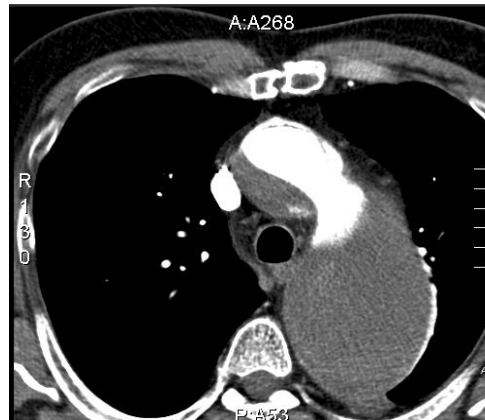
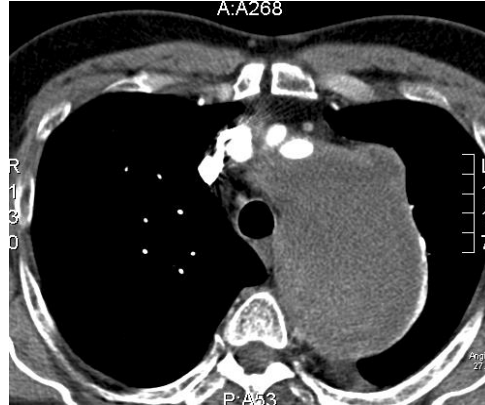
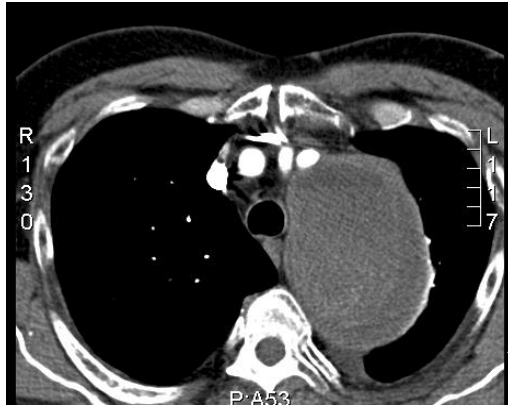
2008, 20 patients (15 men) with an aortic arch lesion underwent trans-sternal
debranching with sutureless telescoping anastomosis performed with a Viabahn (diameter, 5-8 mm; length, 5-15 cm) or
Hemobahn (diameter, 9-13 mm; length, 10-15 cm), followed by endovascular aneurysm repair. Initially, the Viabahn/
Hemobahn was sutured to a feeding graft after deployment. Since 2008, the Viabahn/Hemobahn has been deployed
within an interposition graft. Underlying aortic pathology was (1) isolated
aortic arch aneurysm in 10, (2) ascending or descending aorta in 6, (3) floating
thrombus within the aortic arch in 2, (4) Stanford II aortic dissection in 1, and (5) Crawford II thoracoabdominal aortic
aneurysm extending into the aortic arch in 1. The most common supra-aortic vessel involvement was the left vertebral artery in 13, and in
aneurysm extending into the aortic arch in 1. The most common supra-aortic vessel involvement was the left vertebral artery in 13, and in
all patients. Follow-up included annual CT or MRI of the aorta and supra-aortic vessels.

Results: Overall, 56 supra-aortic vessels in the 20 patients were debranched by
including the carotid artery in 18, subclavian artery in 13, and left vertebral artery in 13. The mean
mean ischemia time was 3 minutes (range, 1-9 minutes) for the debranching procedure (range, 1-9
minutes) for a conventional suture anastomosis. The 30-day mortality rate was 15% (3 of 20)
cases and 7.6% (1 of 12) in elective patients. Three patients (15%) had neurologic deficits in
conventionally-sutured anastomosis territories. No early (<30 days) occlusion occurred. At
± 9 months (range, 1-39 months), one patient with Takayasu disease showed a stenosis in the
implanted into the left common carotid artery. Stenosis in the aortic anastomosis was
was successfully treated by angioplasty and stent placement through the right brachiocephalic
Conclusions: Sutureless telescoping anastomosis with a Viabahn or a Hemobahn in
a safe and reliable alternative to sutured anastomosis. It enables safe and fast
anatomically challenging situations, and requires a very short ischemia time. Question
technique reproducibility must be addressed. (J Vasc Surg 2010;51:836-41.)

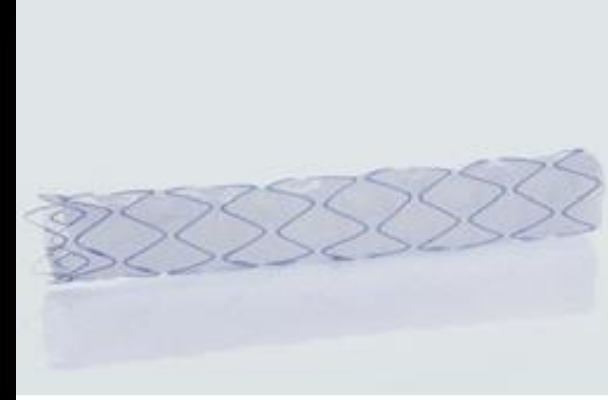
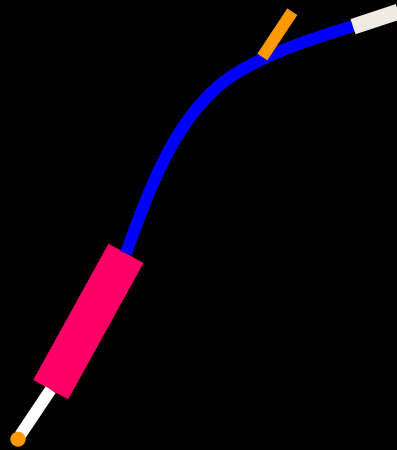


Acute type A (De Bakey 1) AD

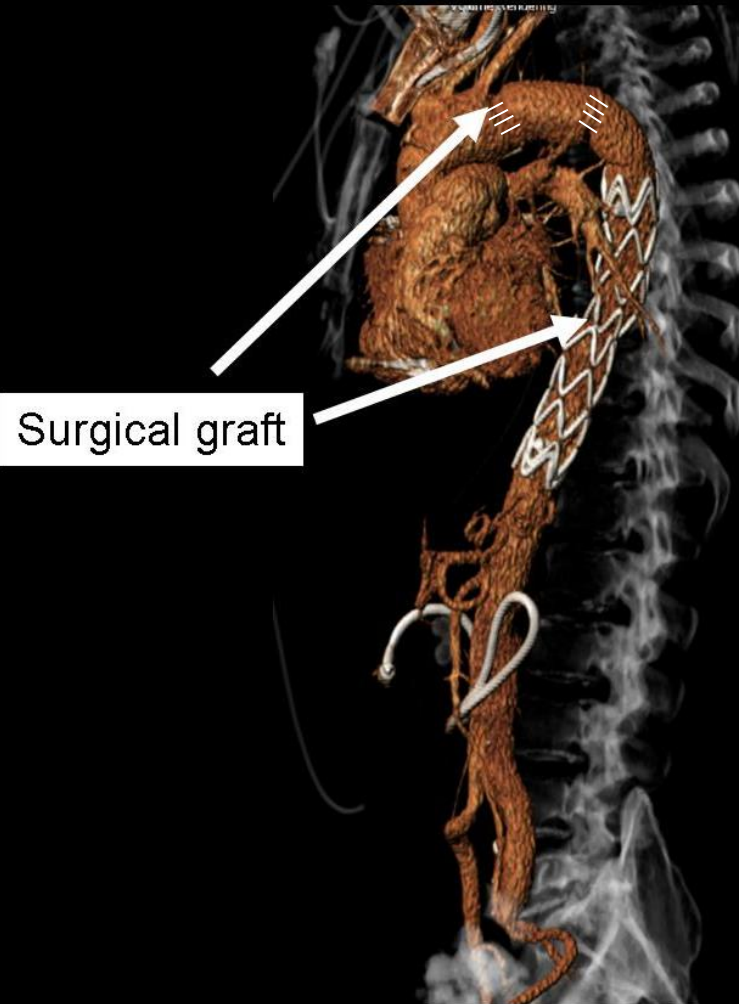
Ascending aorta replacement (2007)



