

If done properly, landing zone creation with septotomy makes FL management obsolete: when and how

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Disclosures

- Cook Medical Inc.
 - Consulting
 - Research support
 - Planning & proctoring
- Some devices presented here are investigational and have not been approved by the FDA
- Acknowledgement
 - Gustavo Oderich, MD
Professor and Chief of Vascular Surgery
UT Health & Memorial Hermann Texas Medical Center ,
Houston, TX, USA

False lumen management

Steerable catheter (6.5 Fr)

PRE-OPERATIVE


POST-OPERATIVE

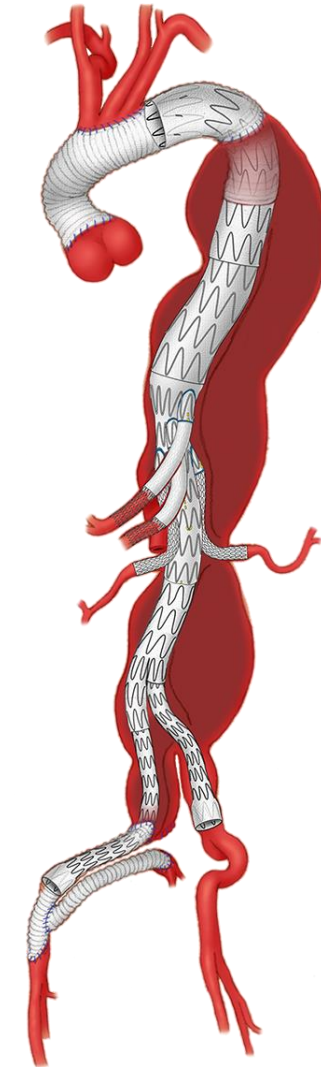
COMPLETE FALSE LUMEN EXCLUSION RARELY ACHIEVED

Fenestrated EVAR & Chronic Aortic Dissections

Outcomes of endovascular repair of chronic postdissection compared with degenerative thoracoabdominal aortic aneurysms using fenestrated-branched stent grafts

Emanuel R. Tenorio, MD, PhD,^a Gustavo S. Oderich, MD,^a Mark A. Farber, MD,^b Darren B. Schneider, MD,^c Carlos H. Timaran, MD,^d Andres Schanzer, MD,^e Adam W. Beck, MD,^f Fernando Motta, MD,^b and Matthew P. Sweet, MD,^g on behalf of the U.S. Fenestrated and Branched Aortic Research Consortium Investigators, Rochester, Minn; Chapel Hill, NC; New York, NY; Dallas, Tex; Worcester, Mass; Birmingham, Ala; and Seattle, Wash

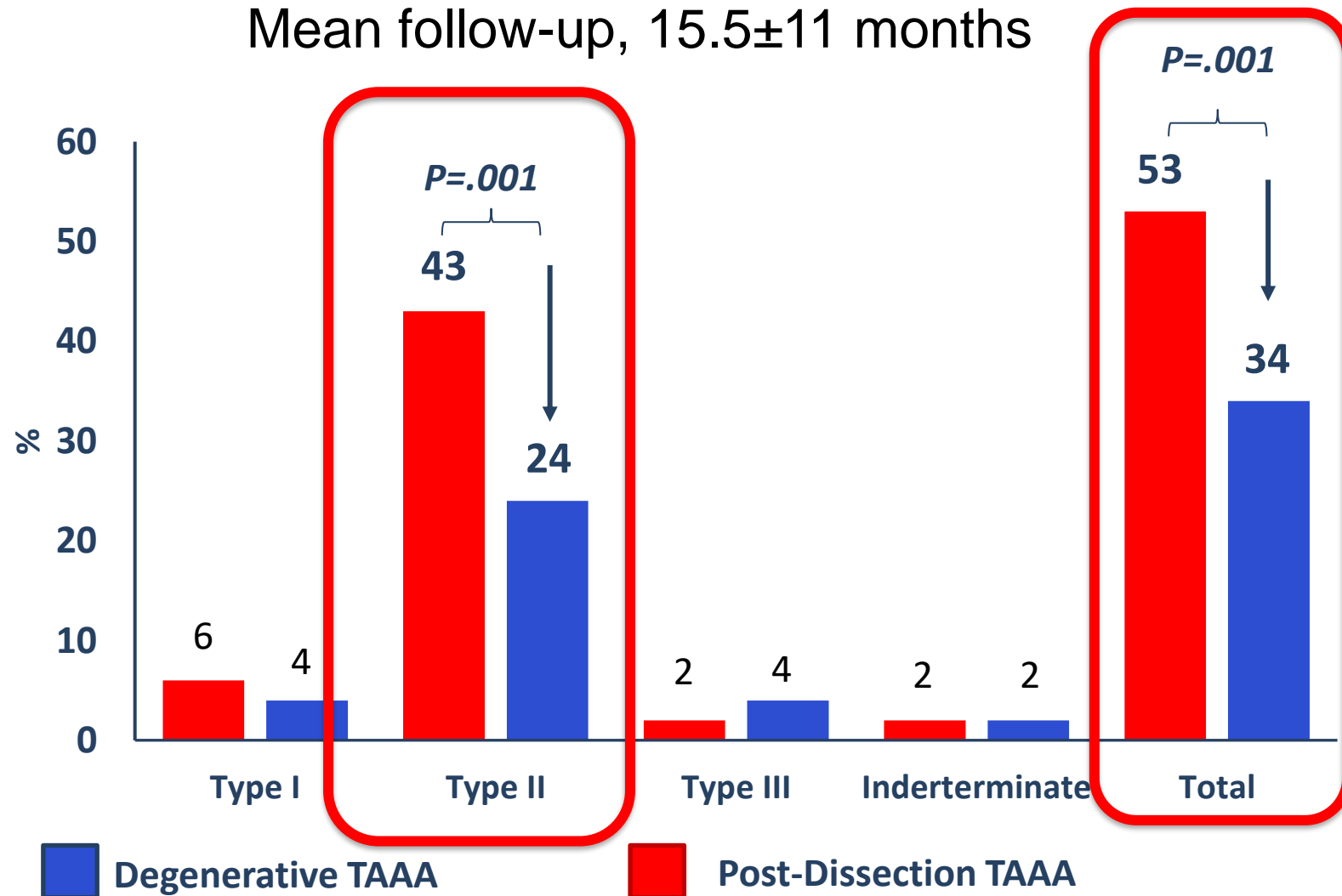
 Check for updates



J Vasc Surg 2020;72:822-36.

Endoleaks / False lumen entry & patency

Mean follow-up, 15.5±11 months



THE PRESENT AND FUTURE

JACC STATE-OF-THE-ART REVIEW

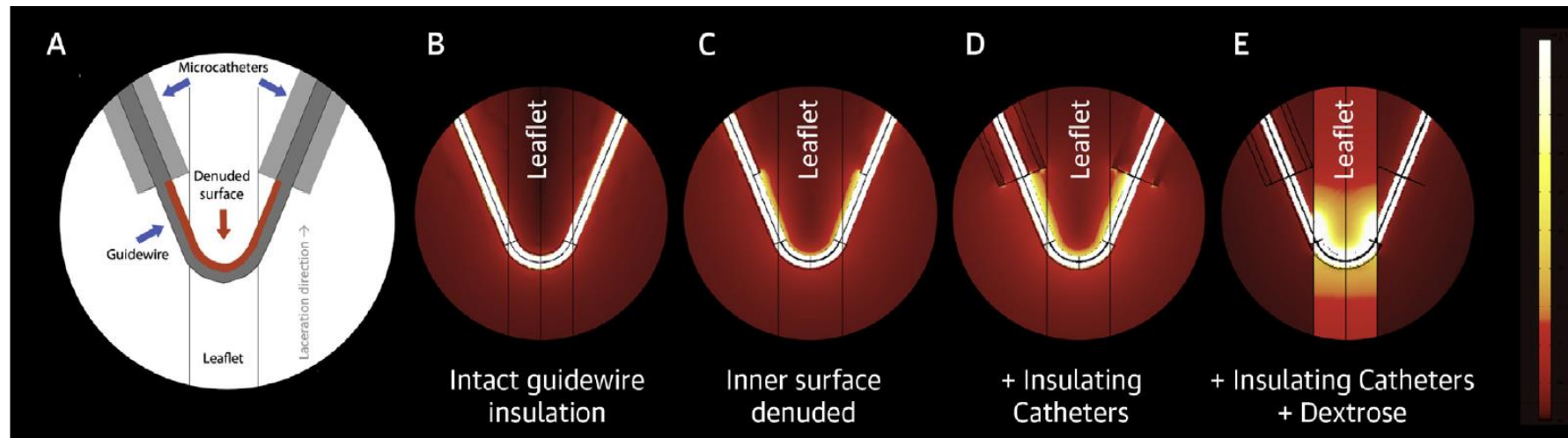
Transcatheter Electrosurgery

JACC State-of-the-Art Review



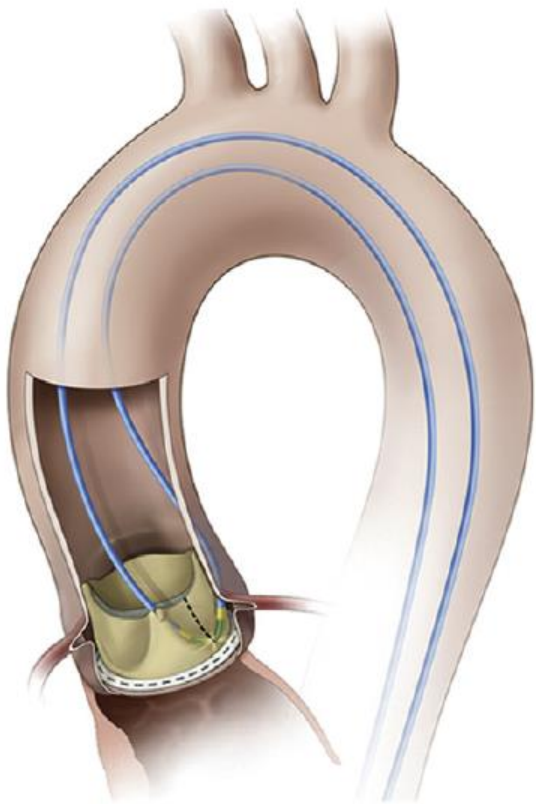
Jaffar M. Khan, BM BCH,^{a,b} Toby Rogers, BM BCH, PhD,^{a,b} Adam B. Greenbaum, MD,^c Vasilis C. Babaliaros, MD,^c Dursun Korel Yildirim, MS,^a Christopher G. Bruce, MB ChB,^a Daniel A. Herzka, PhD,^a William H. Schenke, BS,^a Kanishka Ratnayaka, MD,^{a,d} Robert J. Lederman, MD^a

