CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE
CONTROVERSIES & UPDATES IN VASCULAR SURGERY
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MARRIOTT RIVE GAUCHE & CONFERENCE CENTER PARIS, FRANCE

Hybrid techniques for the arch: are they effective and durable?

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

Speaker Fees, Research Grant or Consulting: Abbott; Bolton; Gore; Medtronic.

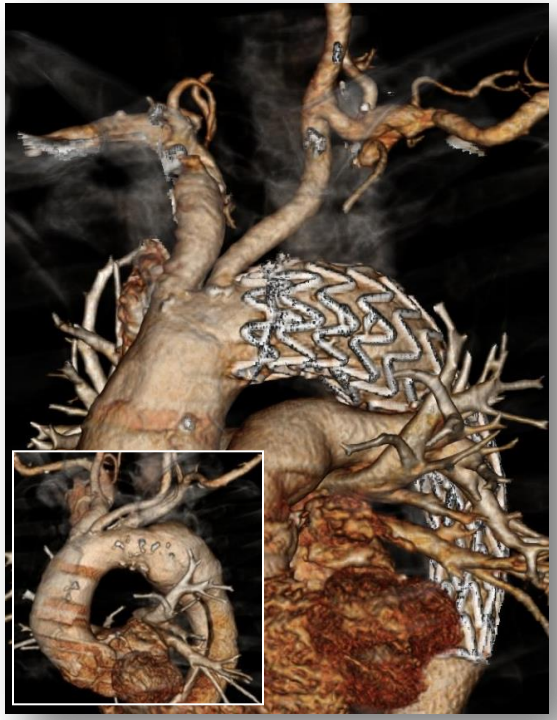
Background

What is the best approach to the aortic arch is currently debated

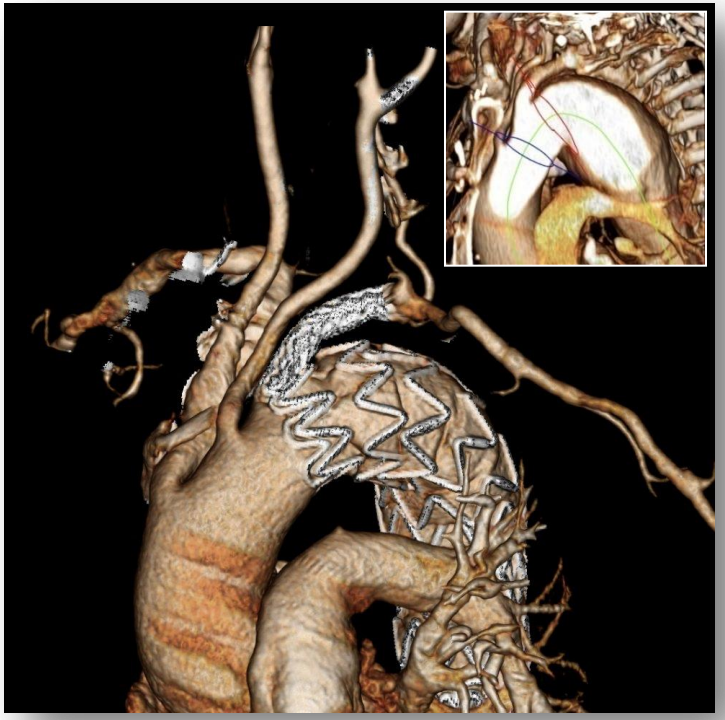
New technologies…

Debranching technique (Zone 2)

Landing zone 2 (n=51)



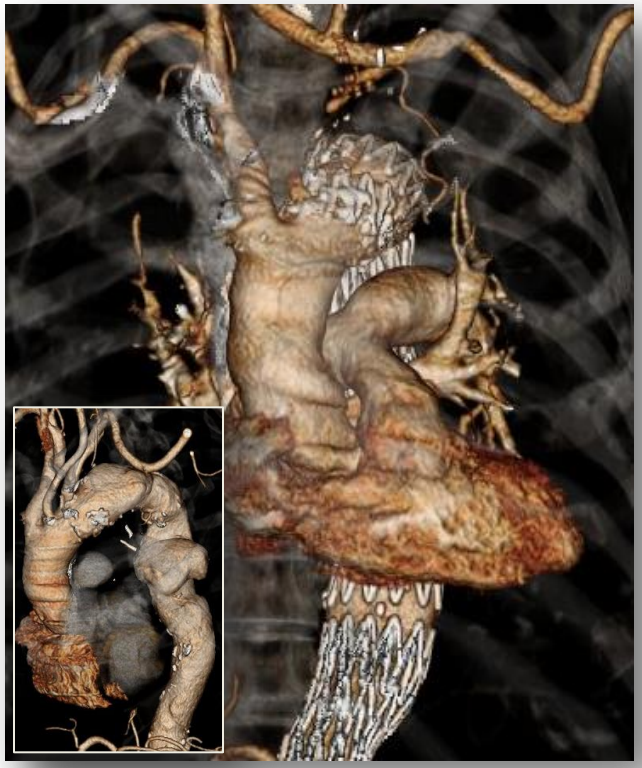
Car – Subcl BP



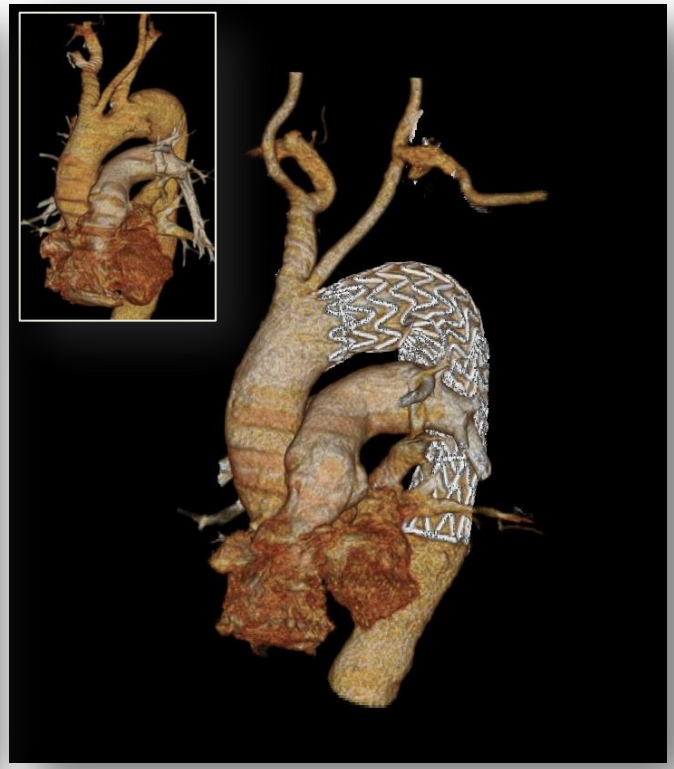
Chimney on LSA

Debranching technique (Zone 1)

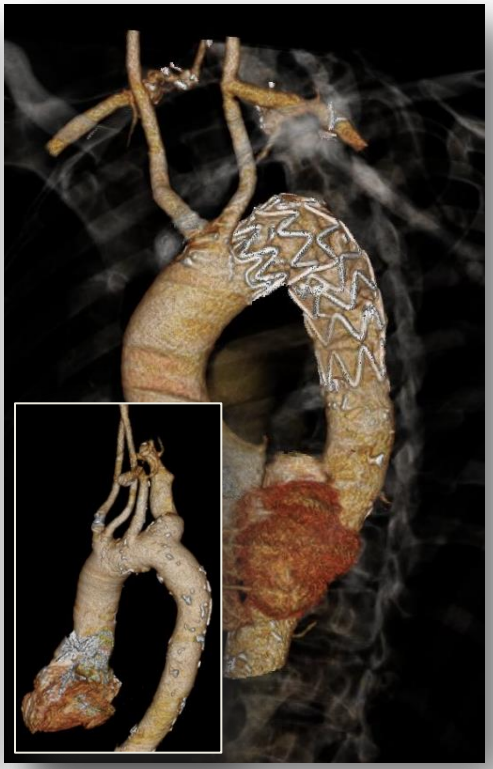
Landing zone 1 (n=60)



Car – Car – Subcl BP



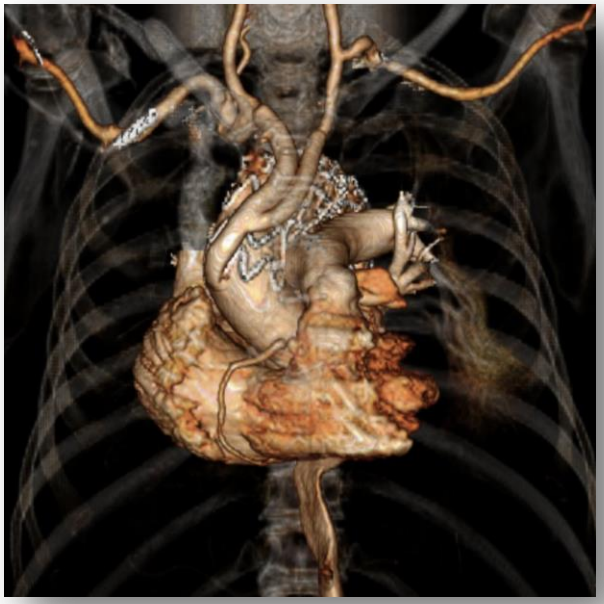
Car – Subcl BP (Bovine Arch)