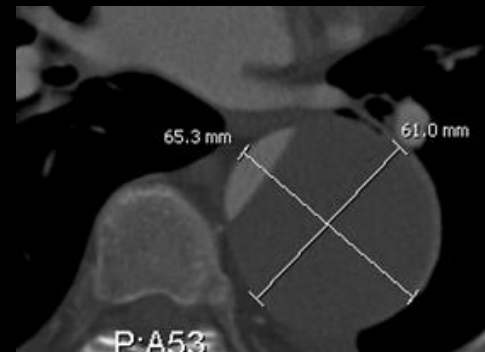
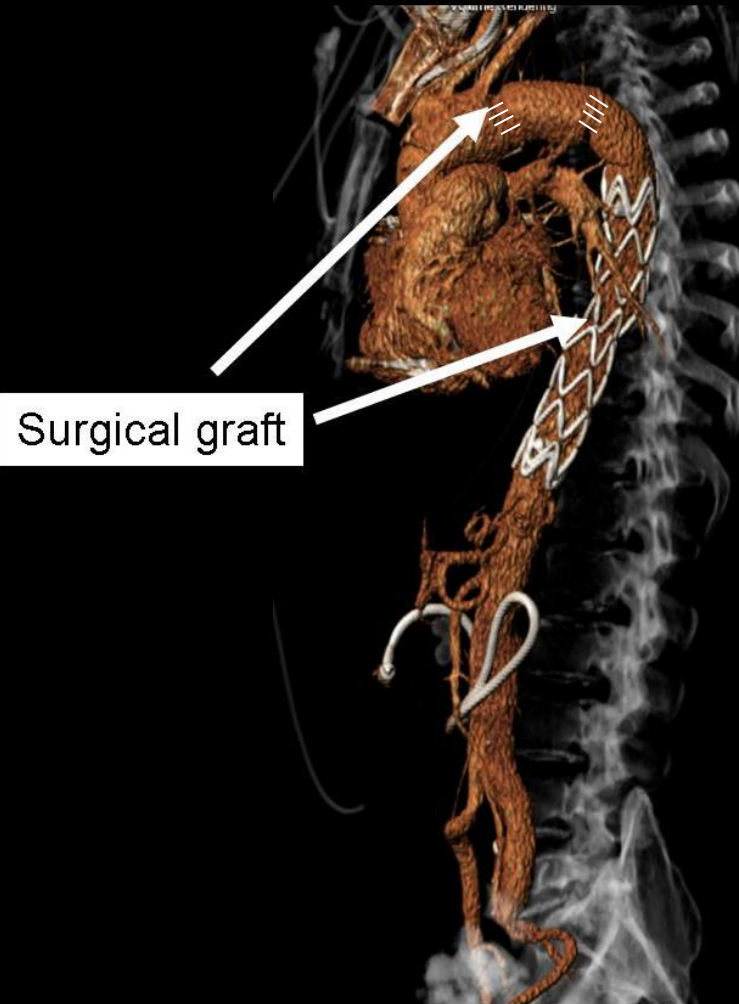
24.8.2009



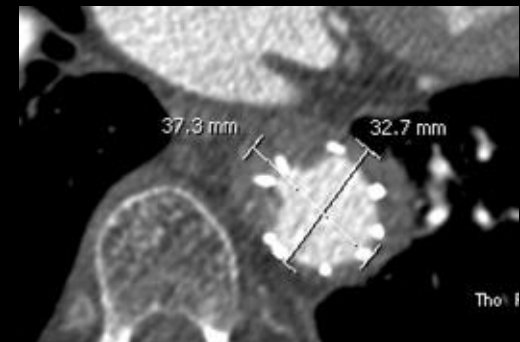
After arch repair and distal stentless
telescoping aortic anastomosis