JACC;2020;75:1455-70

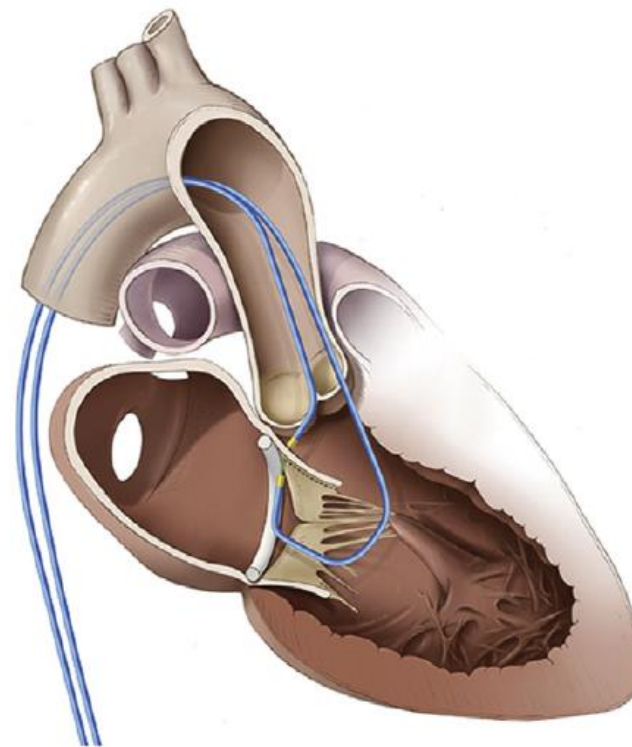


Transcatheter Electrosurgery

BASILICA



LAMPOON



New Strategy

Eliminate the Septum & False Lumen



**Novel Technique to Fenestrate
an Aortic Dissection Flap using
Electrocautery**

Loay Kabbani, MD, Marvin Eng, MD, Judith Lin
MD, Dylan Mclaughlin MS, Scott Bendix MD

MVSS 2019

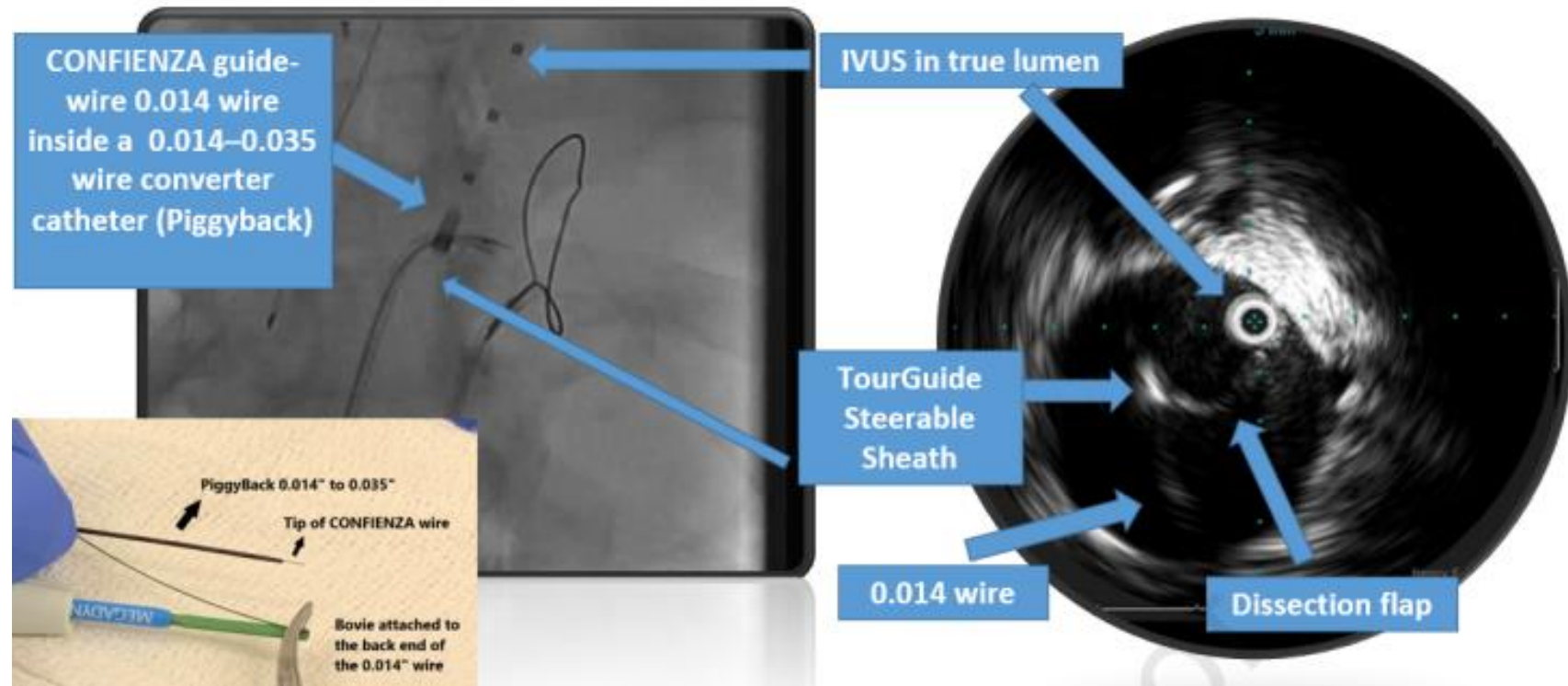


Novel Technique to Fenestrate an Aortic Dissection Flap using Electrocautery

Loay Kabbani, MD, Kevin Onofrey, MD, Mitchell Weaver, MD, Marvin Eng, MD, Timothy Nypaver, MD

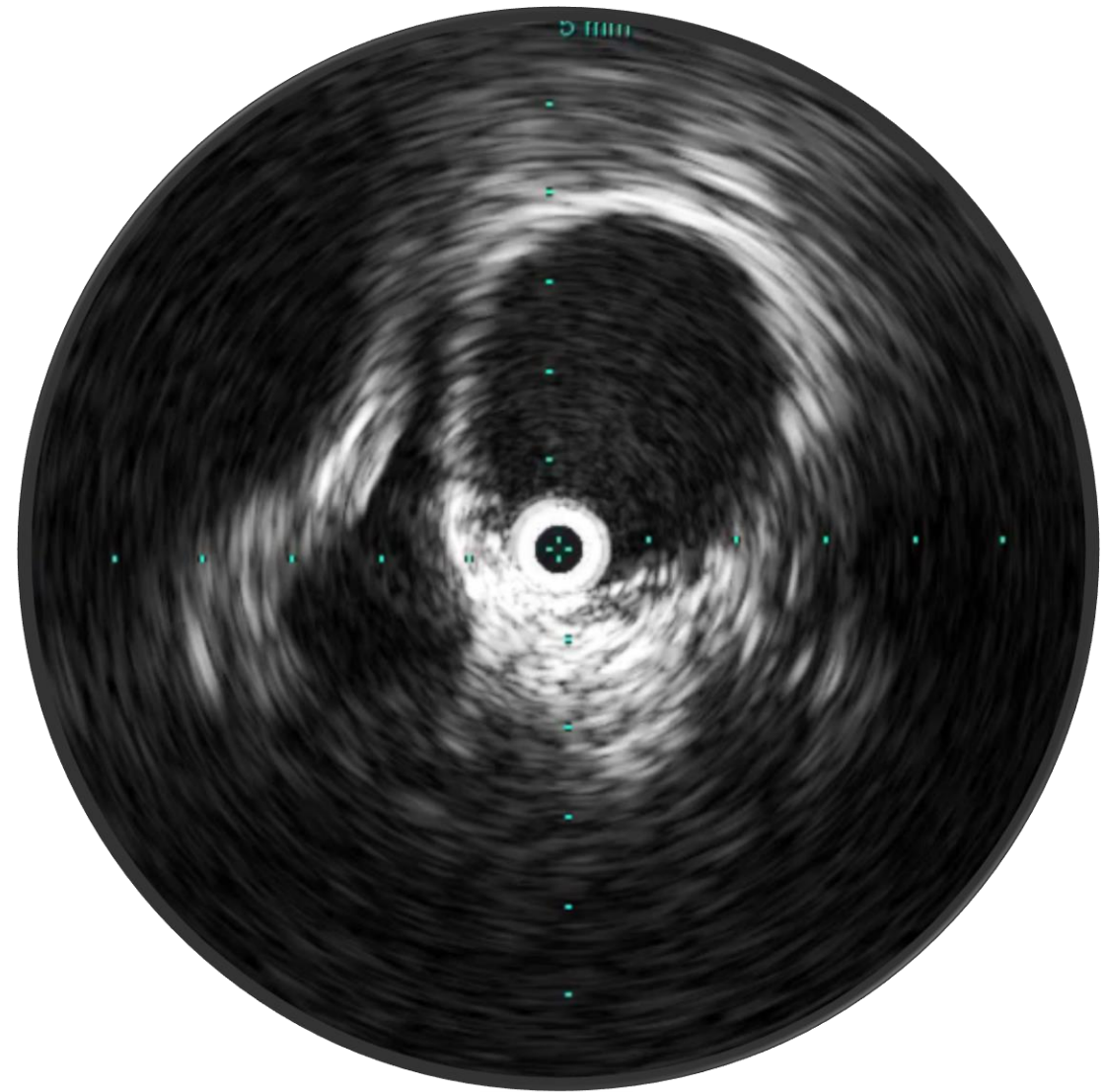
Jvscit 2023, (2023), doi: <https://doi.org/10.1016/j.jvscit.2023.101108>

Novel way of crossing the septum using electrocautery delivered through a wire tip then fenestrating the septum using electrocautery delivered over a 1-mm area of uninsulated wire to cut the septum.