Bilateral Car – Subcl BP (Lusoria aneurysm)

Debranching technique (Zone 0)

Landing zone 0 (n=25)



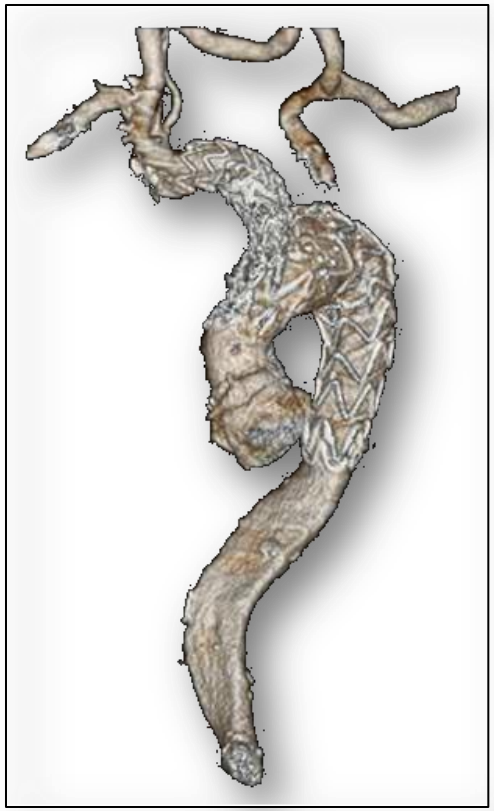
Total Debranching

Single Chimney +
Car – car – subcl BP

Triple Chimney

Debranching technique (Zone 0)

Landing zone 0 (n=25)



Single Branched +
Car – car – subcl BP

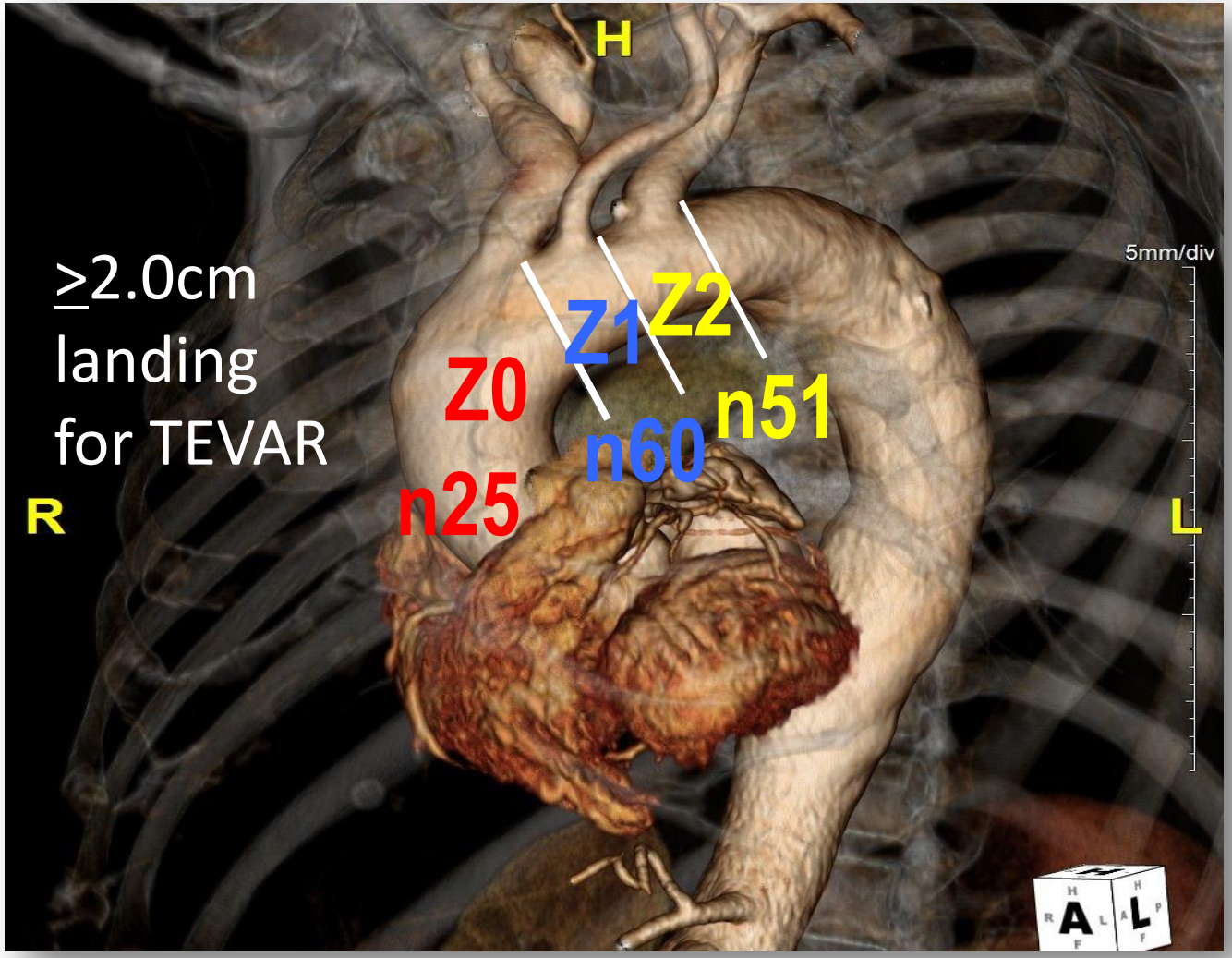
Double Branched +
Car – subcl BP

Roma – Perugia Experience

2005 – 01/2014

136 patients

Landing zone distribution in 136 patients



Roma – Perugia Experience

2005 – 01/2014

136 patients

Perioperative outcomes (30-day)	N	(%)
Mortality	7	**5.1**
Stroke	4	**2.9**
Spinal cord ischemia	3	**2.2**
Type I Endoleak • 4/5 chimney procedures	5	**3.6**

Retrograde Type A dissection
• 4 within 10 days:
  • 2 fatal
  • 2 successfully treated @10 days
• 1 intraoperative (successfully treated)
	5	**3.6**

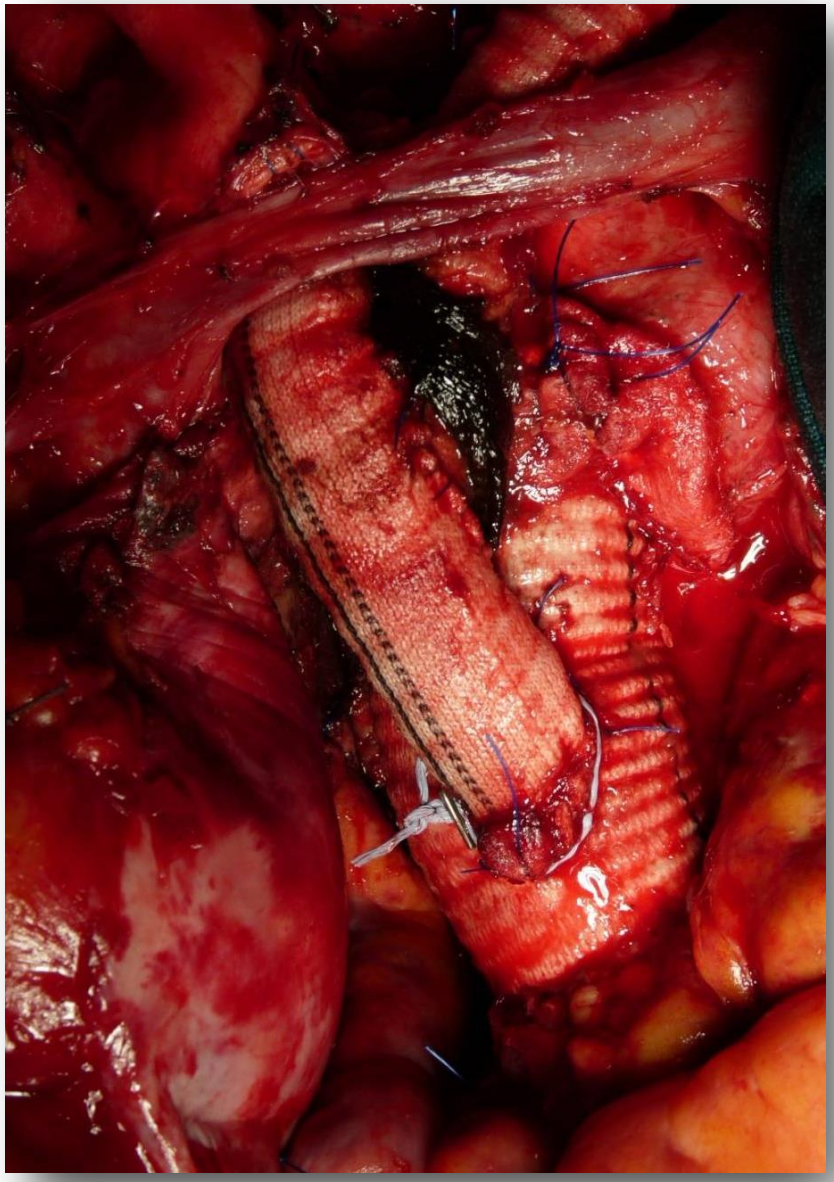
Intraoperative complications

RETROGRADE DISSECTION

Intraoperative Type A dissection during total debranching for post Type B dissection aneurysm (hypertensive crisis)