After arch repair and distal stentless
telescoping aortic anastomosis



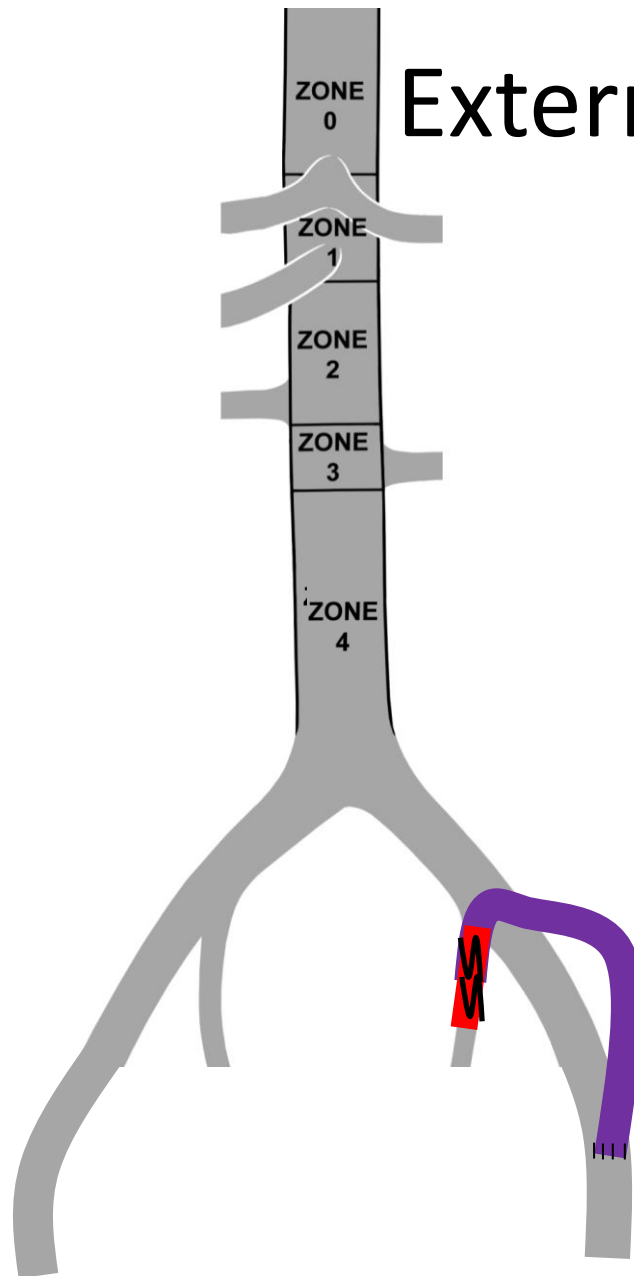
26 months FUP

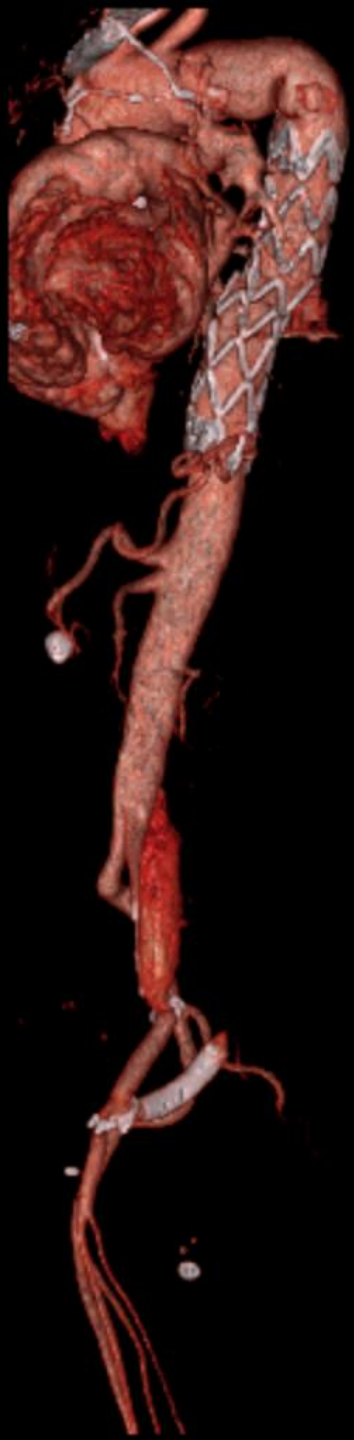


Management of distal tear

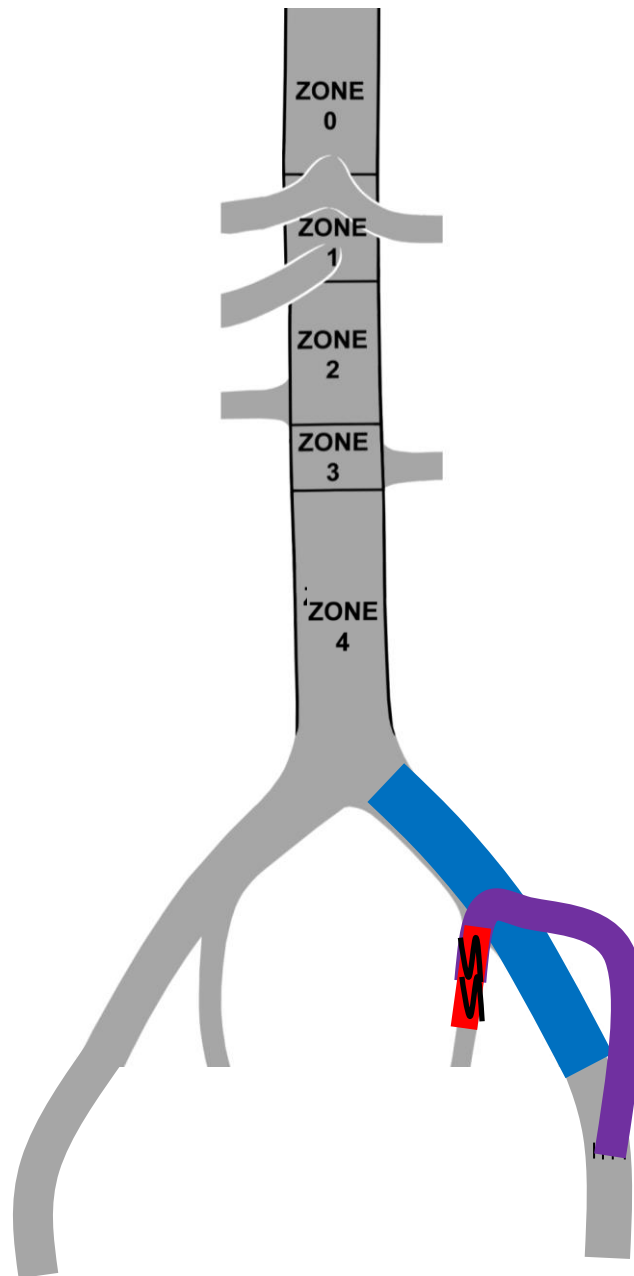


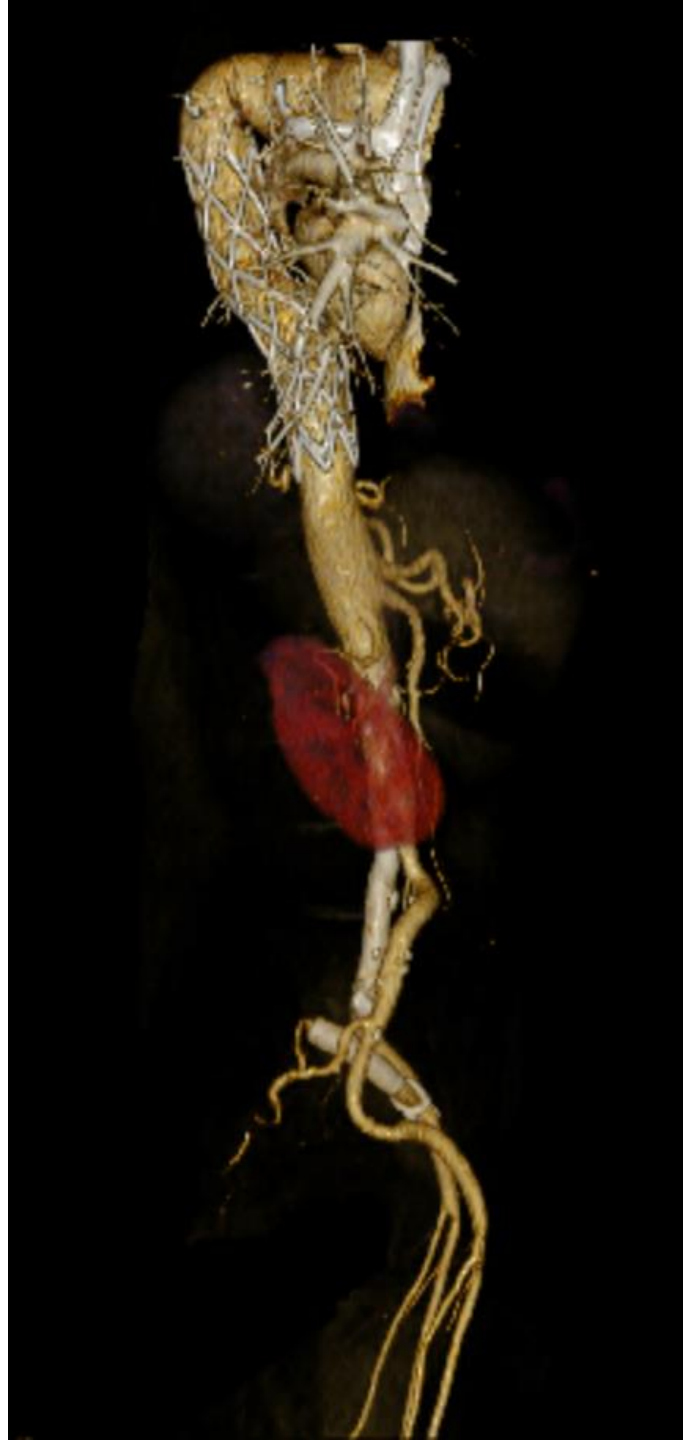
Externa-Interna bypass VORTEC



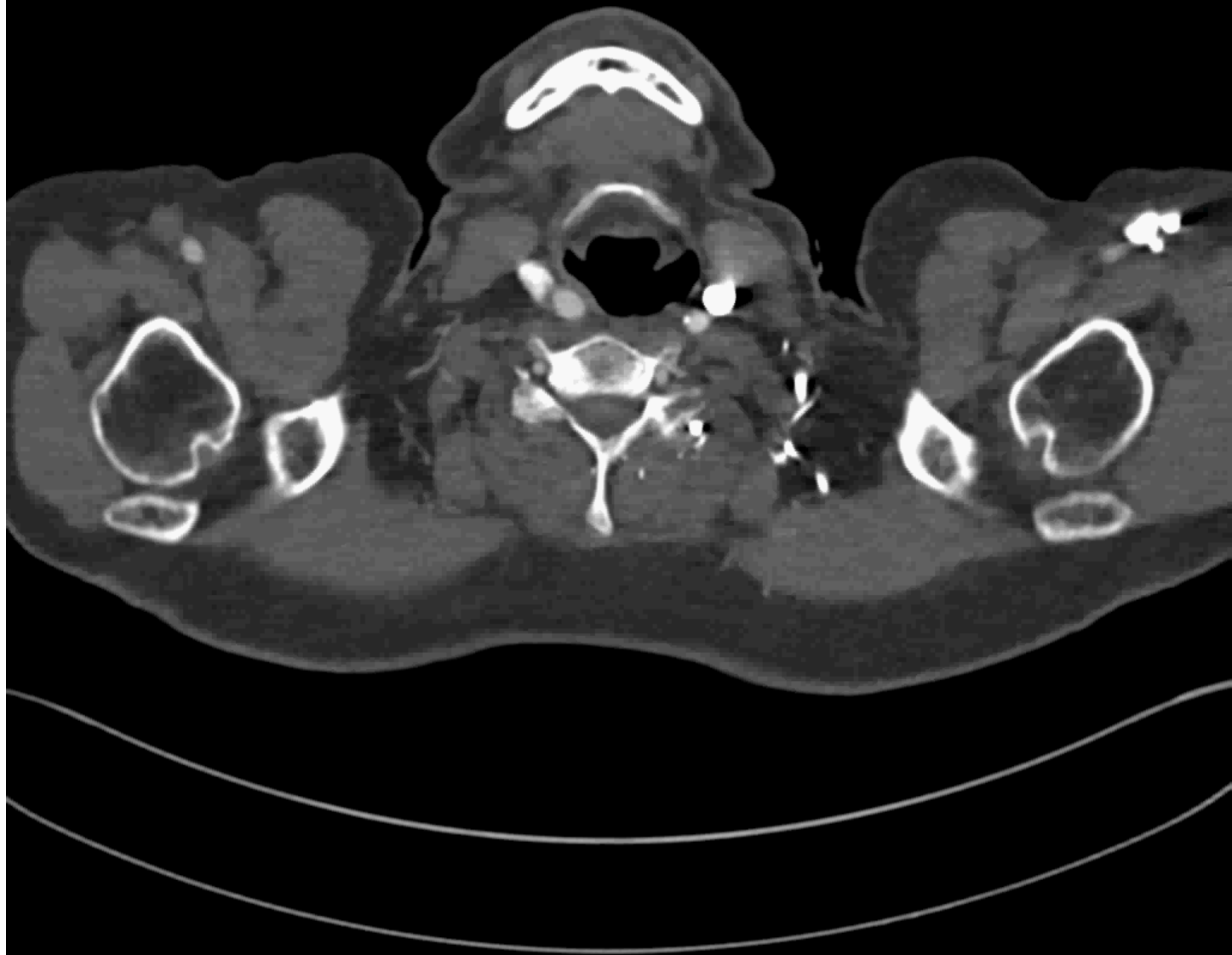


Tear exclusion SG EIA-CIA





5 years FUP
(6.6.2014)

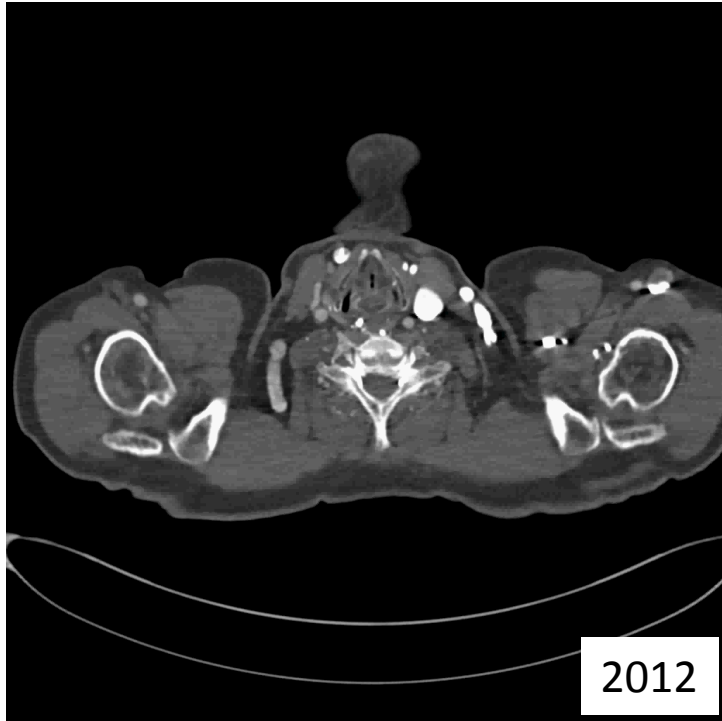


OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



- Chronic type A (DeBakey I) AD
- 2000: Composite graft & ½ Arch
 - CV and RV Malperfusion
 - Stroke, epilepsy
 - Bowel shortening
 - Acute/Chronic renal failure
- **2009: decline surgery**
 - Lost to follow-up

OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



- Chronic type A (DeBakey I) AD
- 2000: Composite graft & ½ Arch
 - CV and RV Malperfusion
 - Stroke, epilepsy
 - Bowel shortening
 - Acute/Chronic renal failure
- **2012: Symptomatic TAAA**
 - Descending max TDM 92mm

OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



- Chronic type A (DeBakey I) AD
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- **2012: «Symptomatic TAAA»**
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OPEN AND ENDOVASCULAR SA & RV DEBRANCHING