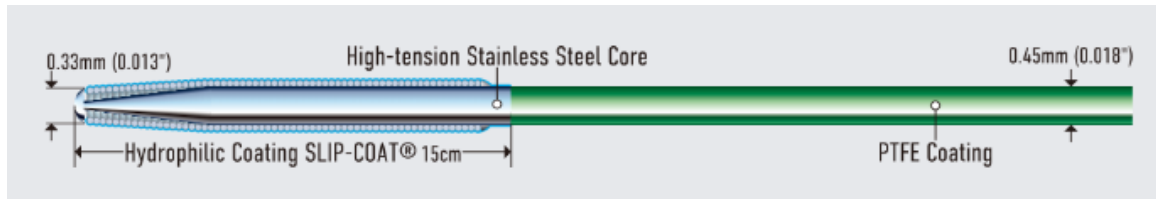


HPR

TES Septotomy Technique

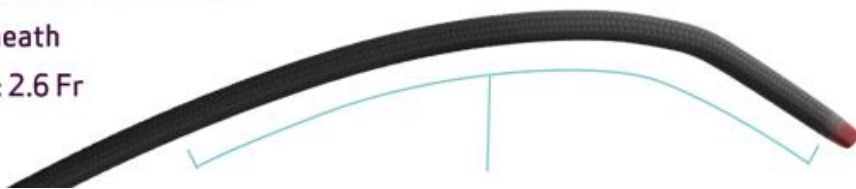


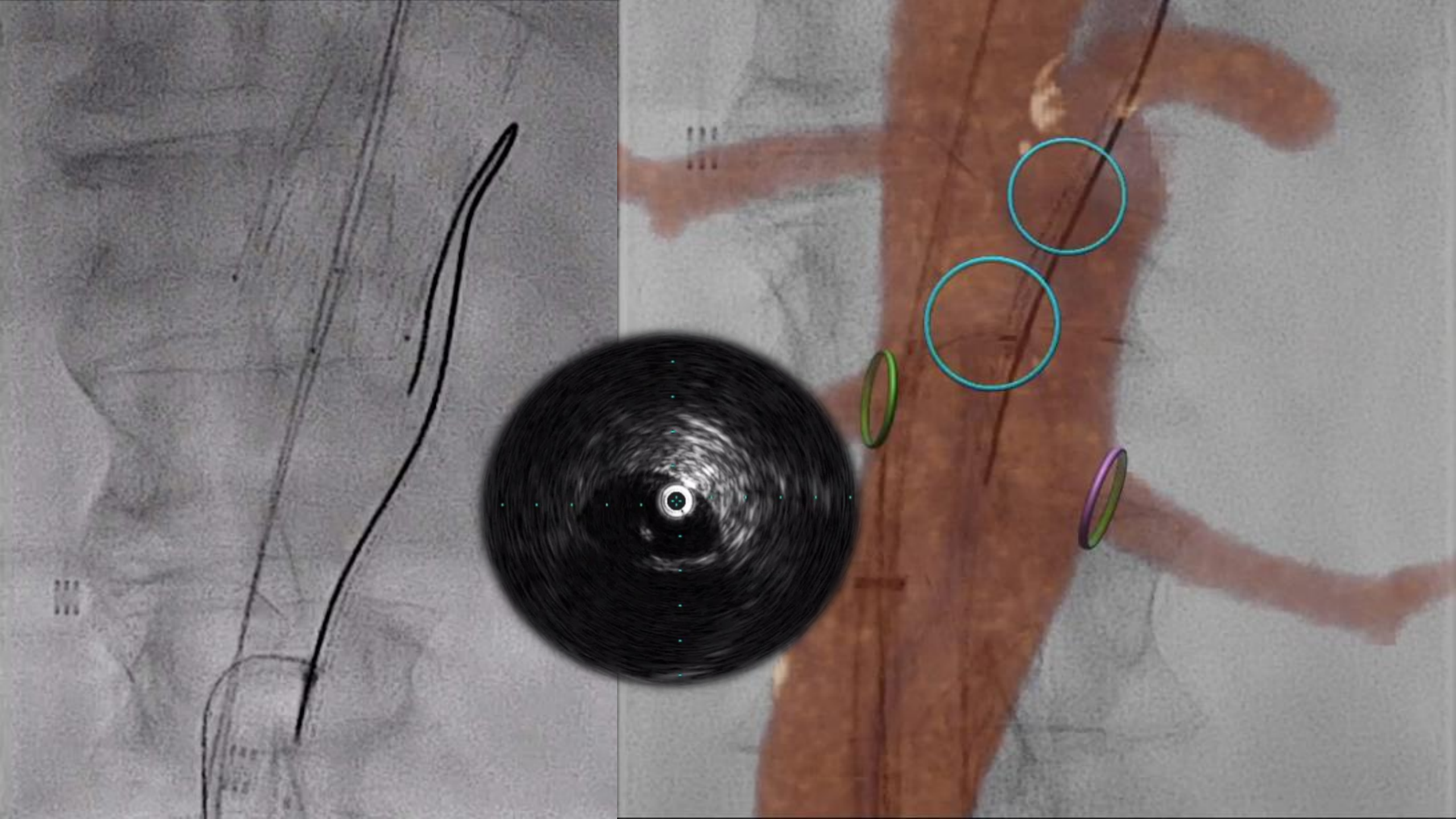
Transcatheter Electrosurgical Septotomy

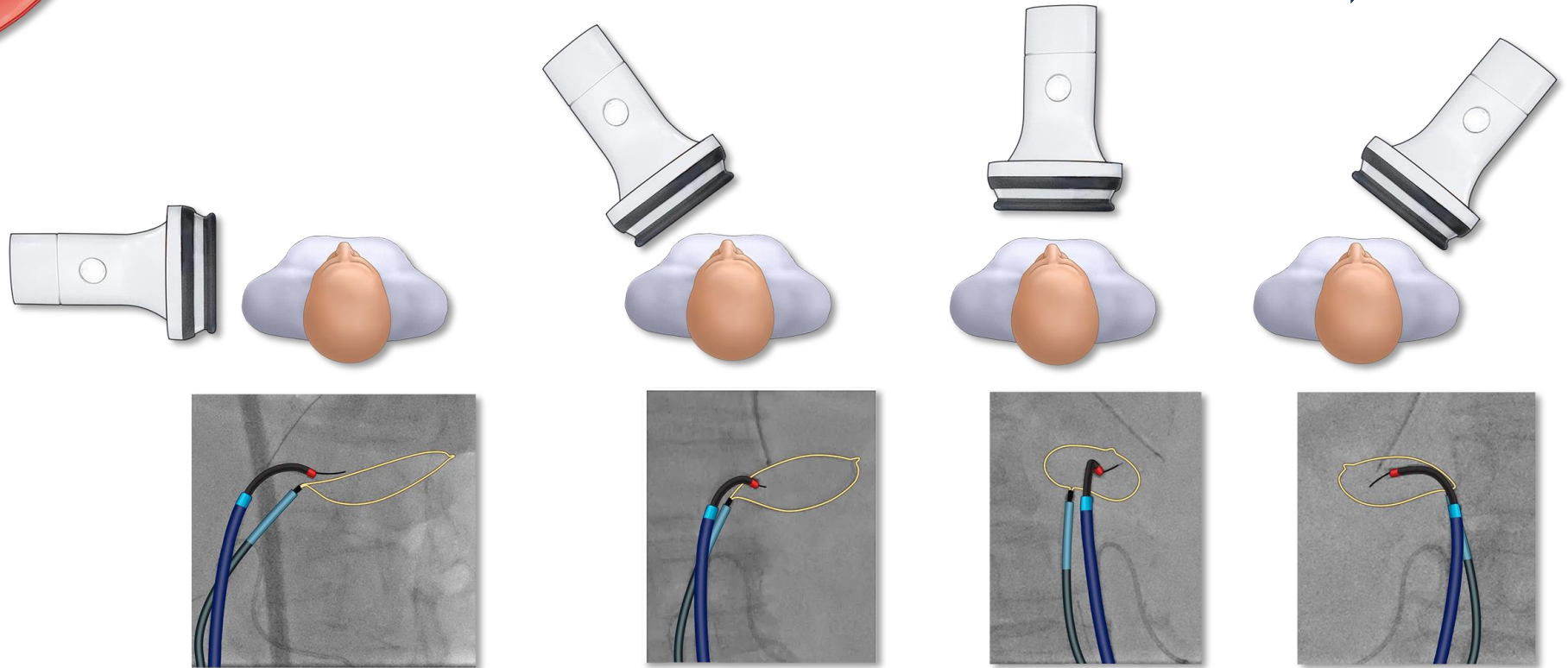
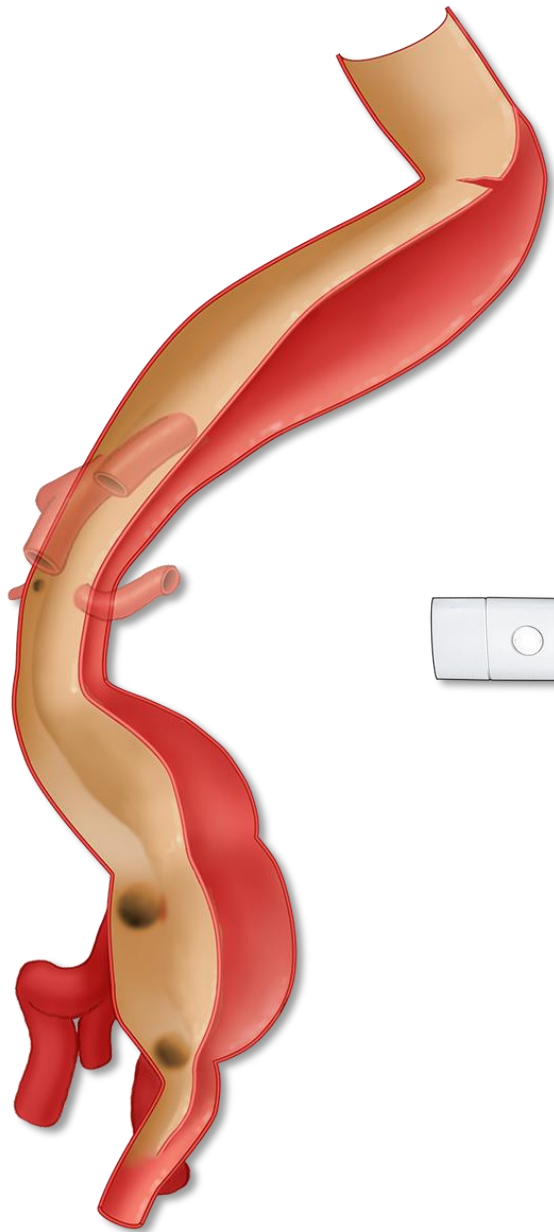