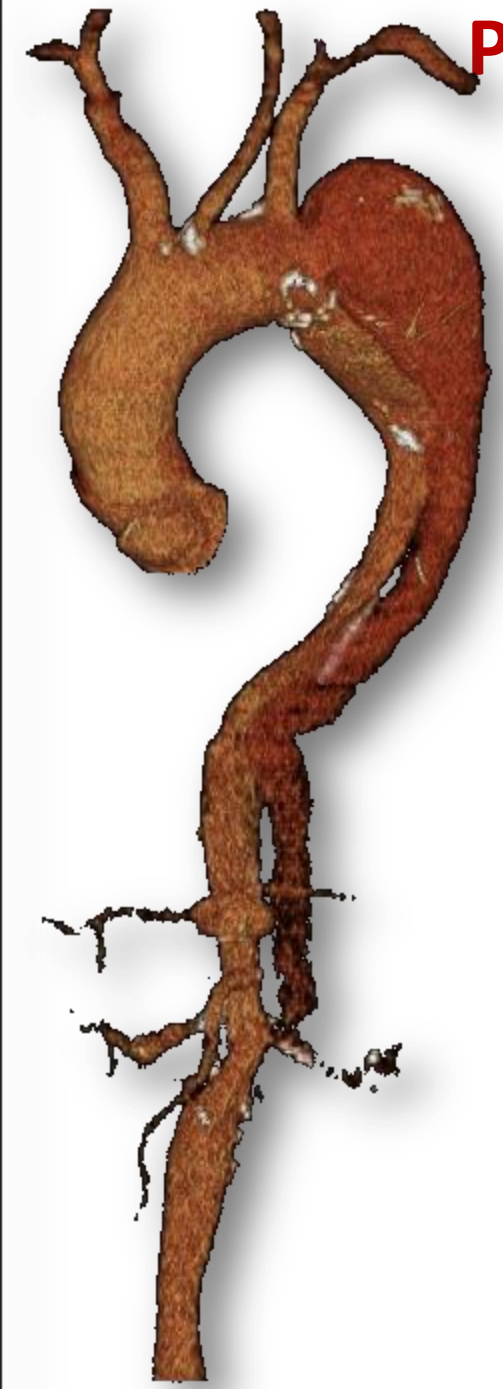
Ascending aorta replacement

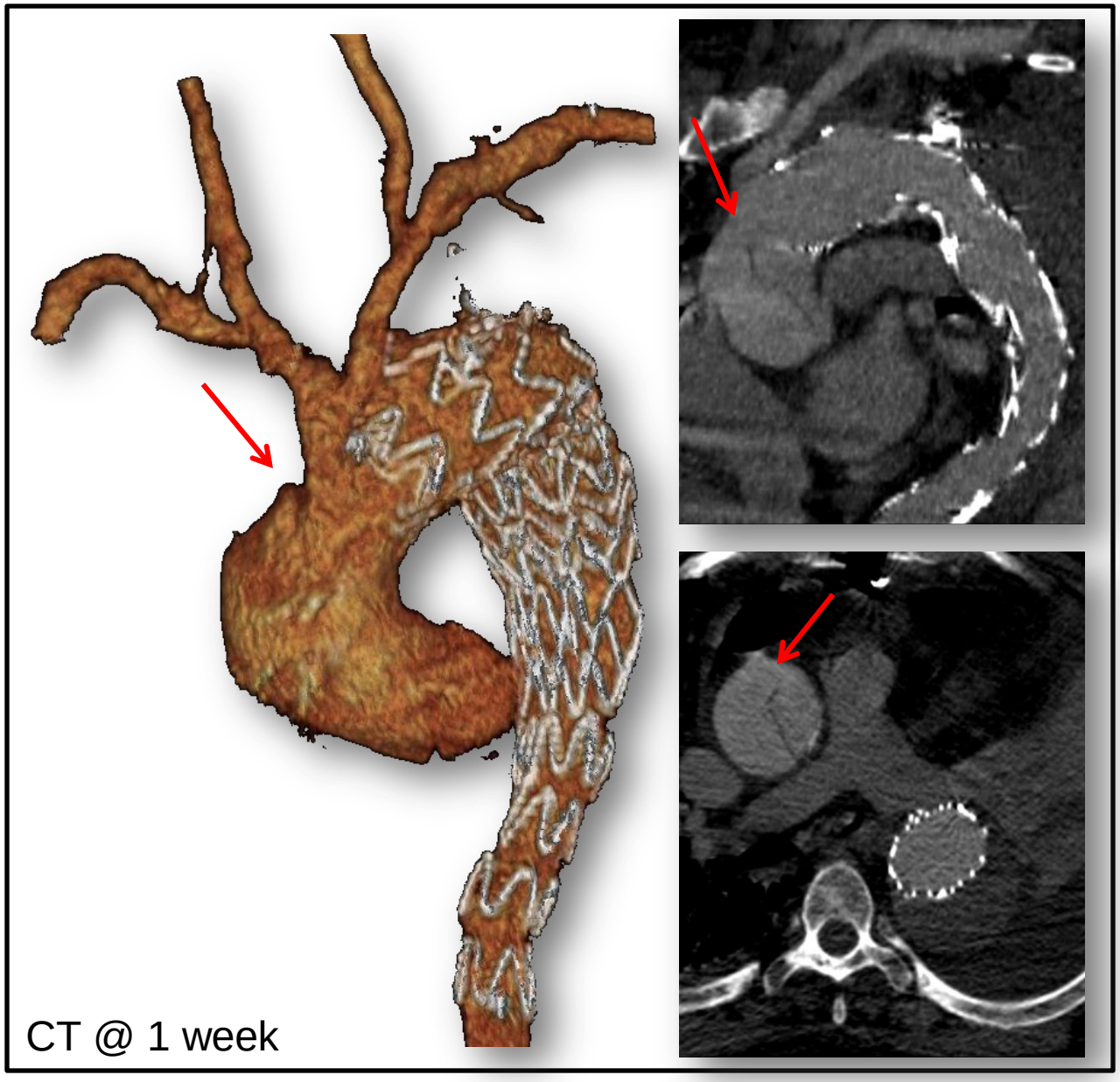
Total debranching

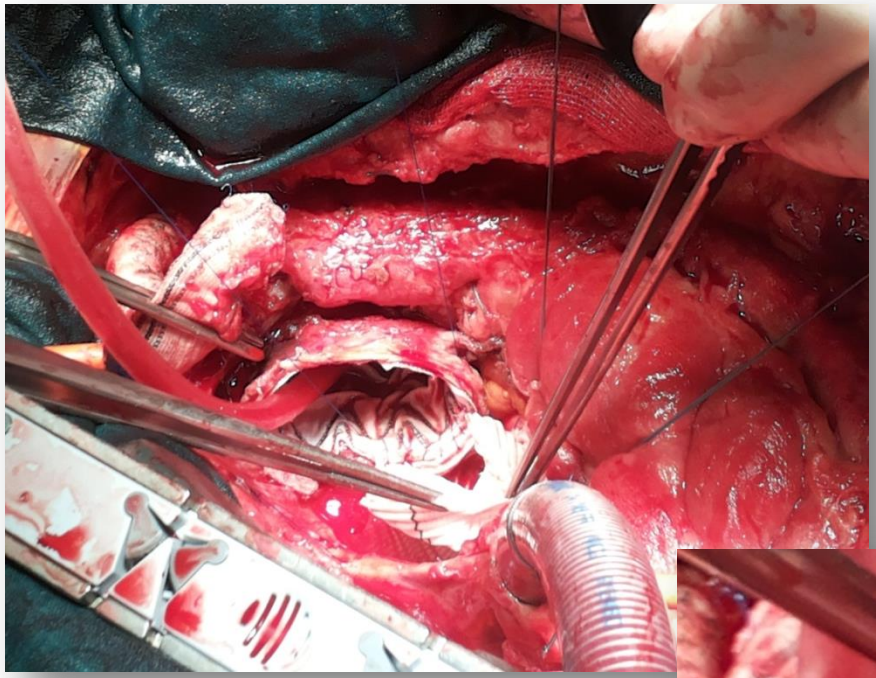


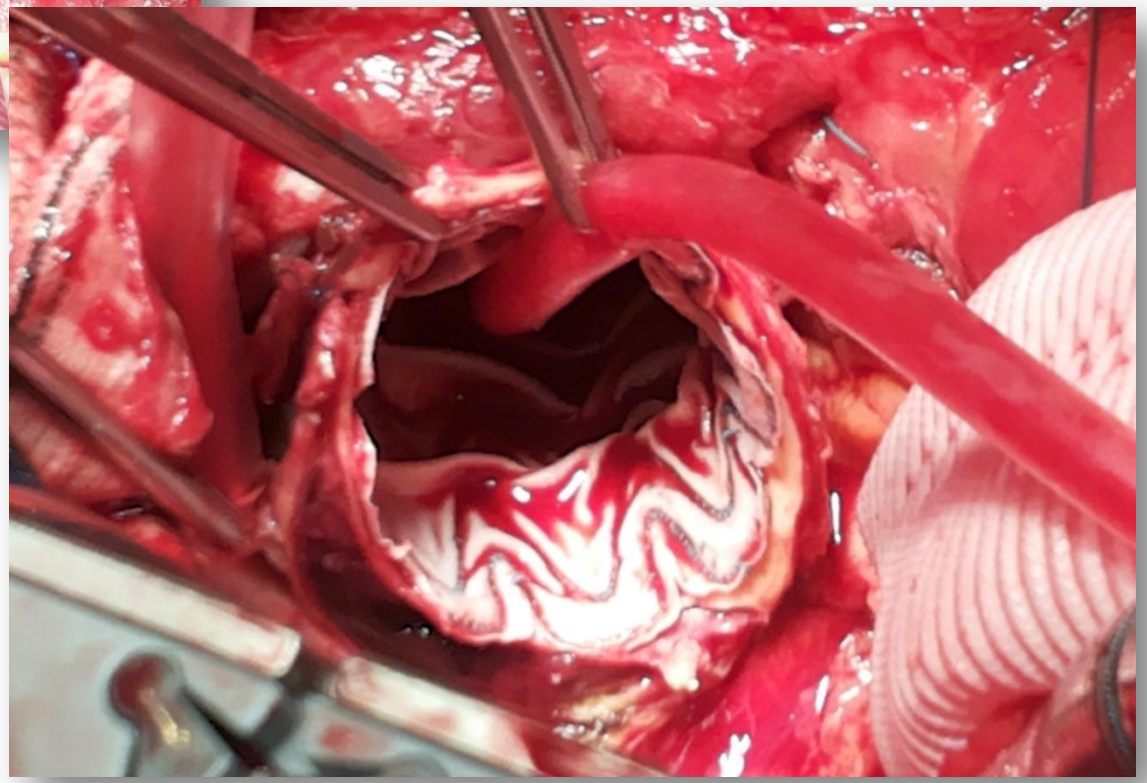
Perioperative complications

RETROGRADE DISSECTION