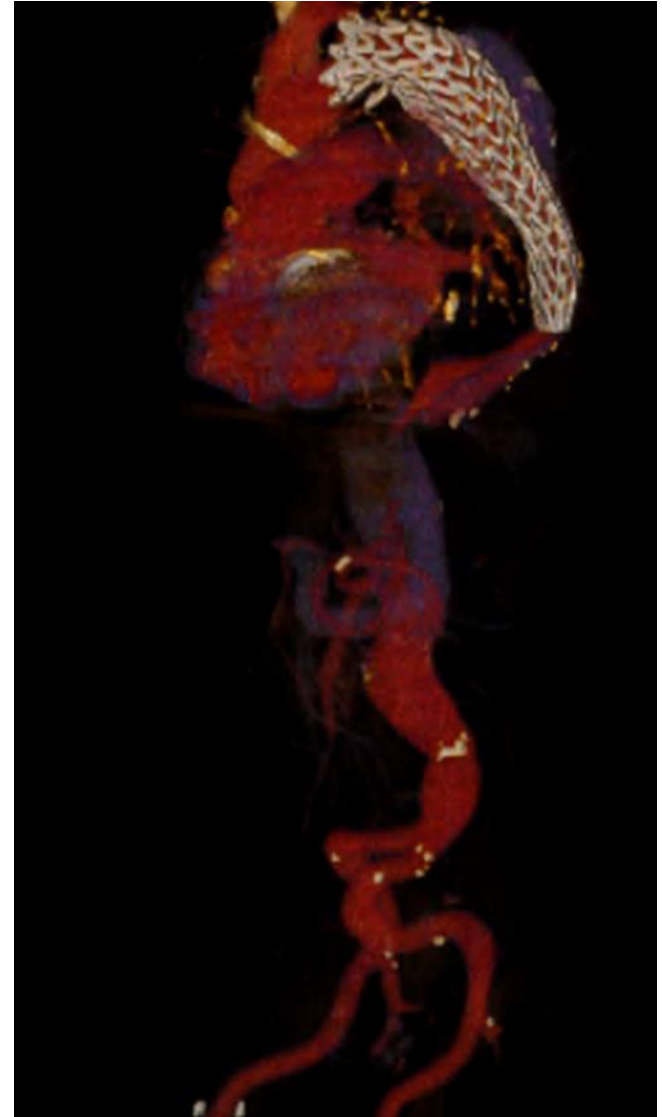


Sympt TAAA

OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



Asympt TAAA



OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



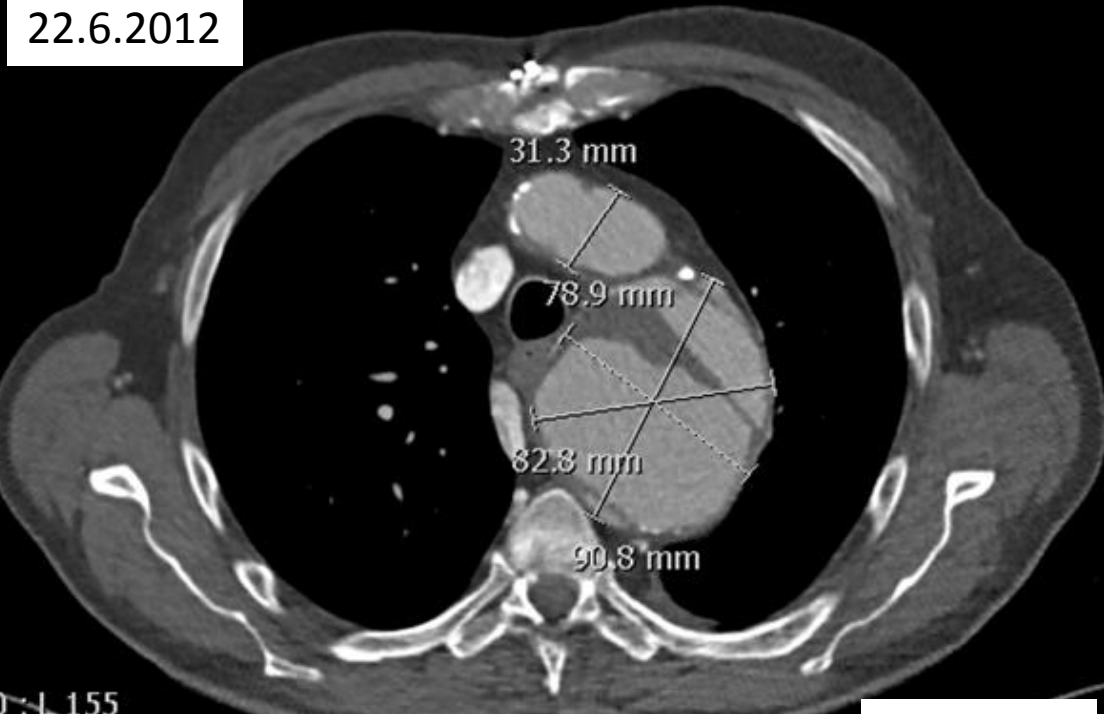
OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



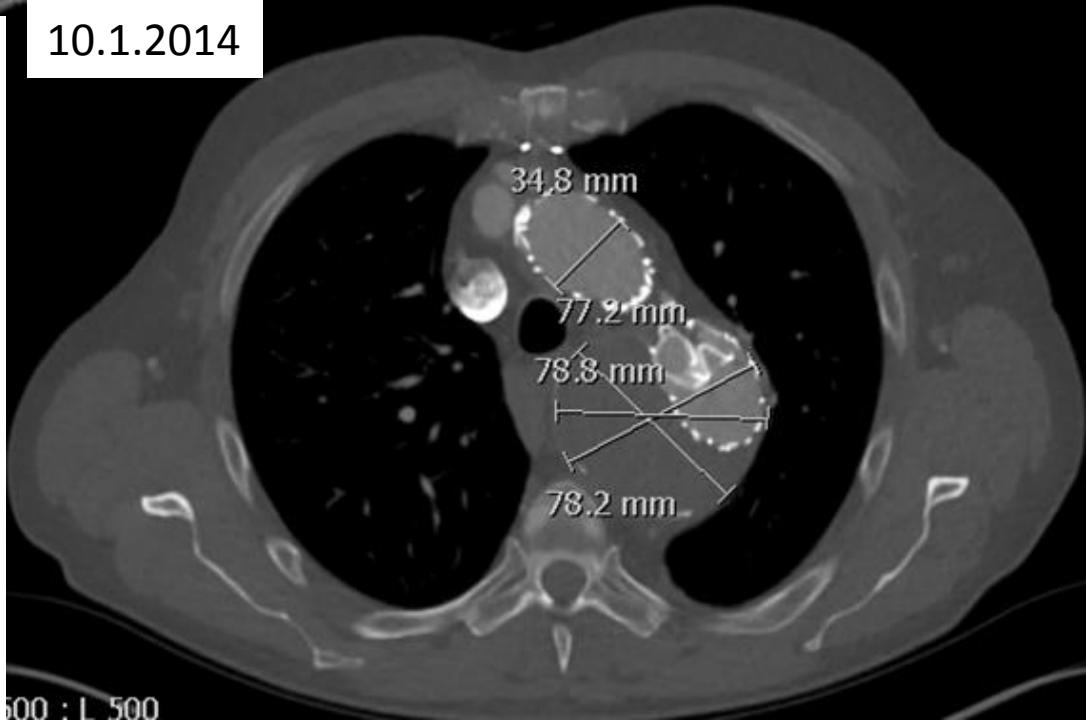
OPEN AND ENDOVASCULAR SA & RV DEBRANCHING