NAVICROSS® 0.018" Catheter

Minimum Sheath
Compatibility: 2.6 Fr

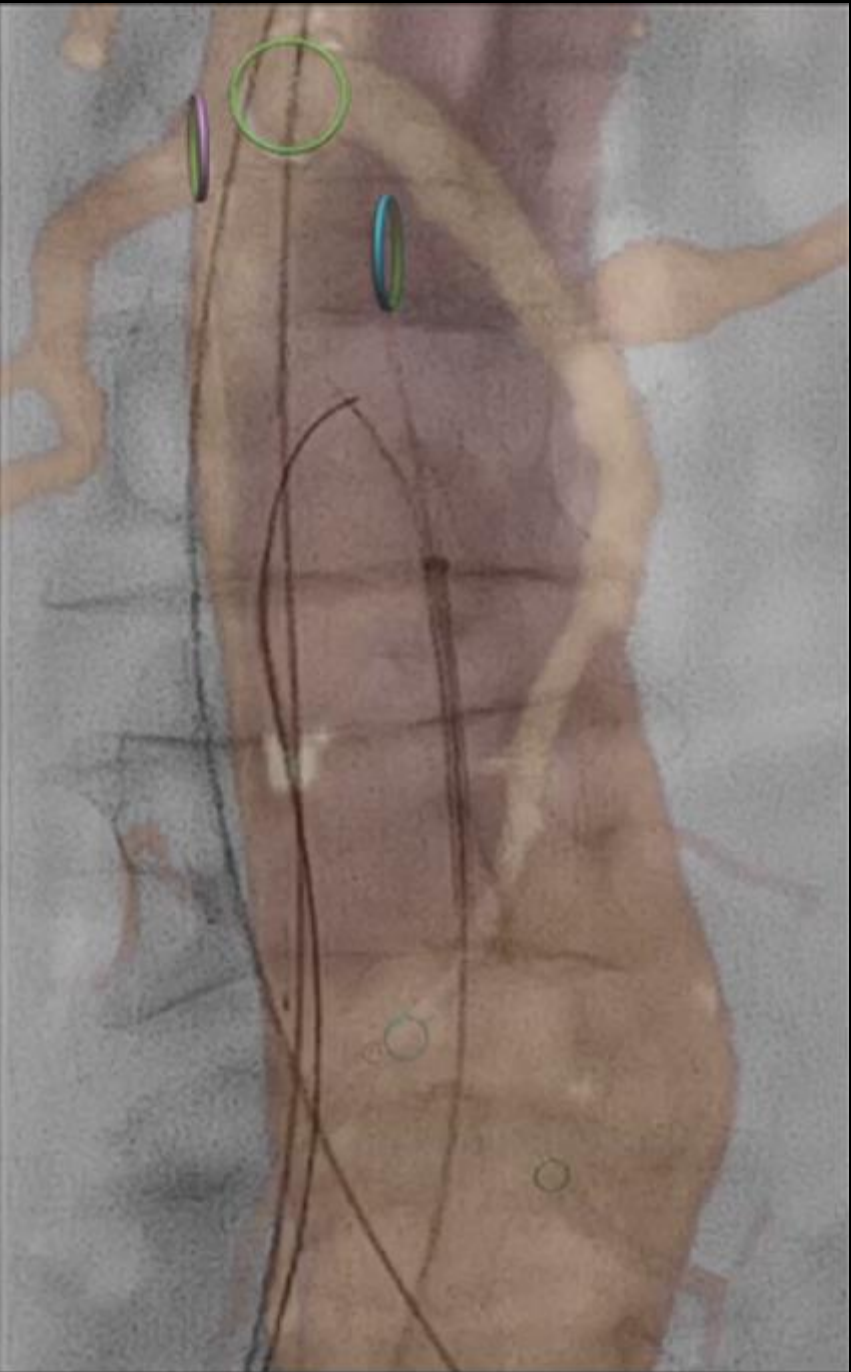


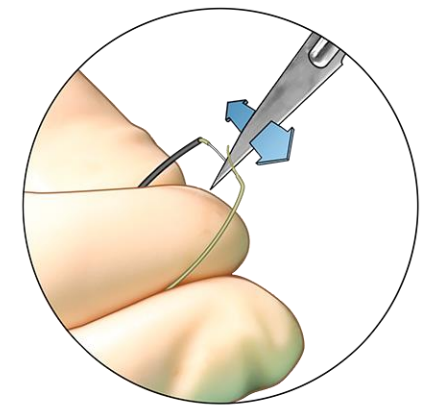
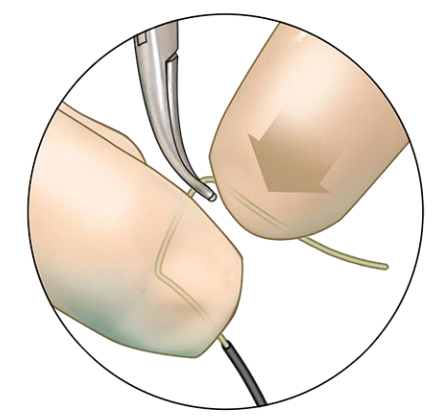
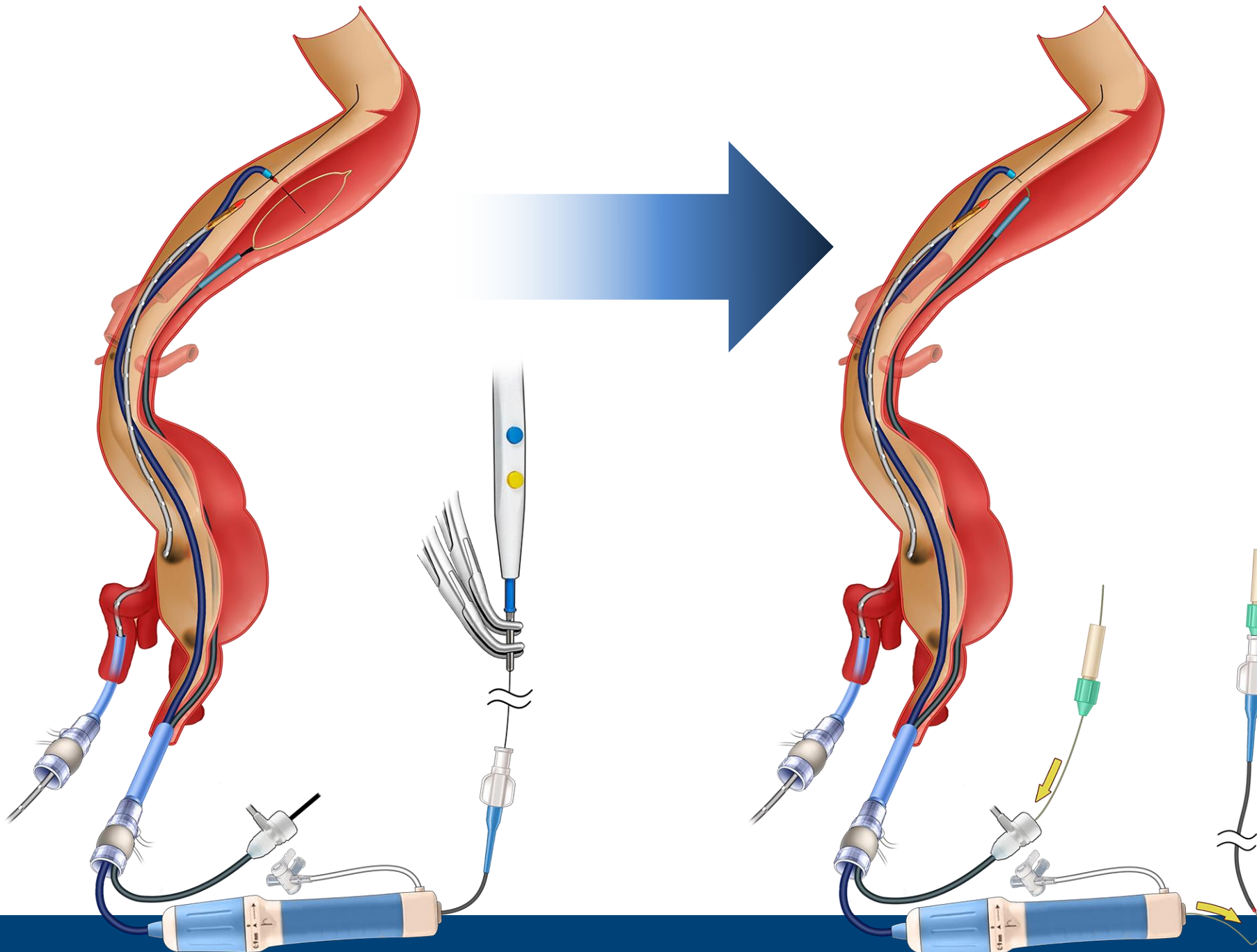