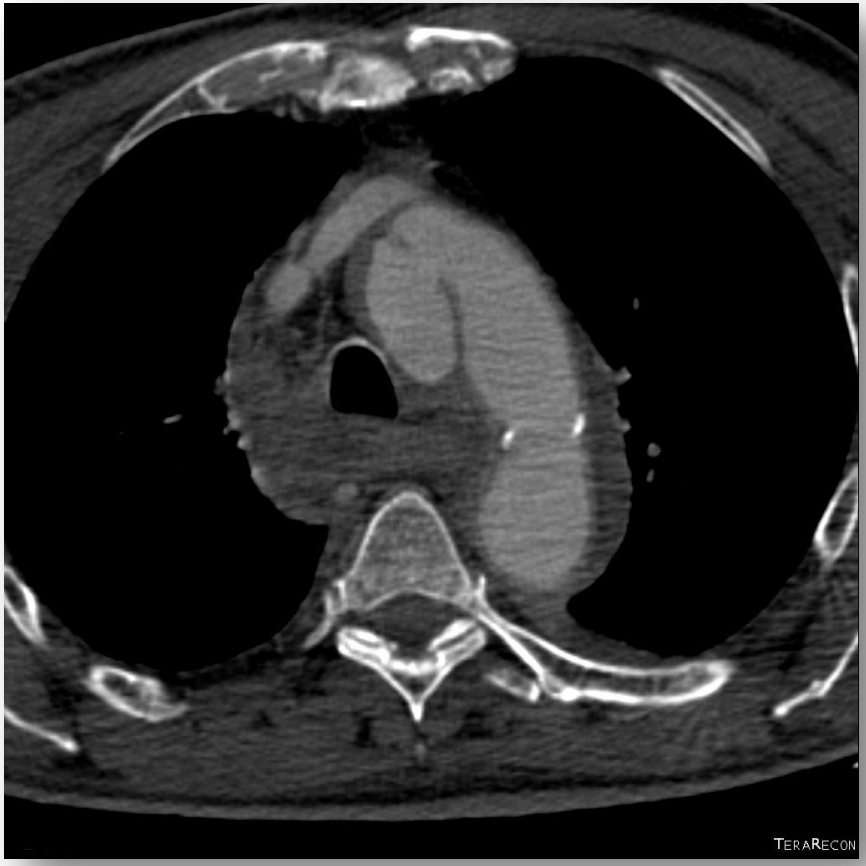






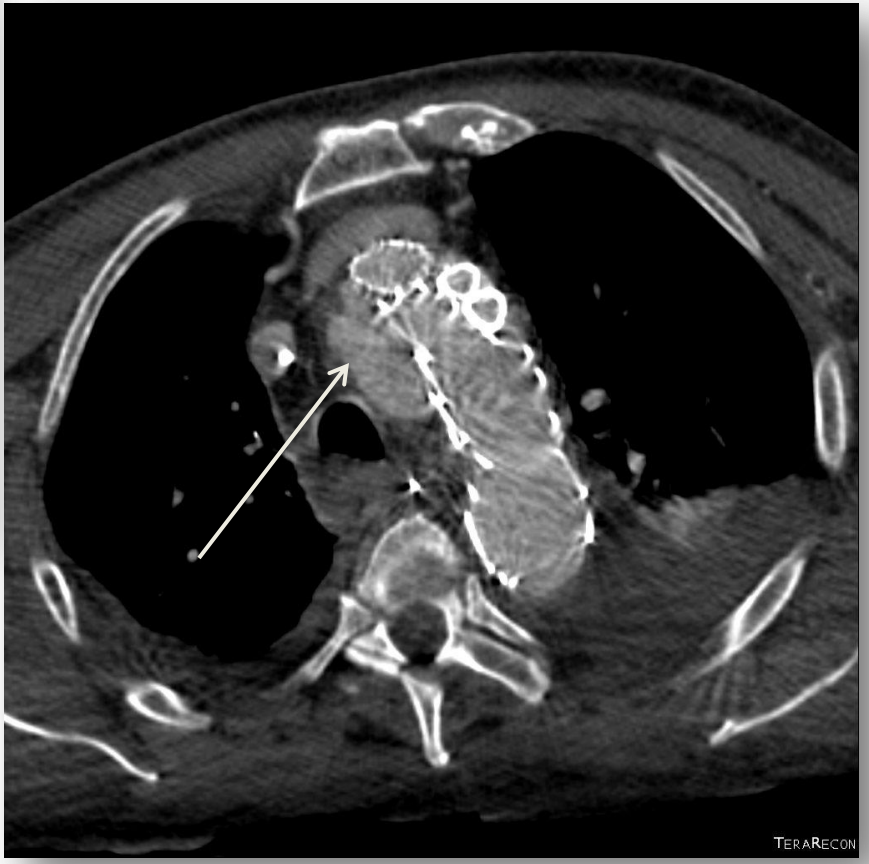
Perioperative complications

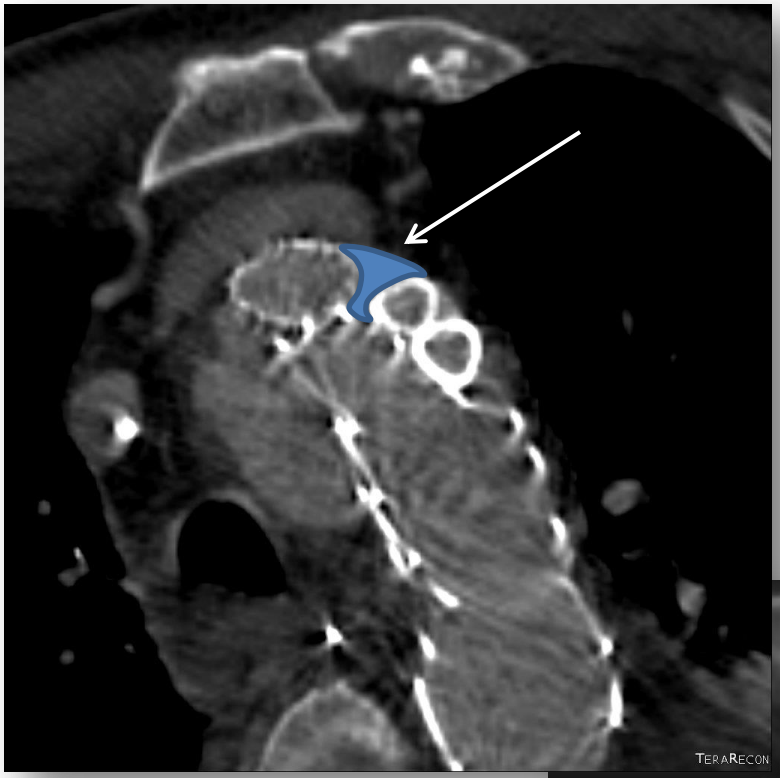
TYPE I ENDOLEAK *in triple chimney*

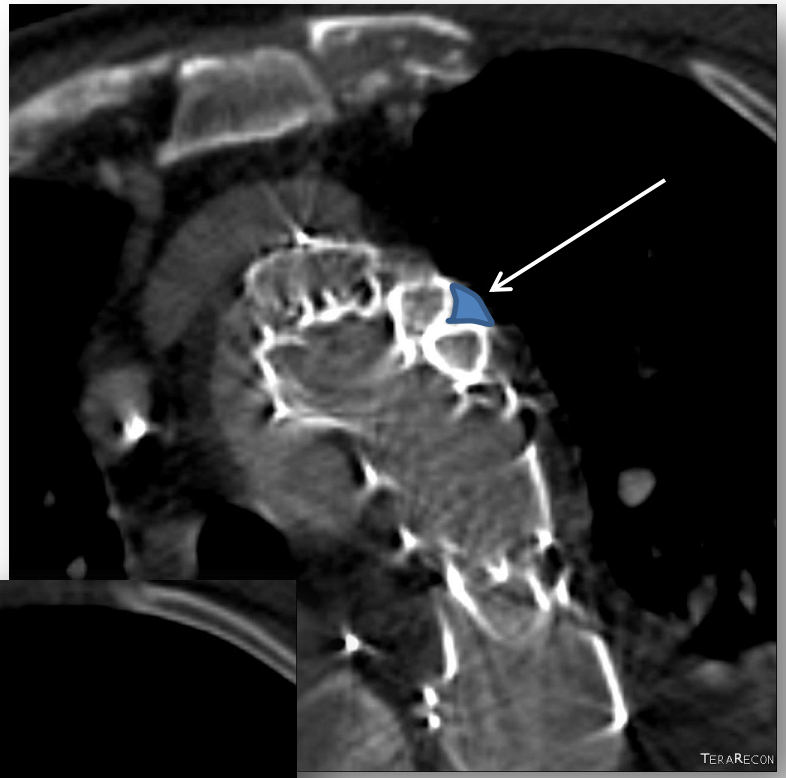


Post traumatic
arch dissection

Proximal type I endoleak