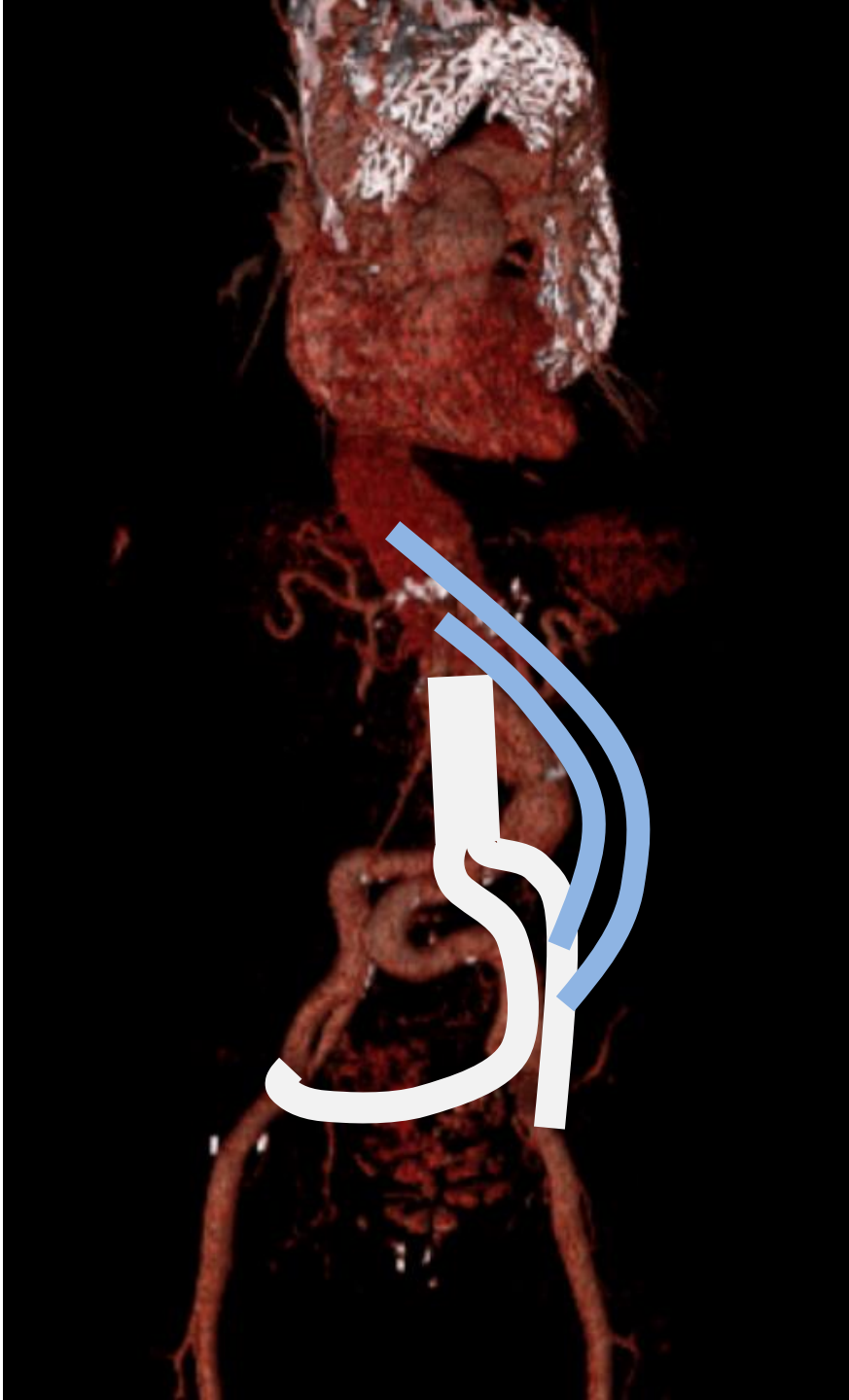


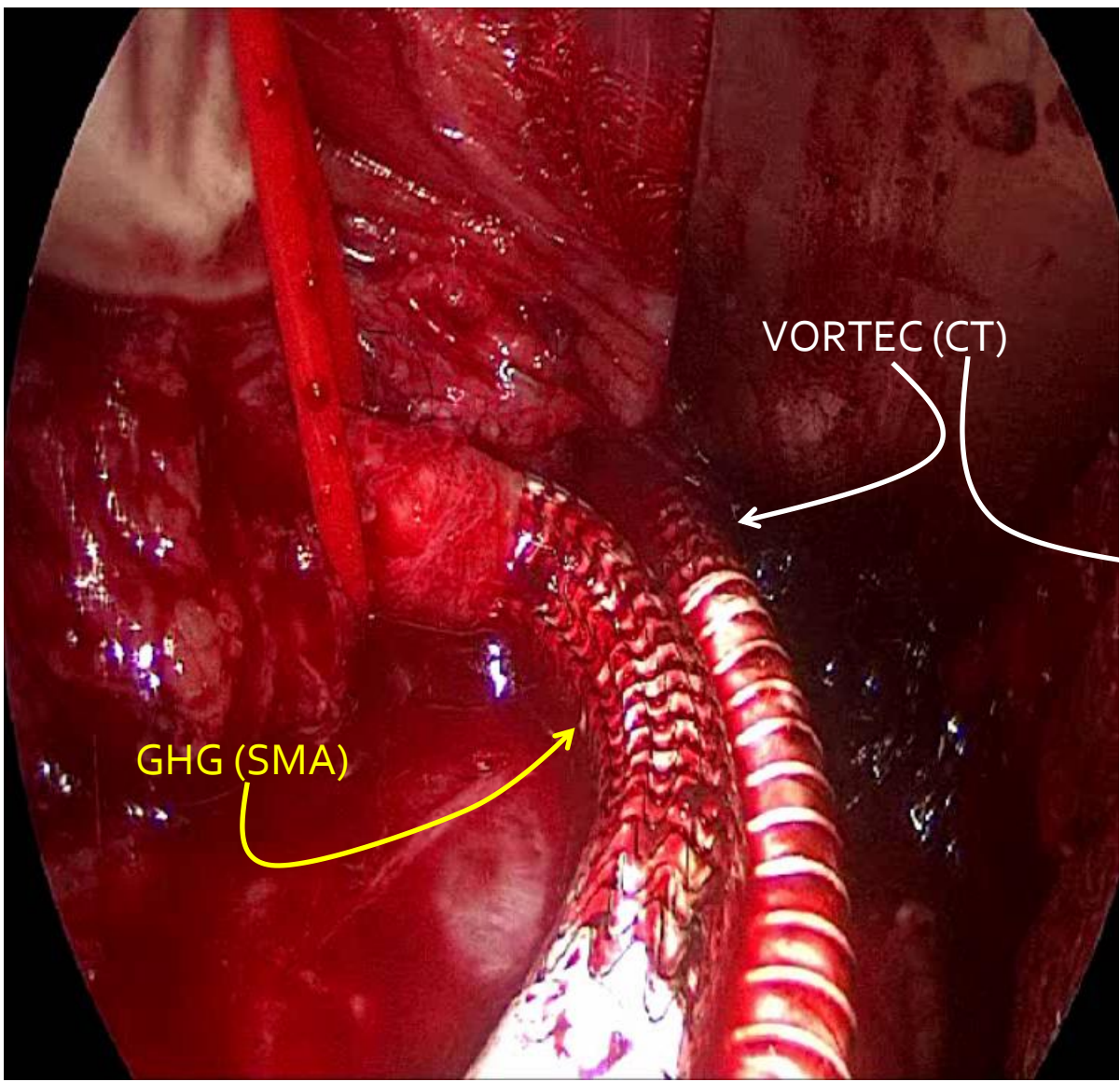
22.6.2012



10.1.2014

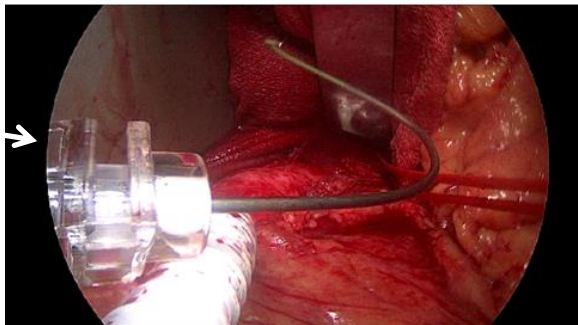




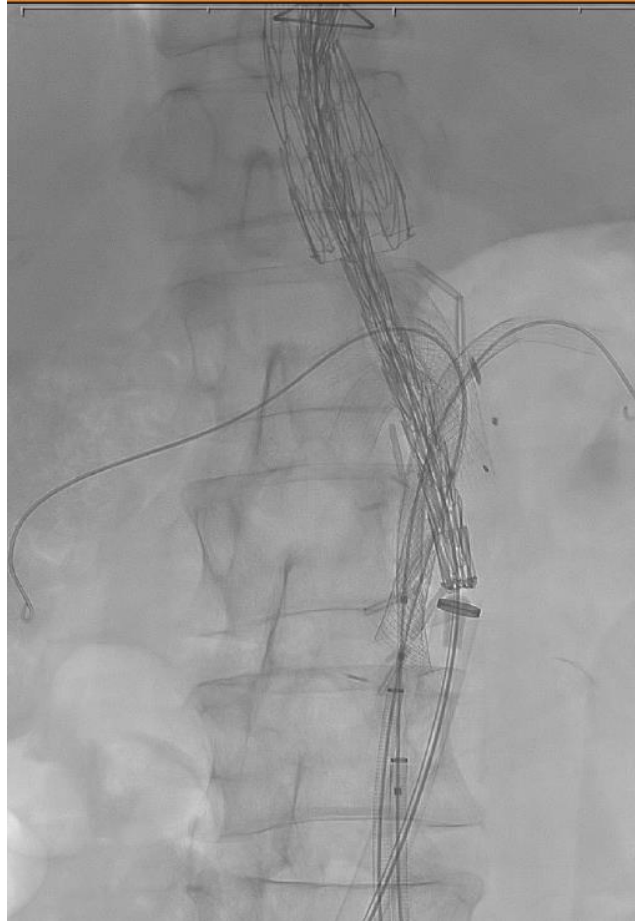


Full midline laparotomy

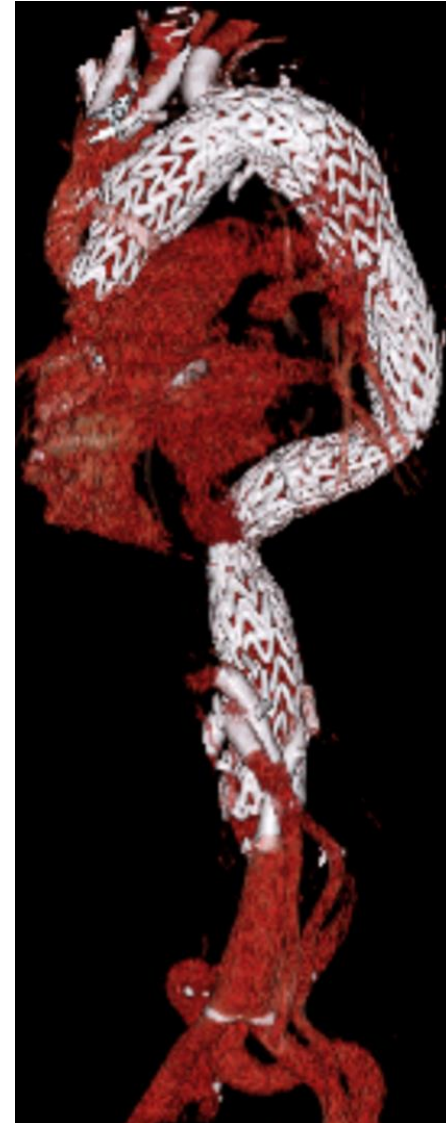
Bending the needle

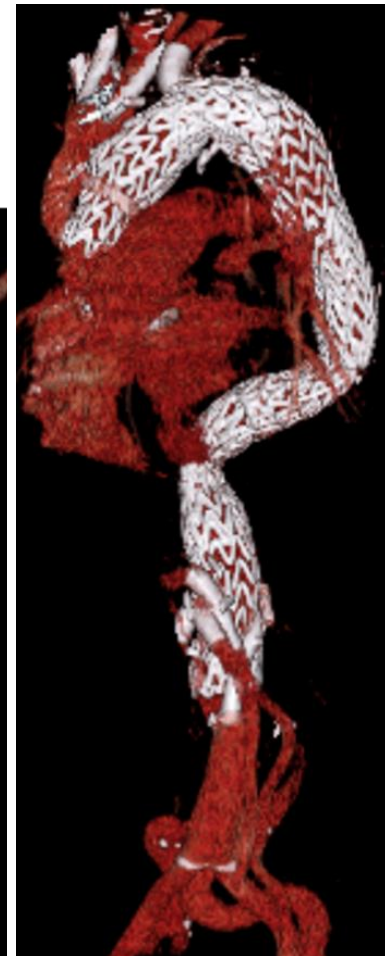
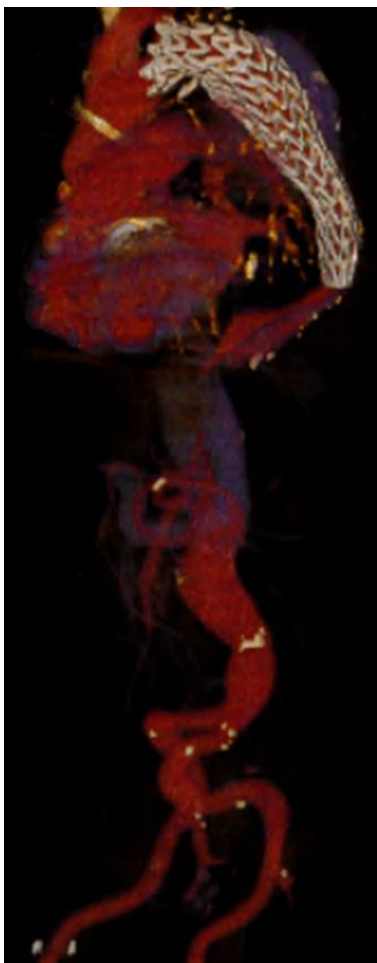