Courtesy, G. Oderich

Snare from TL to FL

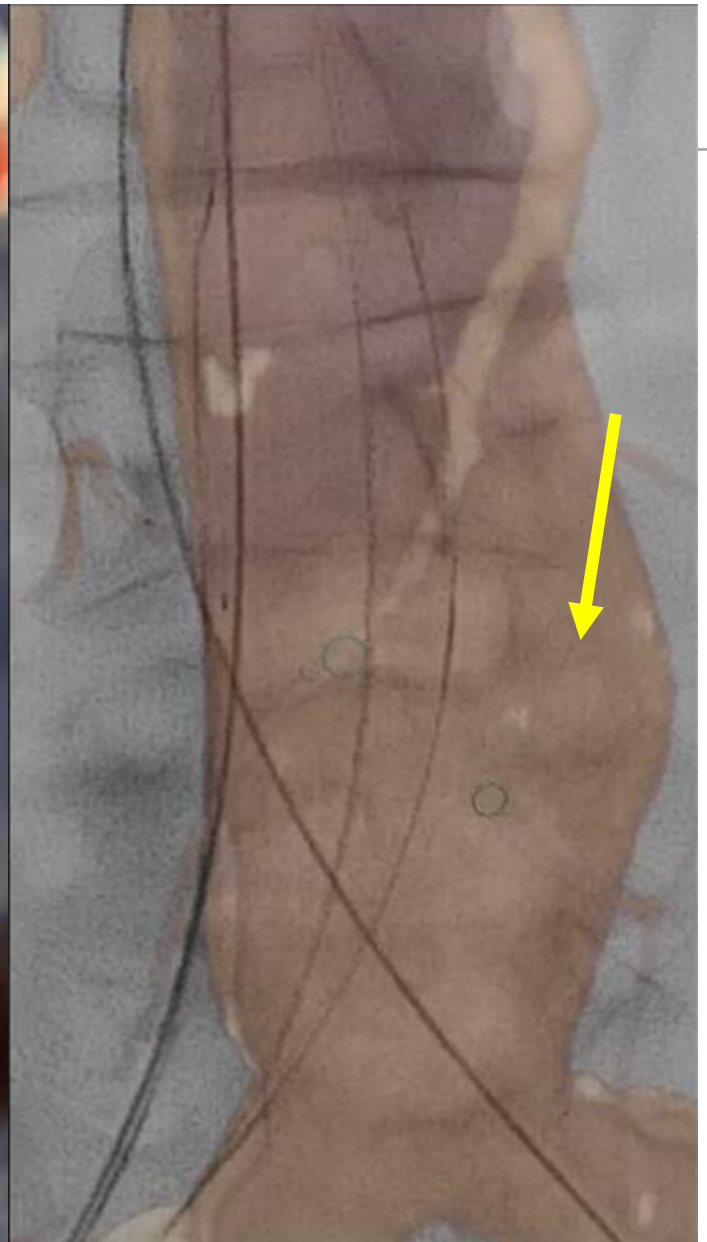


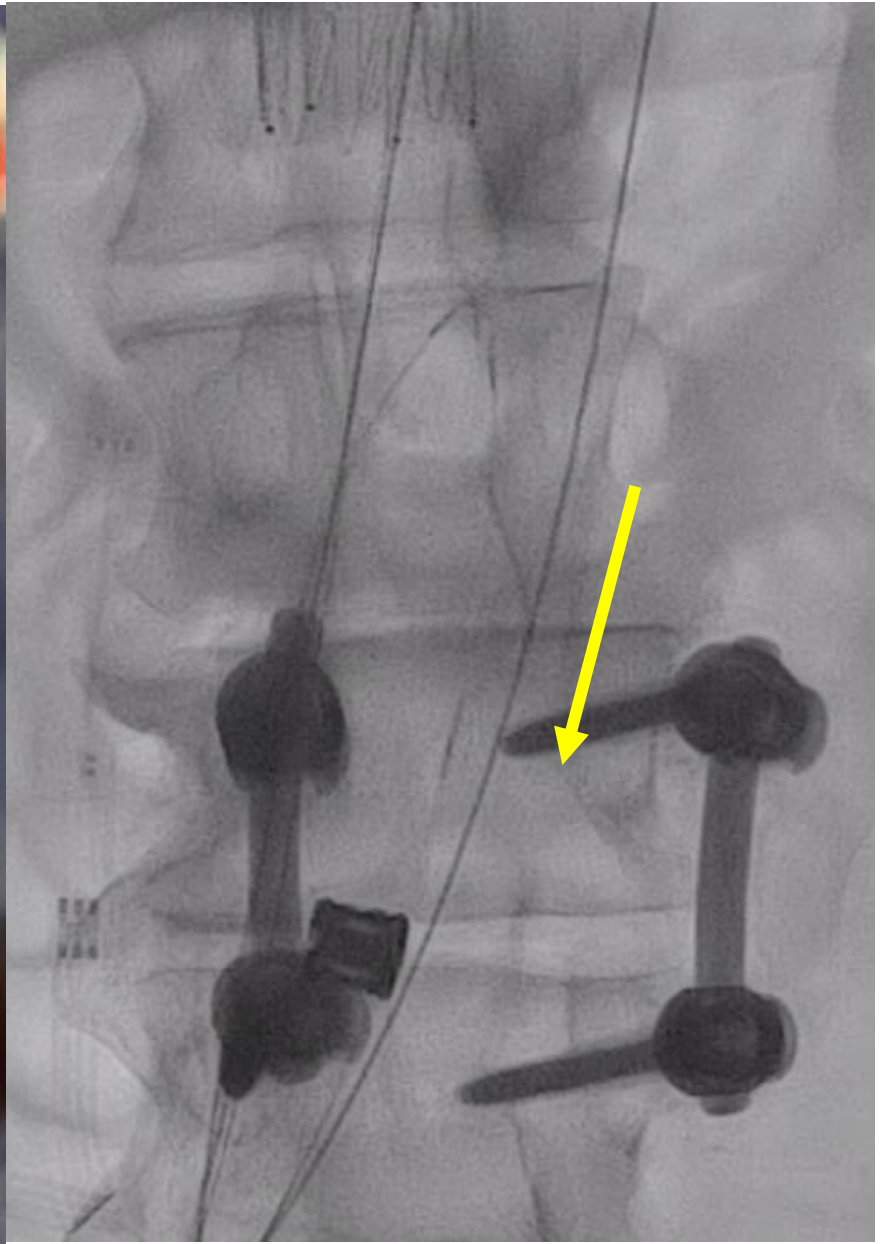


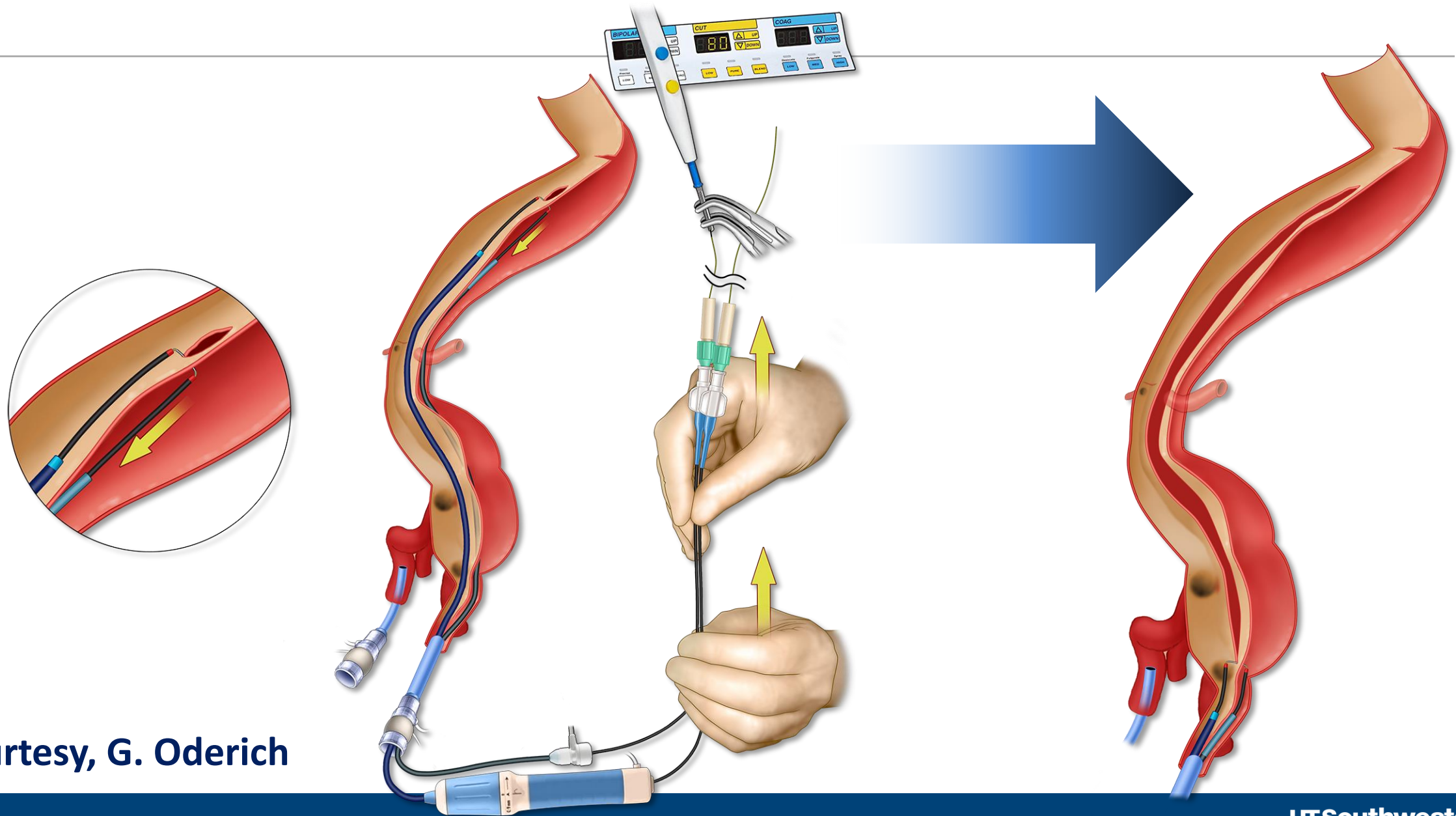