after total chimney




TeraRecon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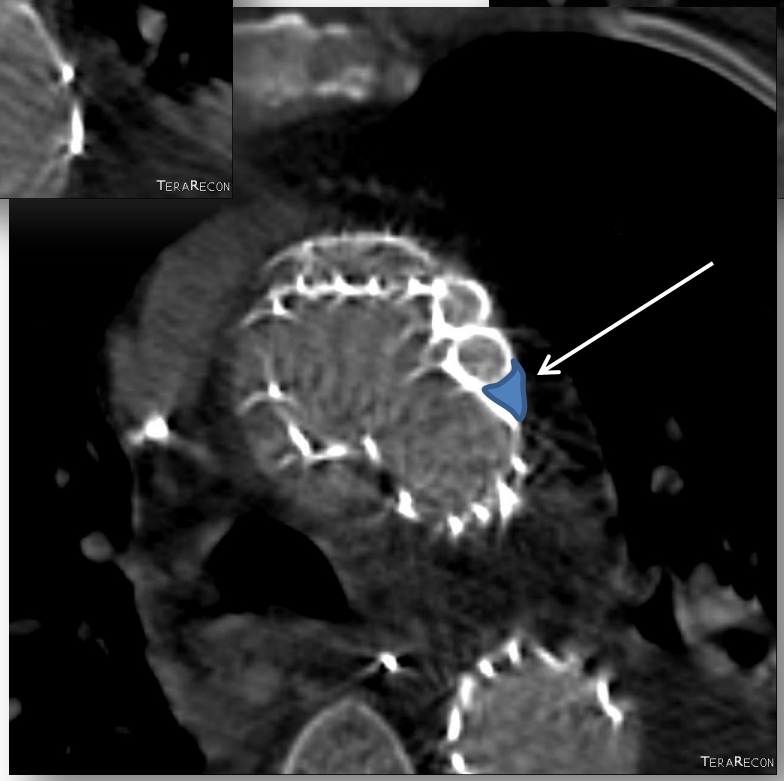
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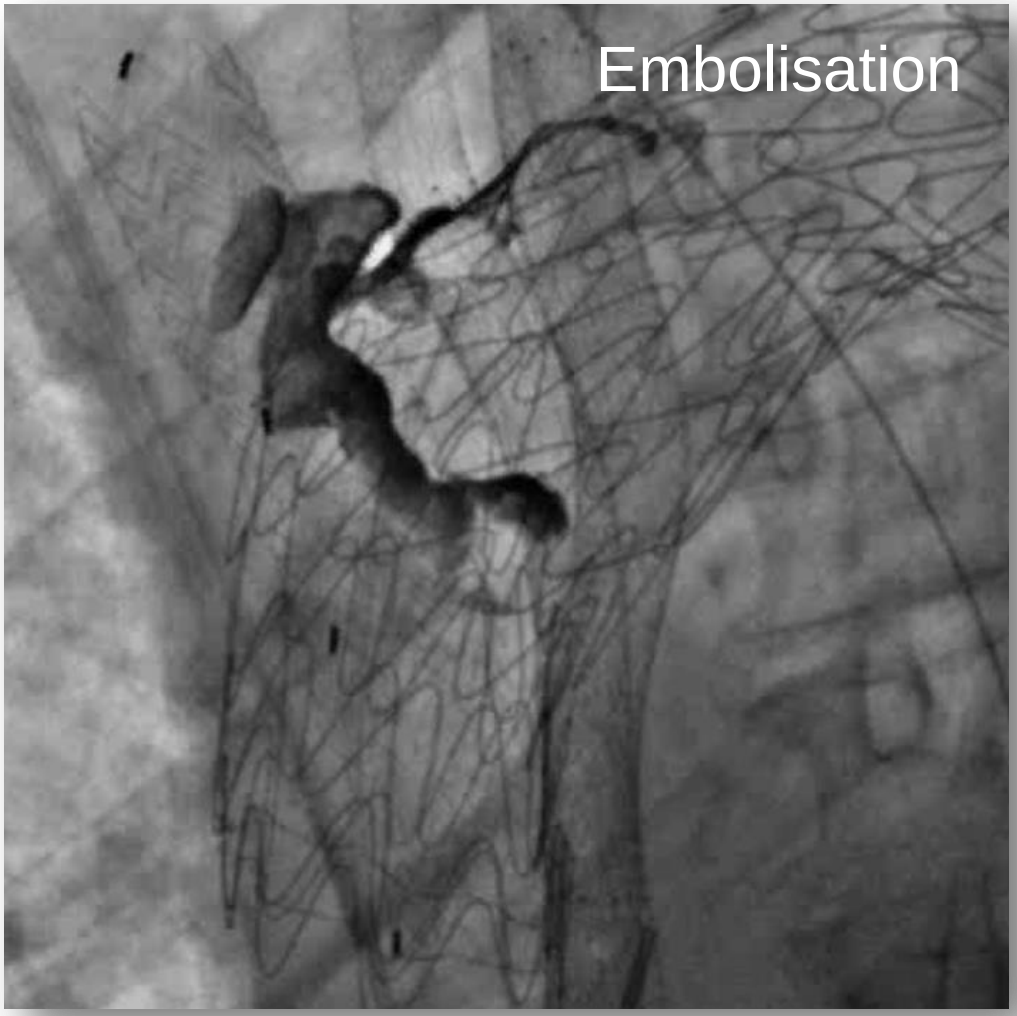
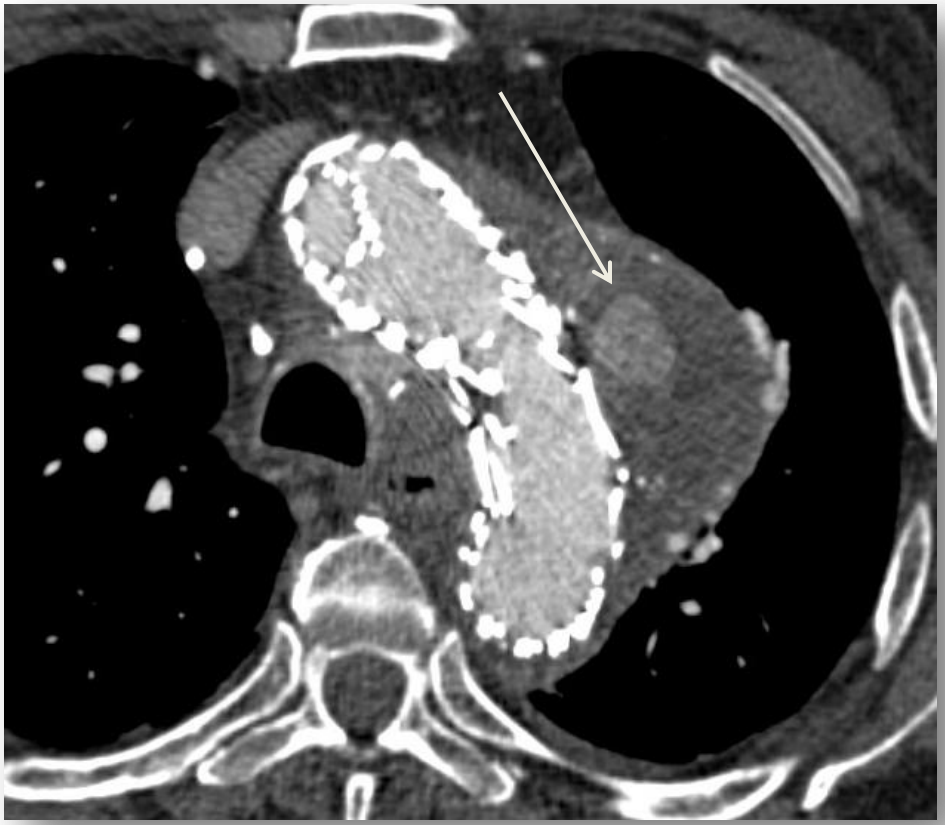