OPEN AND ENDOVASCULAR SA & RV DEBRANCHING



OPEN AND ENDOVASCULAR SA & RV DEBRANCHING





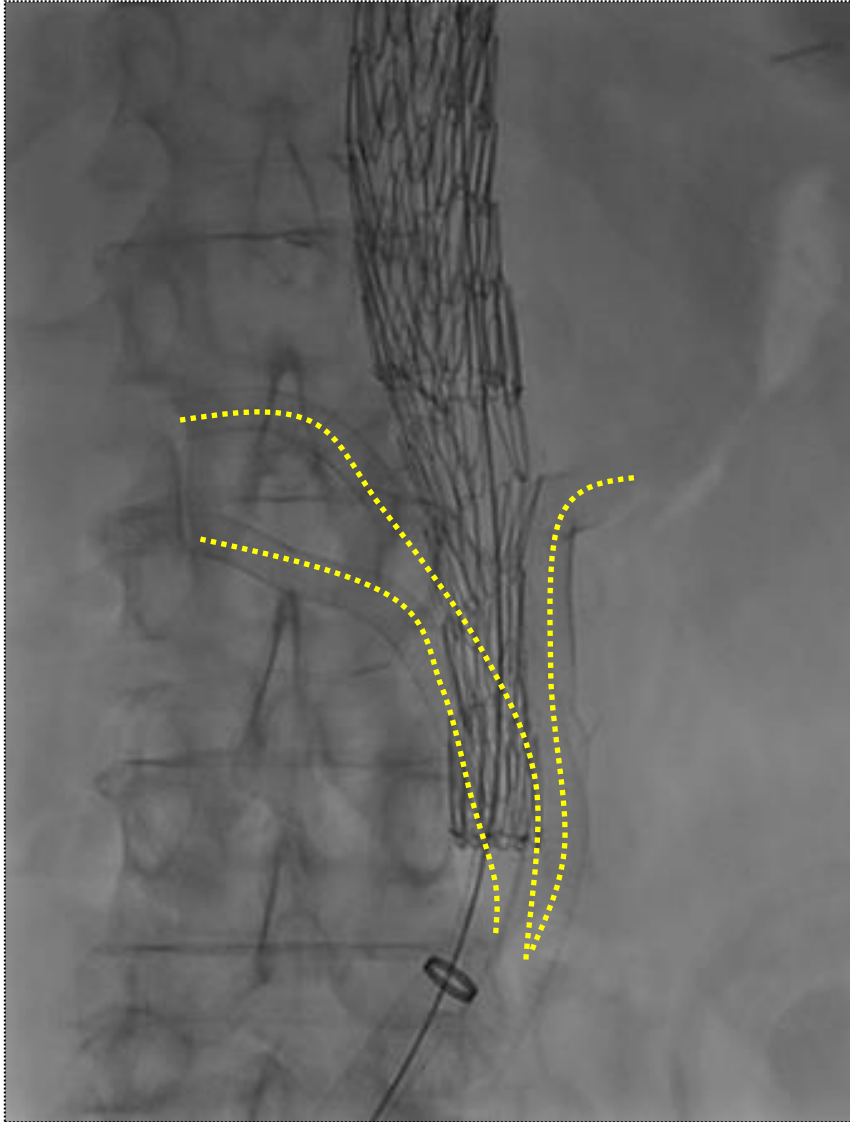
TRJ 1943



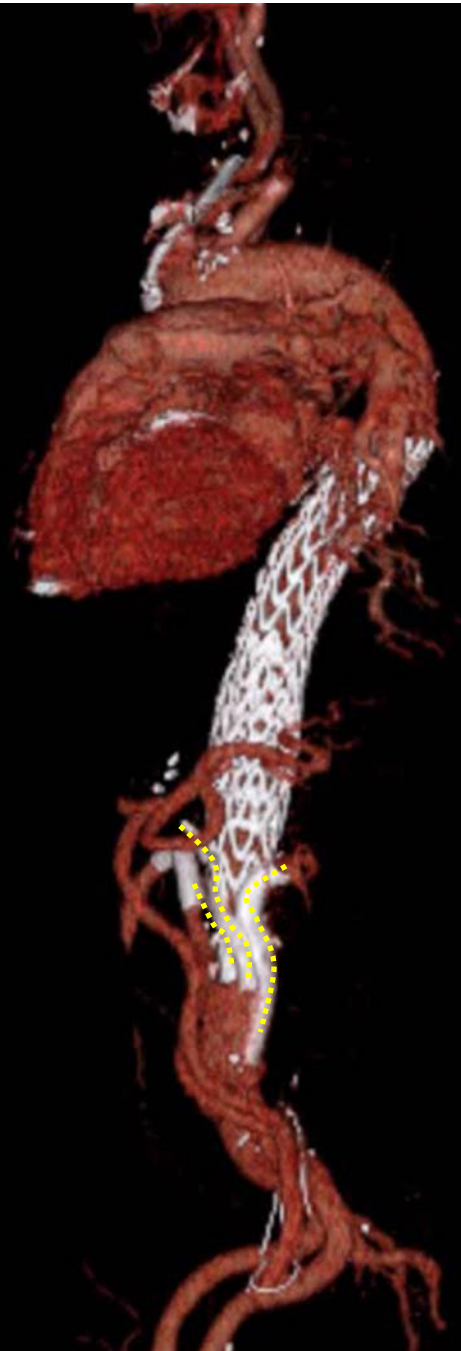
- Chronic type A (DeBakey I) AD
- 1997: Ascending & hemiarch
- 2005: composite graft & arch replacement
- **Symptomatic TAAA**
 - Visceral aorta max DM 60mm