Courtesy, G. Oderich

Setup Electrocautery



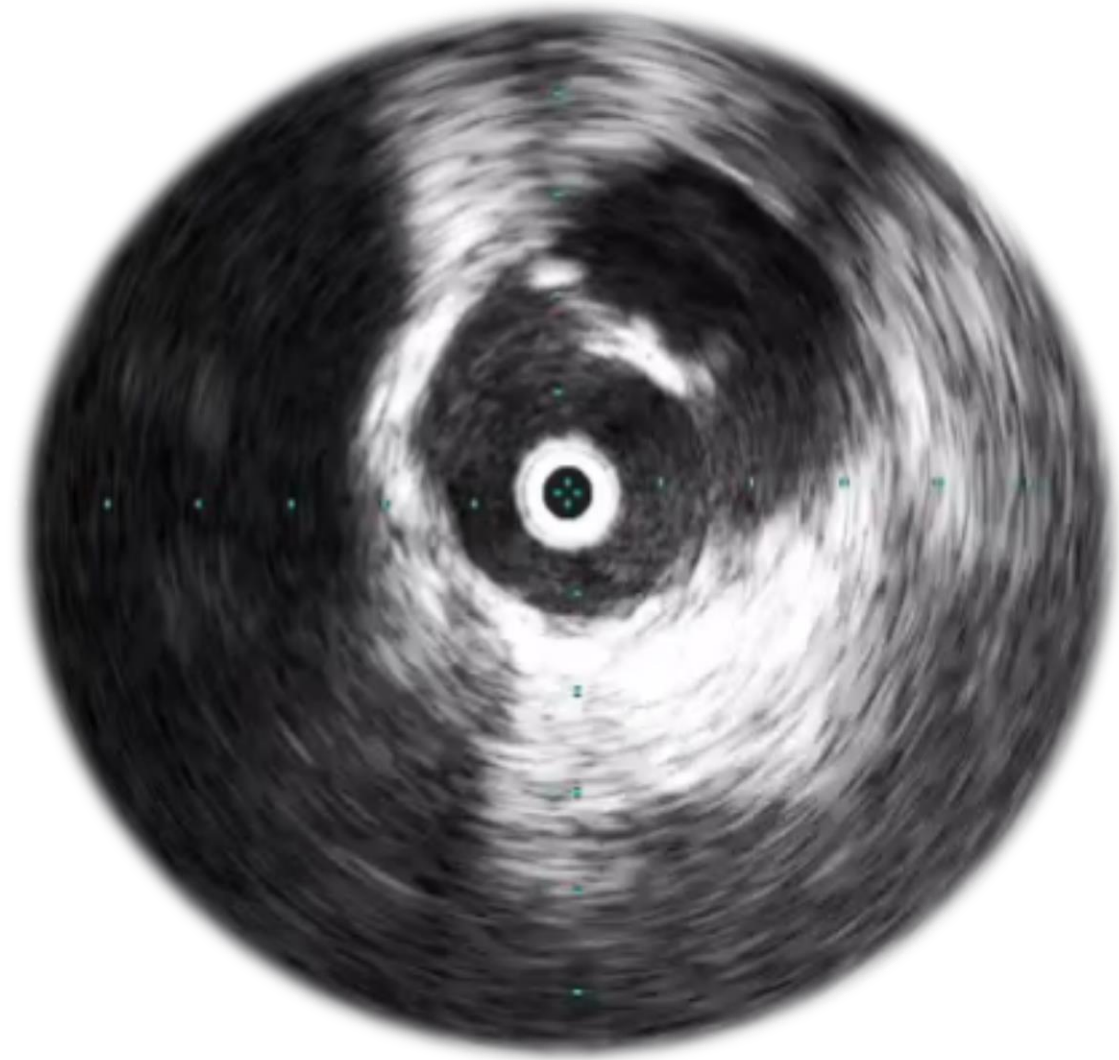
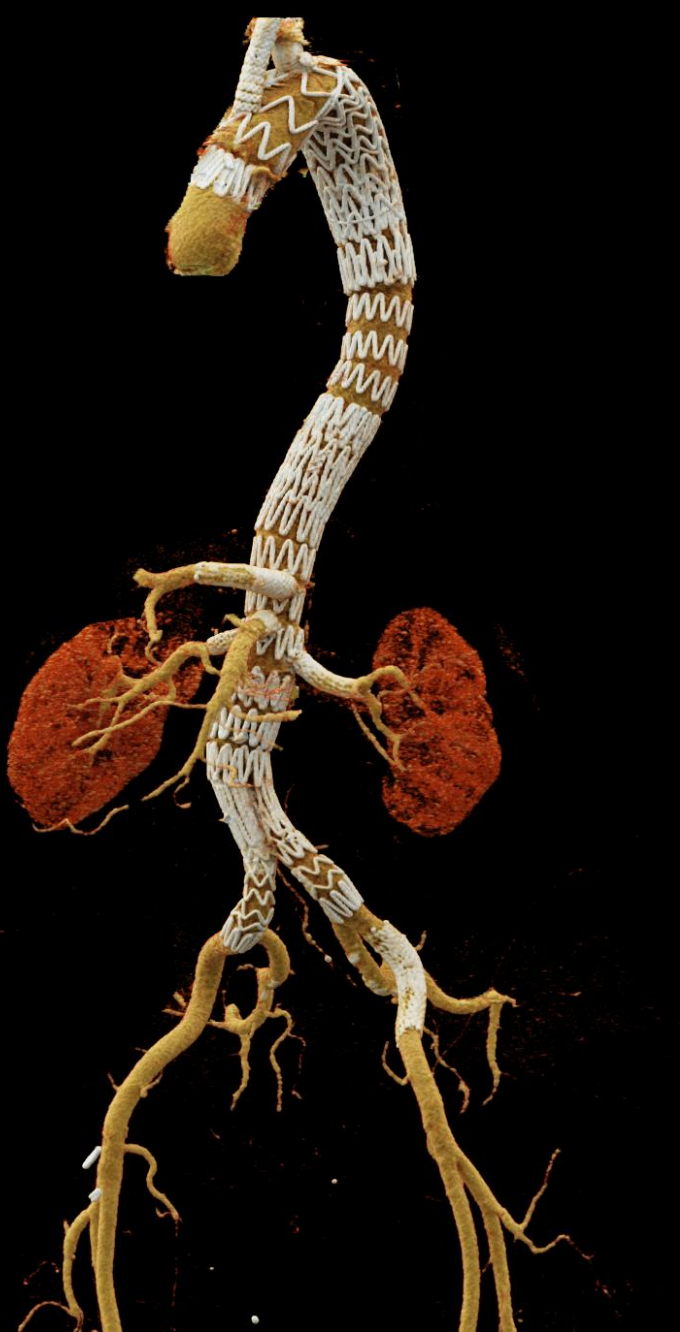