Embolisation

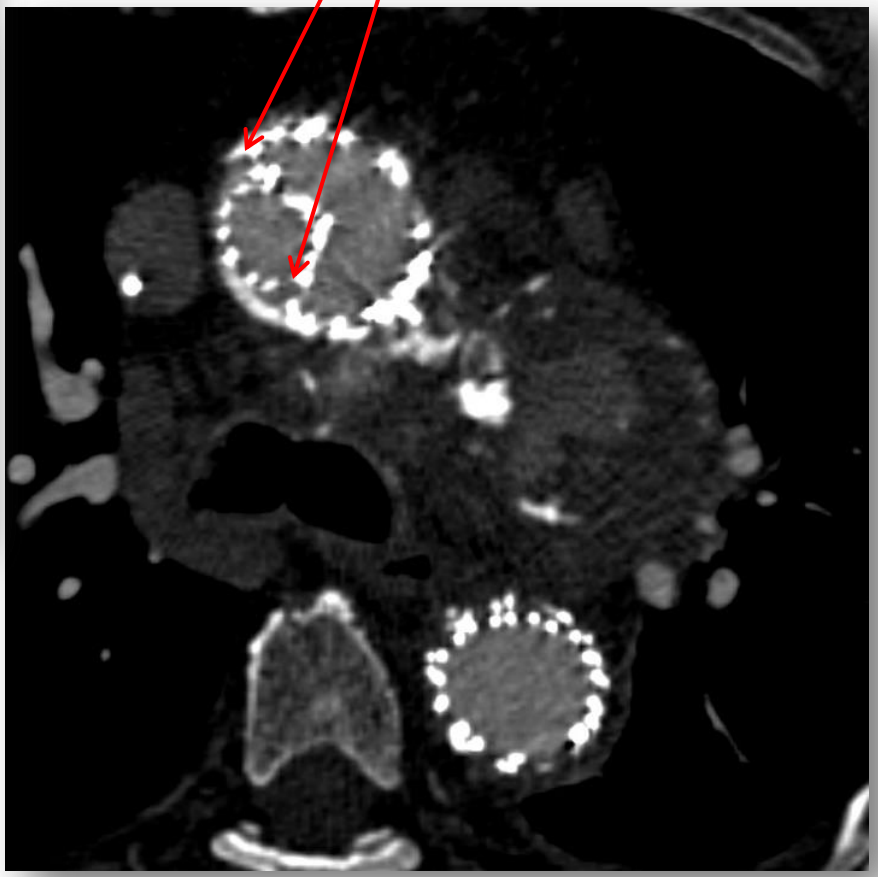

CT post

Perioperative complications

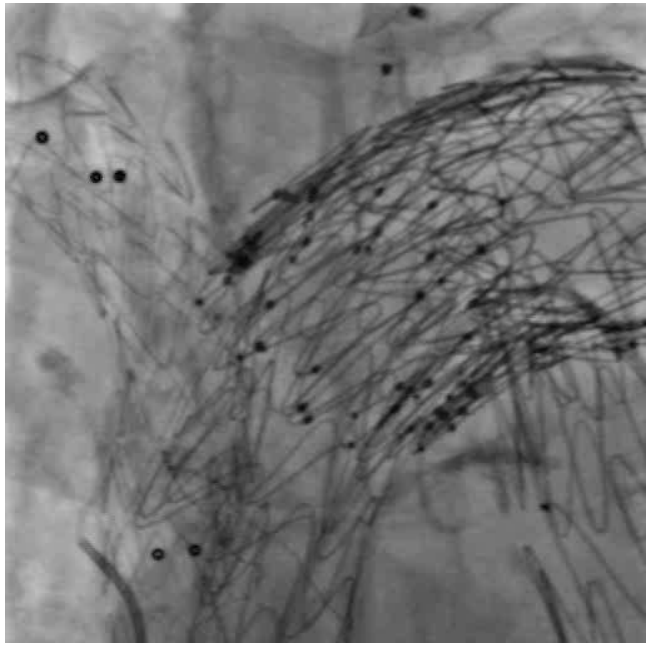
TYPE I ENDOLEAK *in single chimney*

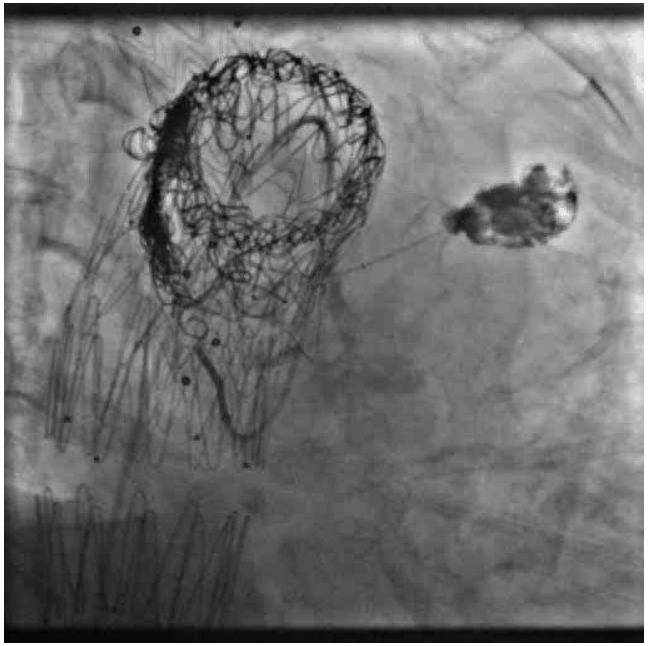


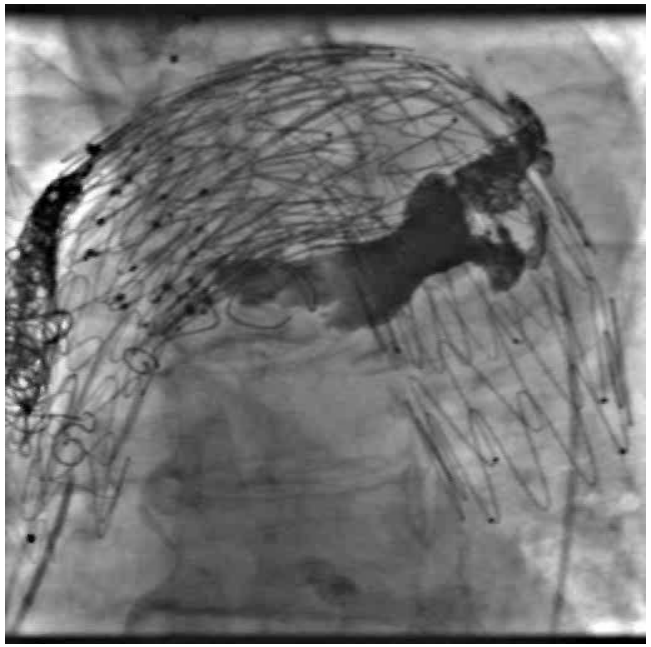
Proximal gutters

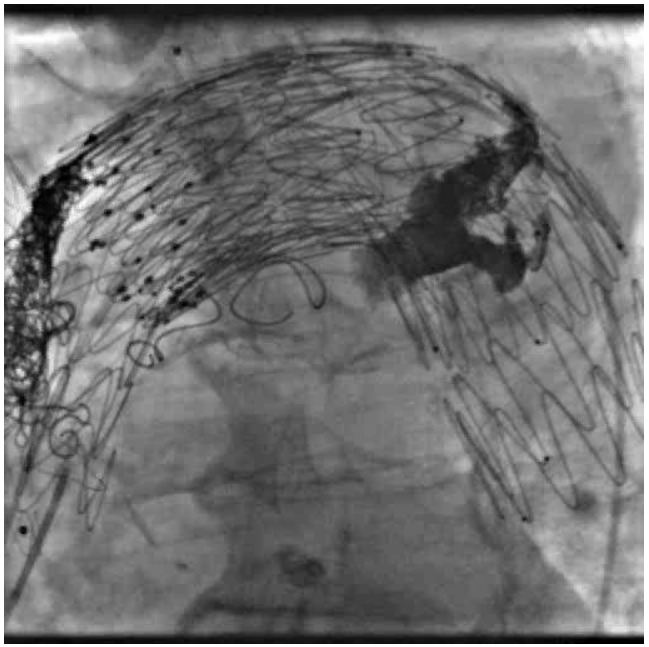


Gutter embolisation (coils and embolic liquid polymer)