- Infrarenal Y graft
- Visceral debranching
 - SMA VORTEC
 - TC conventional



- Infrarenal Y graft
- Visceral debranching
 - SMA VORTEC
- TAAA EVAR
 - Renal periscopes (3)

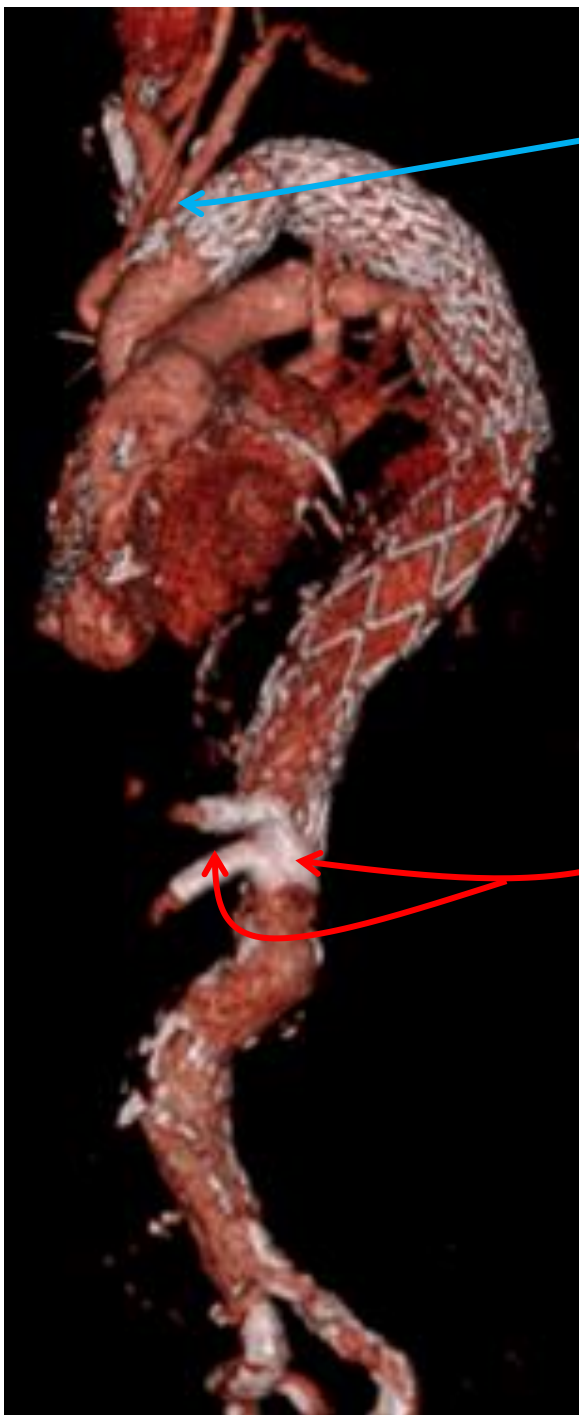


- Infrarenal Y graft
- Visceral debranching
 - SMA VORTEC
- TAAA EVAR
 - Renal periscopes (3)

9 months FUP (Mai 2013)



22 months FUP (juni 2014)



debranching

chimney

periscope

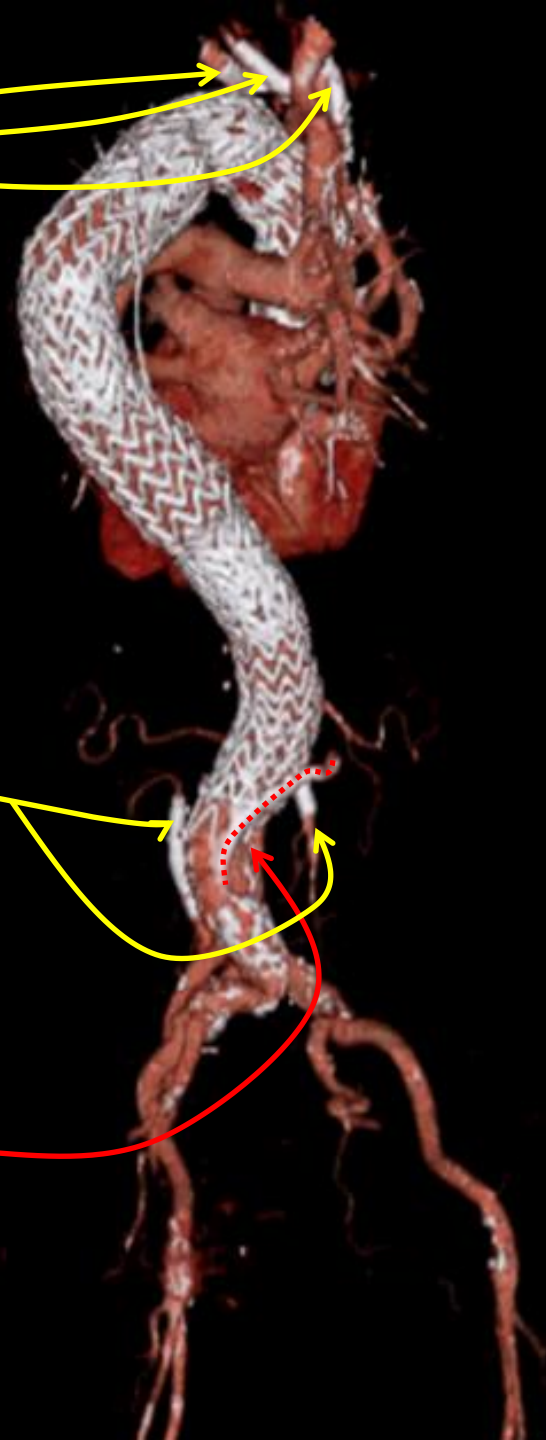




VORTEC

VORTEC

Periscope



Rationale for ≥ 2 procedures

- Reduce complexity of
 - Open surgery (HR)
 - (T)EVAR
- Renal protection
 - reduce amount of contrast (EVAR)
- «Reduces risk of paraplegia»

Results

- 36 patients
 - 15 PRAA, 11 TAAA, 4 Descending
 - 6 A&V
 - 5 B-Dissection
- 30d results
 - mortality: 3 deaths (9%)
 - 2x intestinal 1x respiratory and MOF
 - 1x B-dissection

Conclusion

- Hybrid Repair allows treating complexe aortic dissection
 - Unfortunately still quite invasive procedure
 - VORTEC and Gore Hybrid Graft facilitate challenging anastomosis
- Combined open/endovascular debranching
 - Promising new option
 - Allows staging complex aortic surgery
 - Allows adresssing patients unfit for open surgery or EVAR
 - Reduces invasiveness of open surgery and complexity of EVAR

Limitations

- Diseased arch and branches