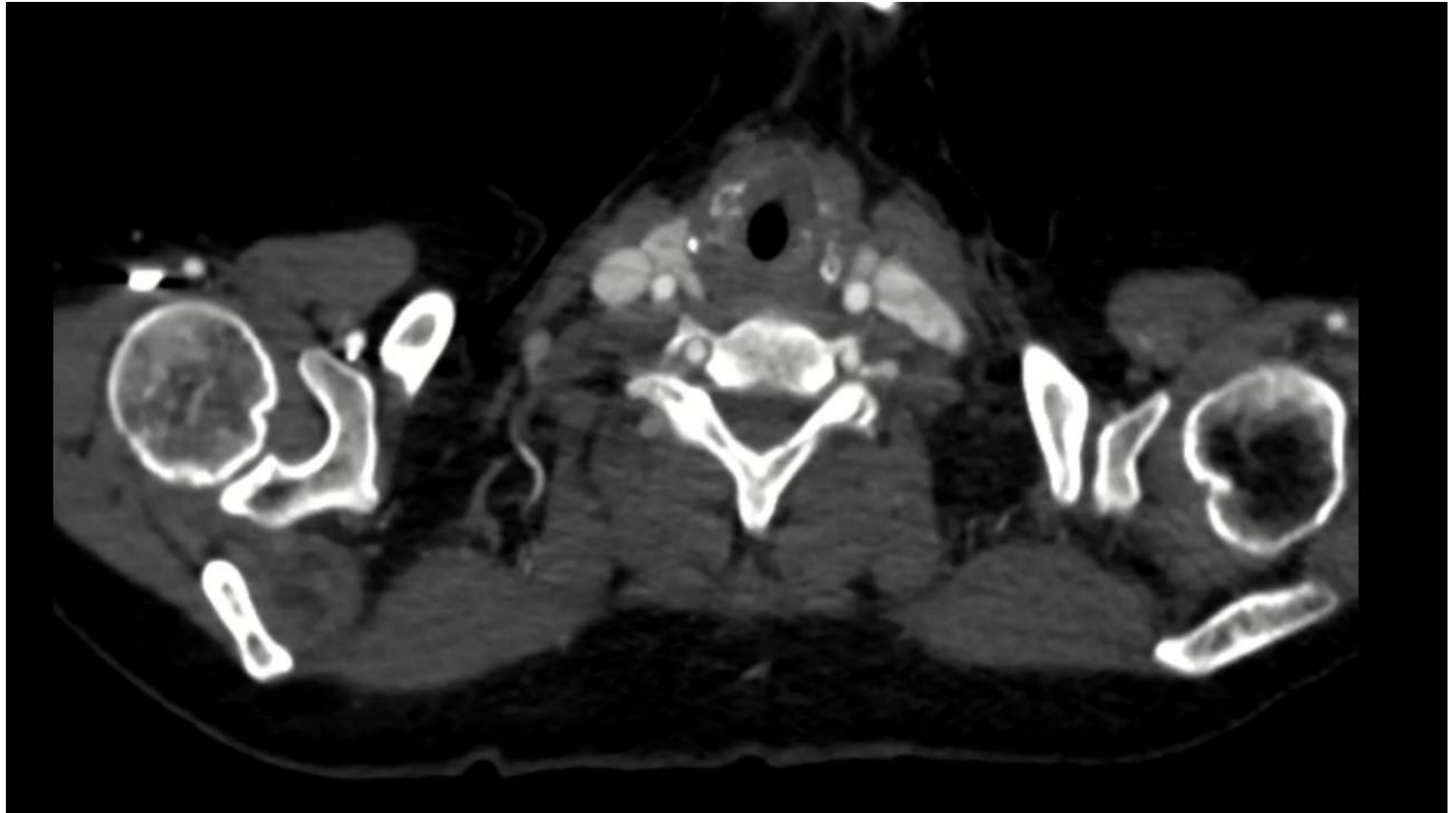


Courtesy, G. Oderich

Postseptotomy IVUS



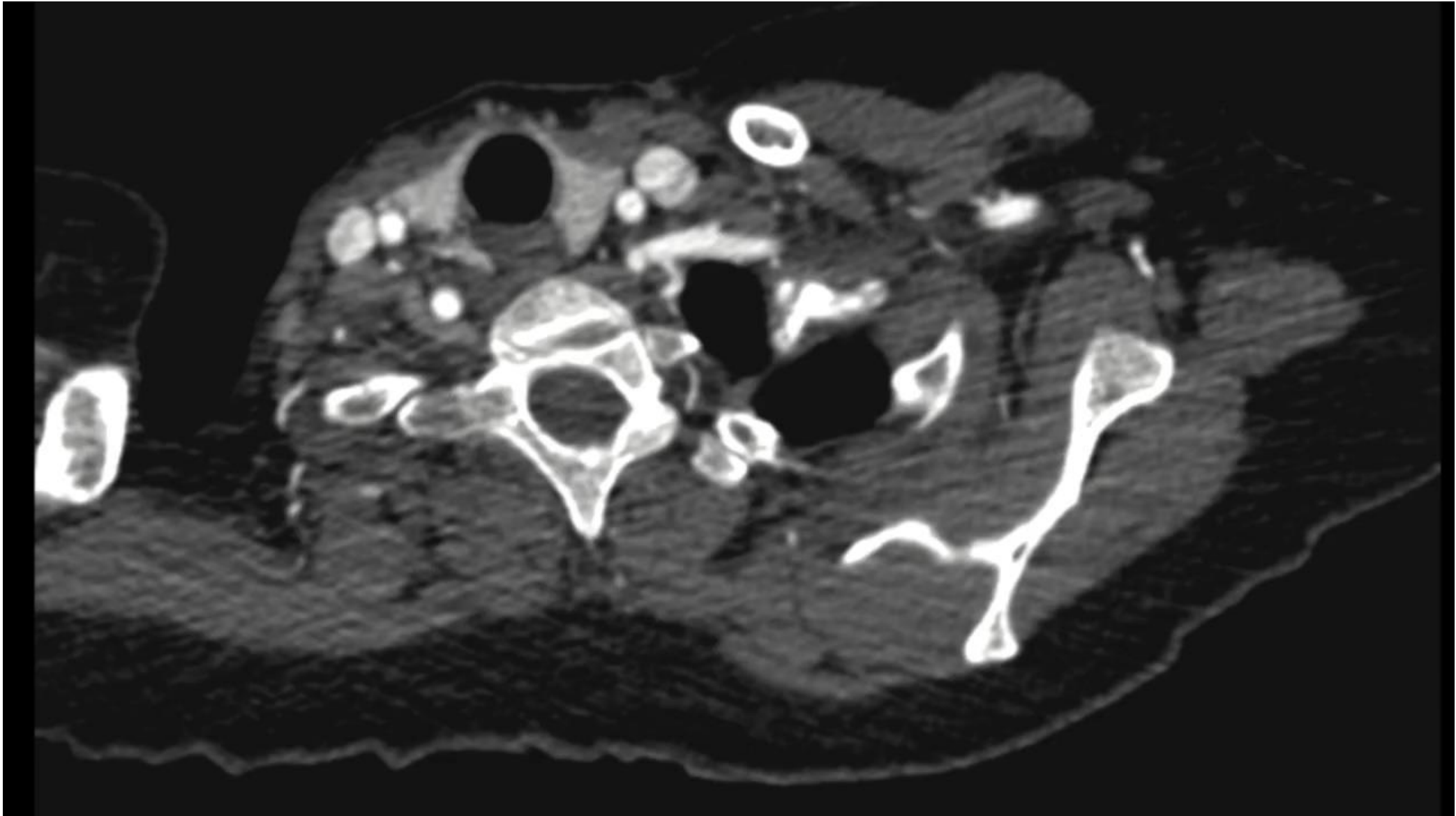
Pre-op EVAR



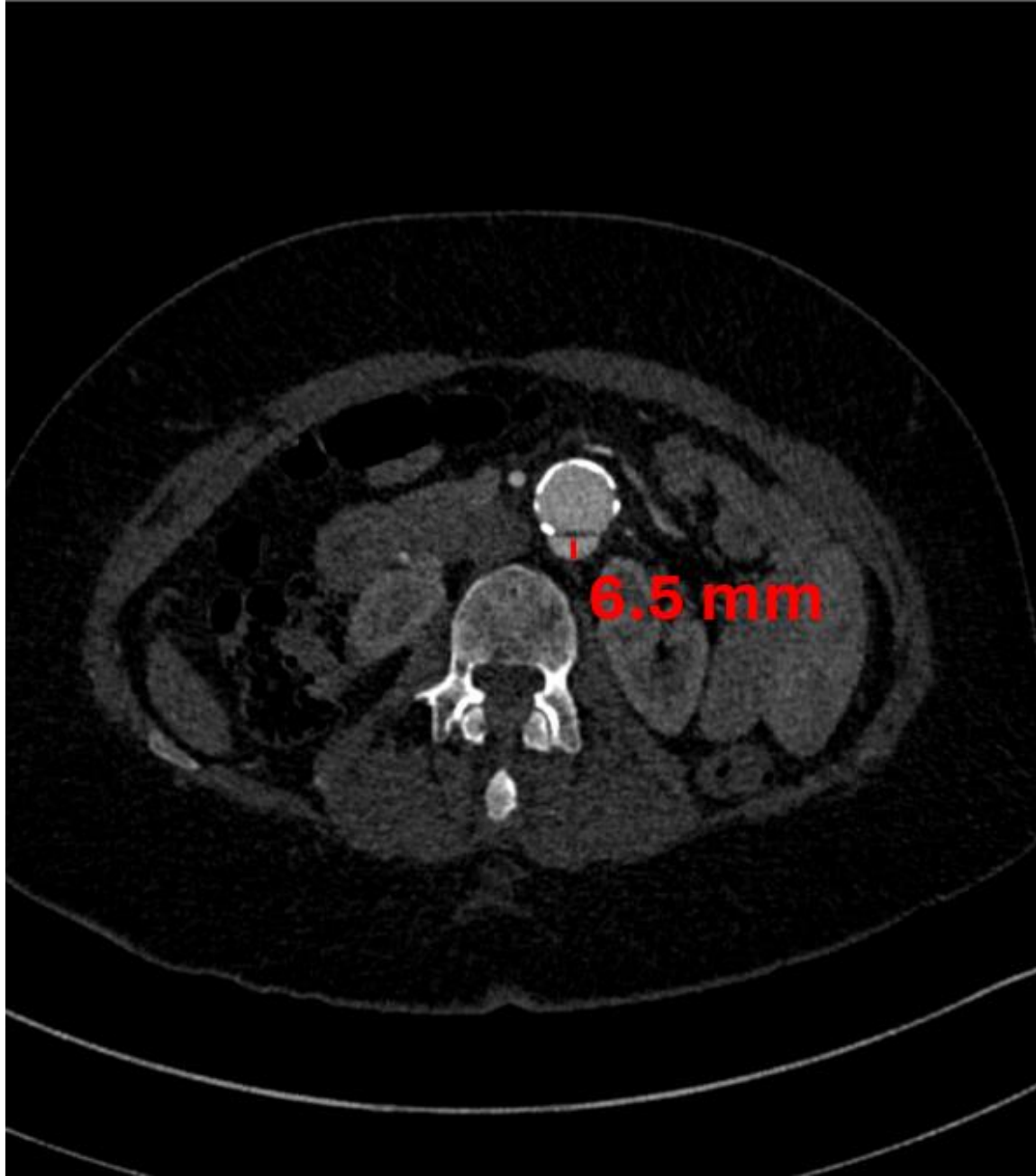