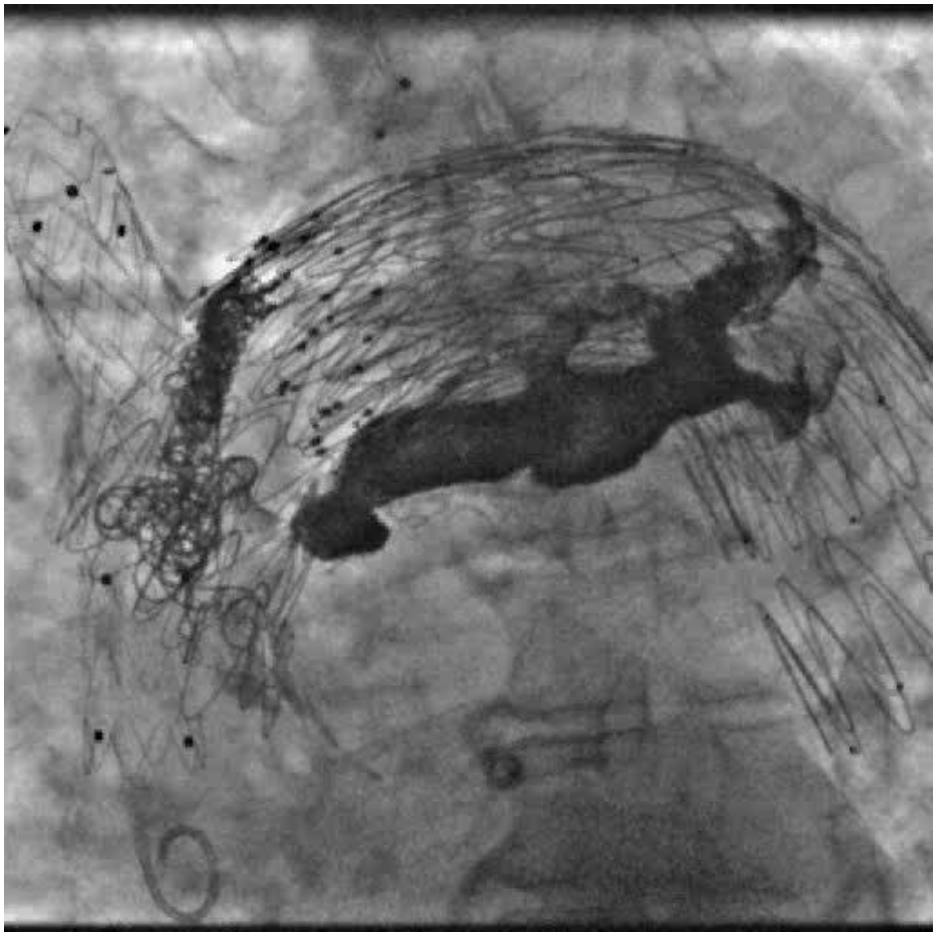


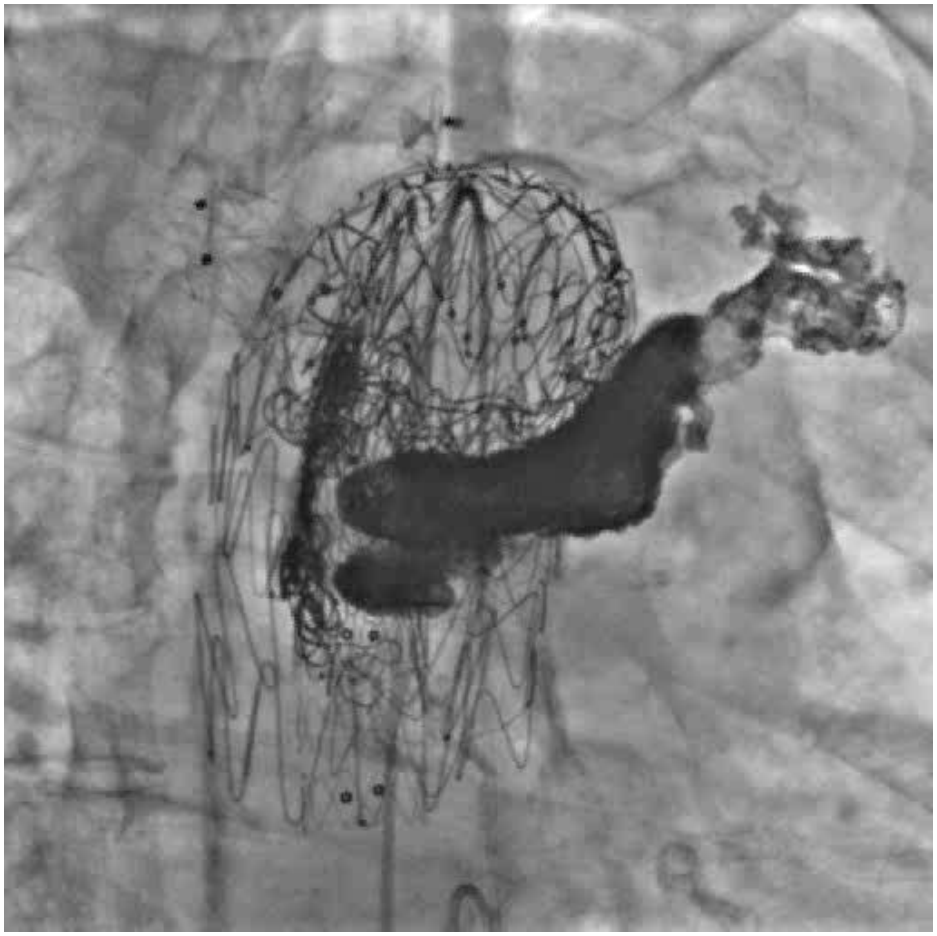






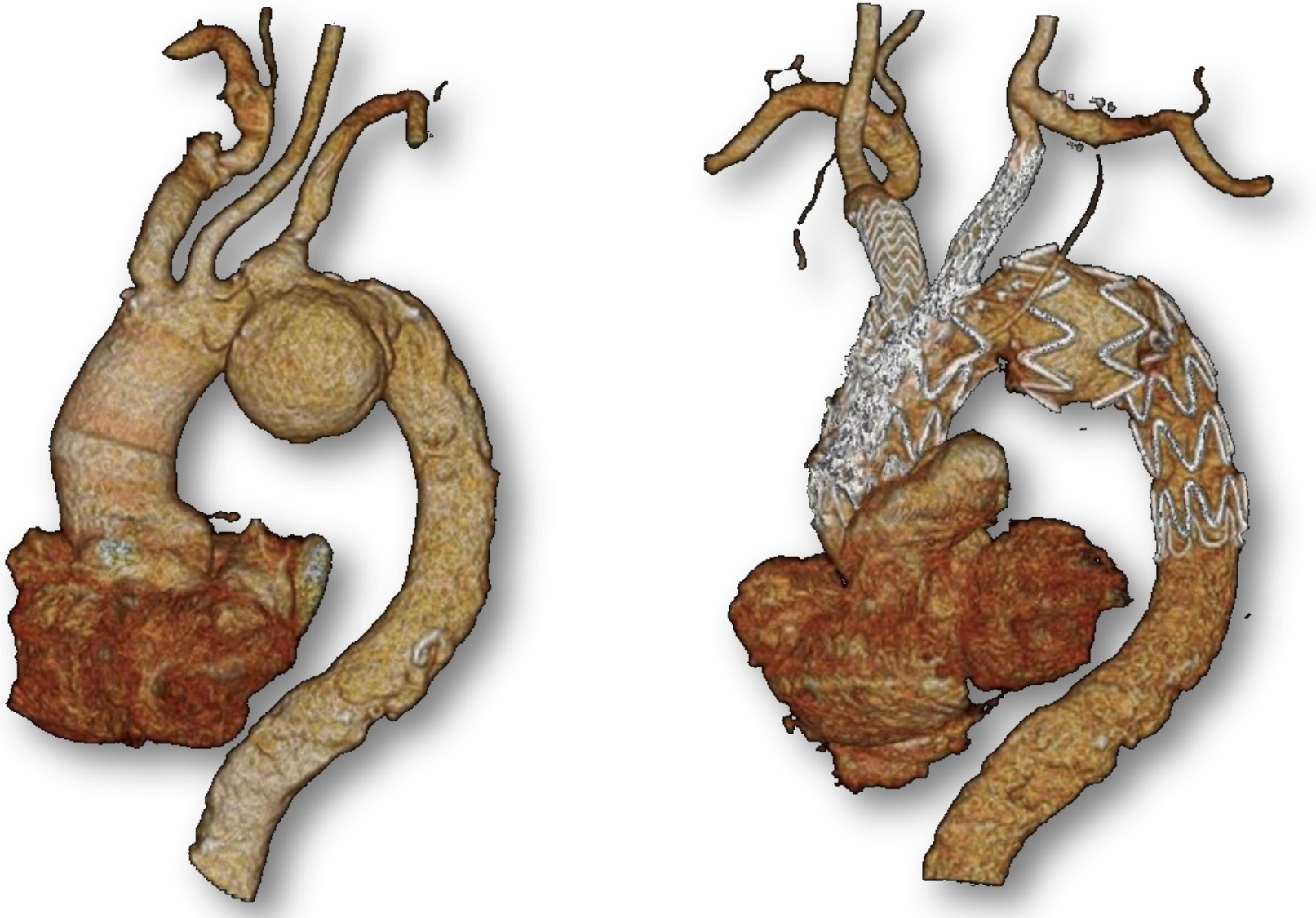
Final Angio





Different approaches for landing zone 0

DOUBLE BRANCH ENDOGRAFT



Aortic arch debranching and thoracic endovascular repair

Paola De Rango, MD, PhD,[b] Piergiorgio Cao, MD, FRCS,[a] Ciro Ferrer, MD,[a] Gioele Simonte, MD,[b] Carlo Coscarella, MD,[a] Enrico Cieri, MD, PhD,[b] Gabriele Pogany, MD,[a] and Fabio Verzini, MD, PhD,[b]
Rome and Perugia, Italy

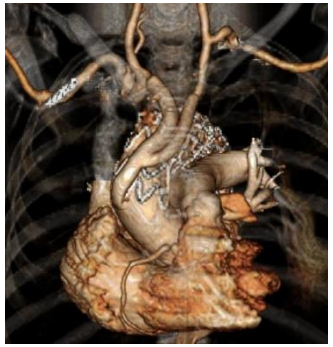
104 patients

Multivariate analysis*:

30-day mortality:

Total arch debranching:

OR 9.6; 95% CI 1.54-59.90;P=.015



*Adjusted for: age, sex, dissection indication, staged procedure, total arch debranching (zone 0 landing)

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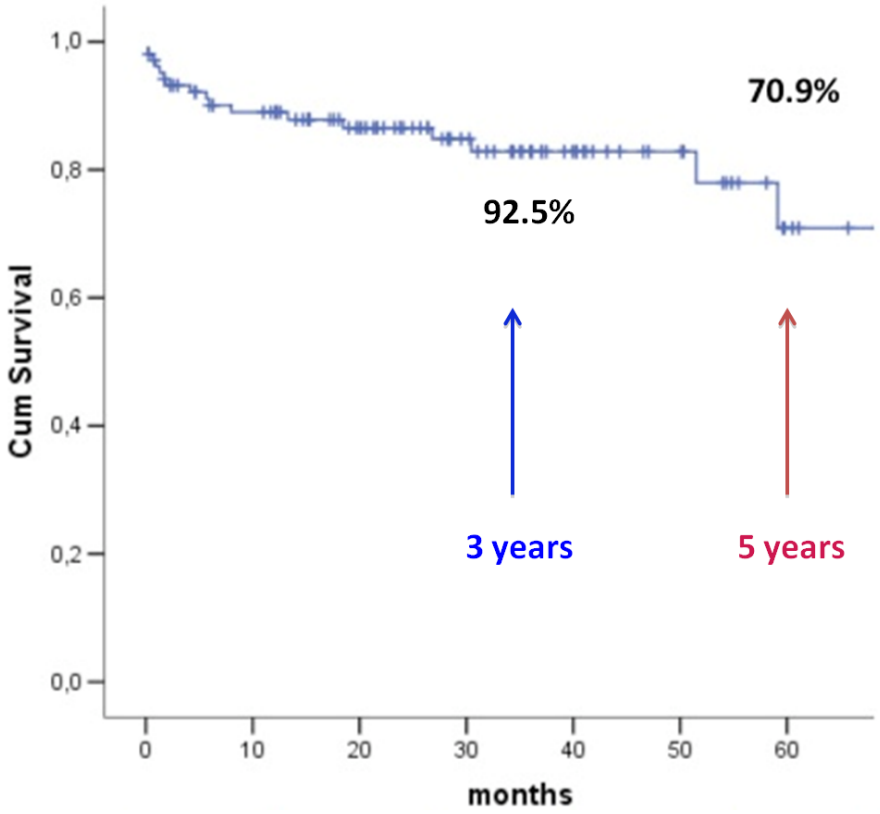
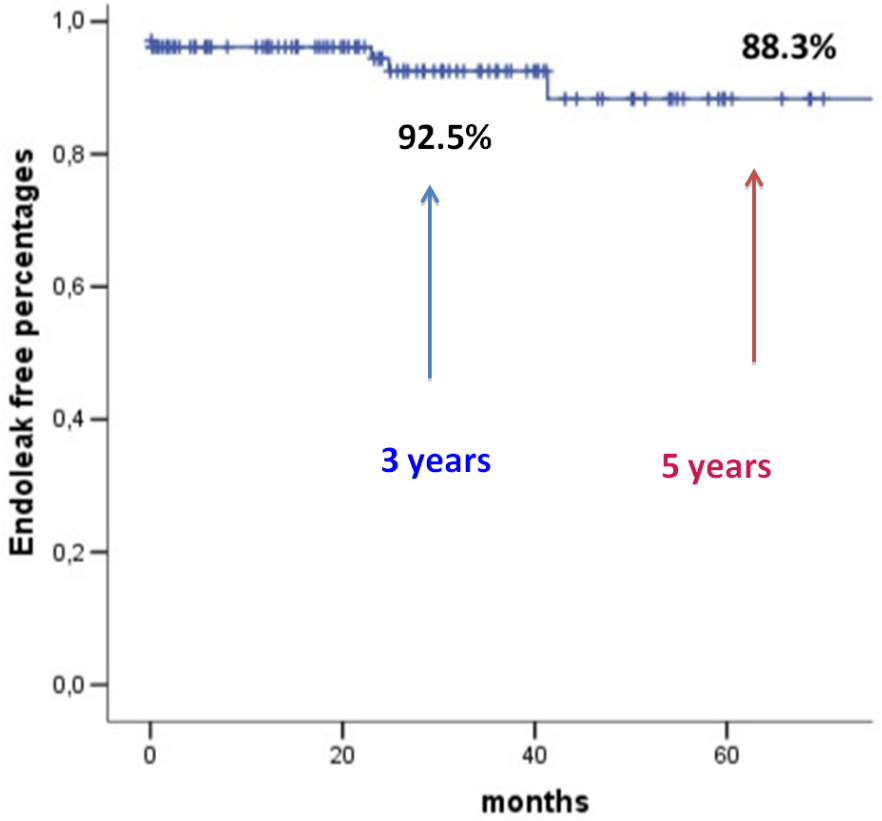
5-year results

SURVIVAL



ENDOLEAK FREE



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Other five-year outcome measures

Long-term outcomes		details
Supra-aortic vessel occlusion	**1**	Car-car-subcl bypass occlusion detected @ 2m CT scan
Migration	**1**	patient developing type Ib leak @24m
Reinterventions	**5**	4 endovascular additional procedures (cuffs/ embolization) 1 ascending aorta replacement (retrograde dissection @10 days)
Morphology changes:*		
	34	Aneurysm diameter shrinkage ≥5mm
	4	Aneurysm diameter growth ≥5mm
	56	Non relevant diameter change

*94 patients surviving with imaging

JVS 2014

✓ Aortic arch debranching repair relies on a number of procedural options that need to be tailored to

- individual patient characteristic
- setting (election/emergency)
- center experience

Conclusion

✓ Hybrid arch procedures present a persistent high risk of perioperative mortality, mostly in landing zone 0

✓ Retrograde dissection may complicate total surgical debranching, especially in dissected aorta

✓ Total endovascular procedures (chimney techniques) are currently subject to a high rate of *gutter* type I endoleak and should be reserved for emergencies

✓ Embolisation procedures not ever resolutive

✓ Branched endografts: promising results