HRP



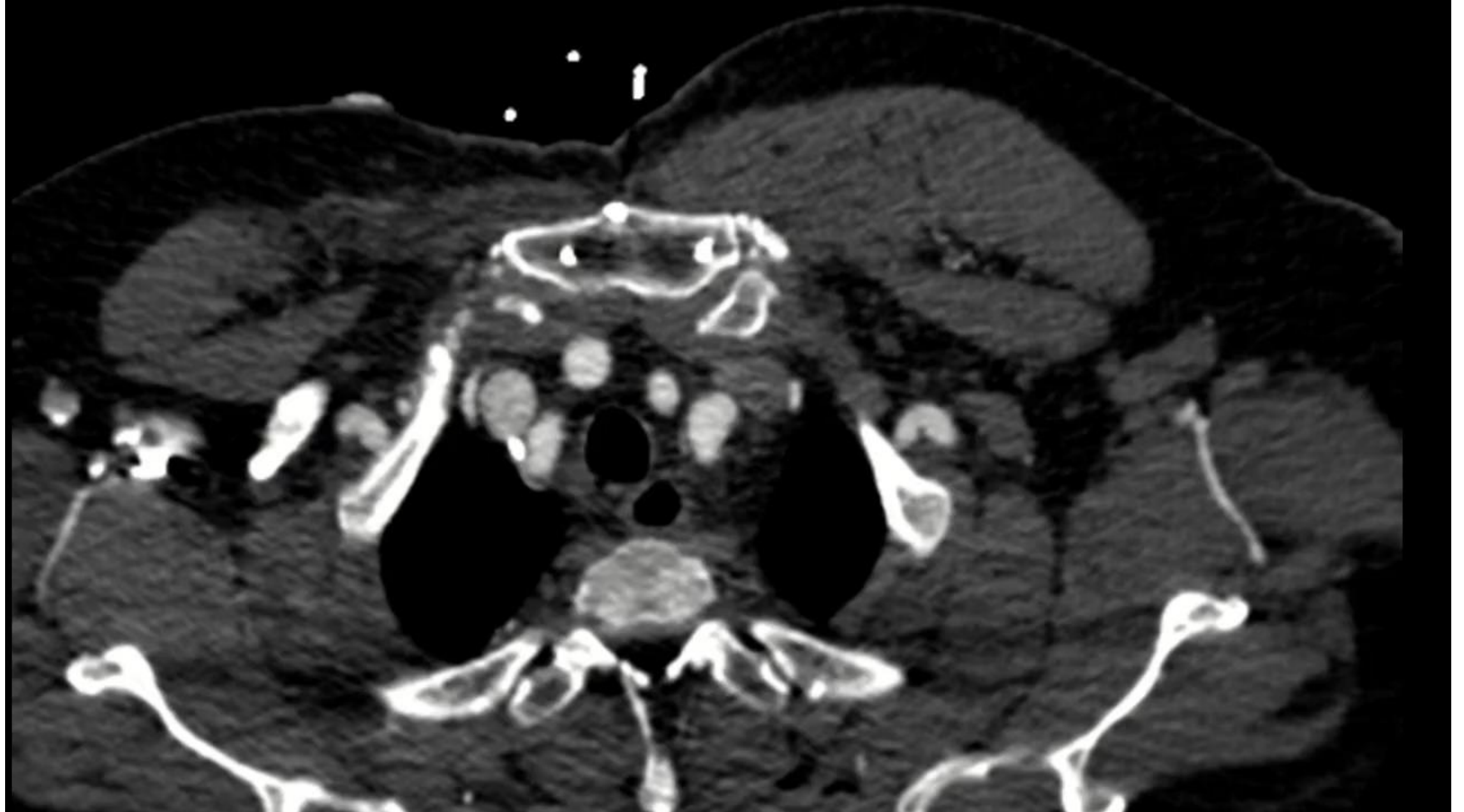
Post-op EVAR



Pre-op and post-op EVAR

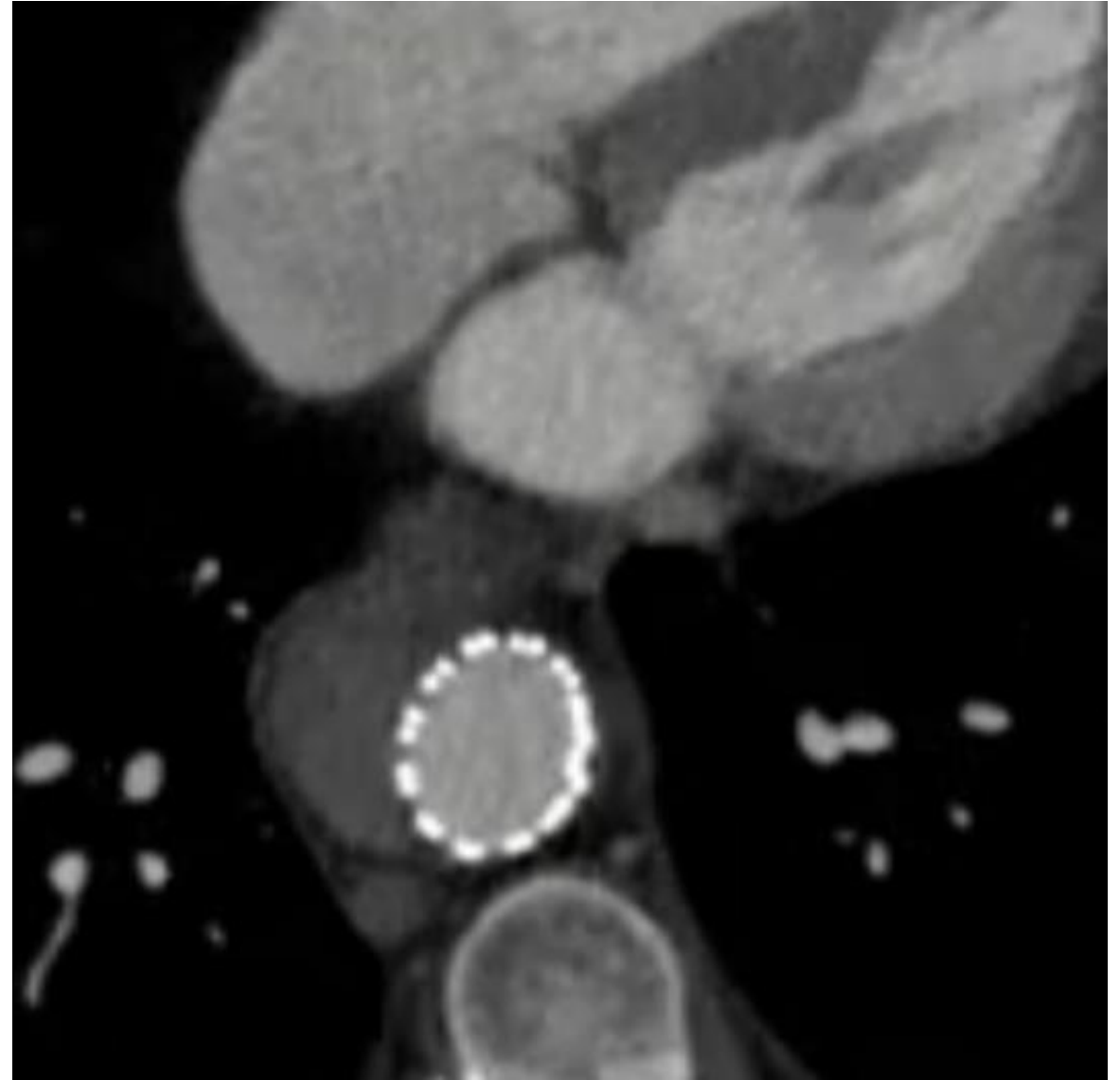
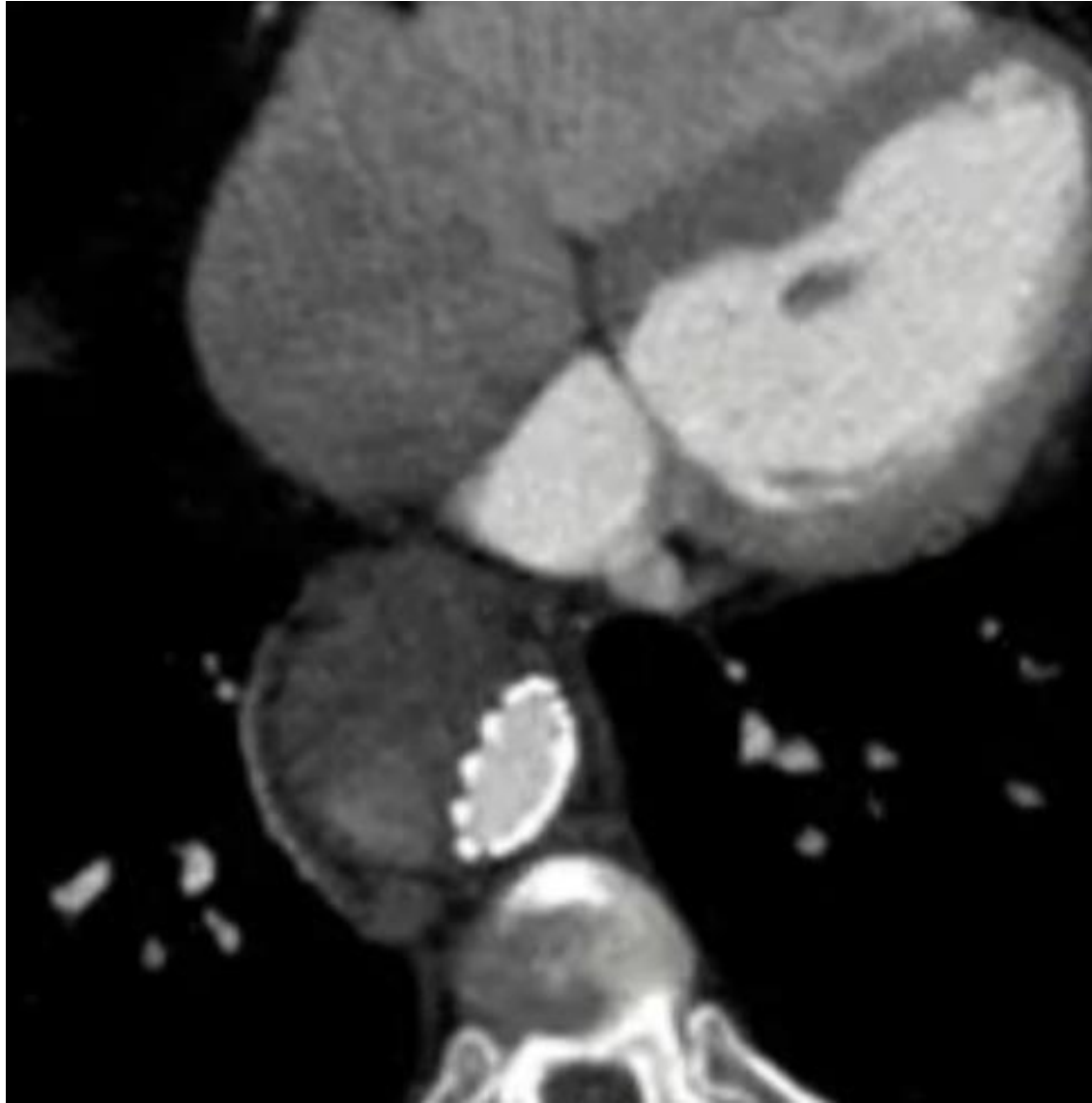


Pre-op TEVAR

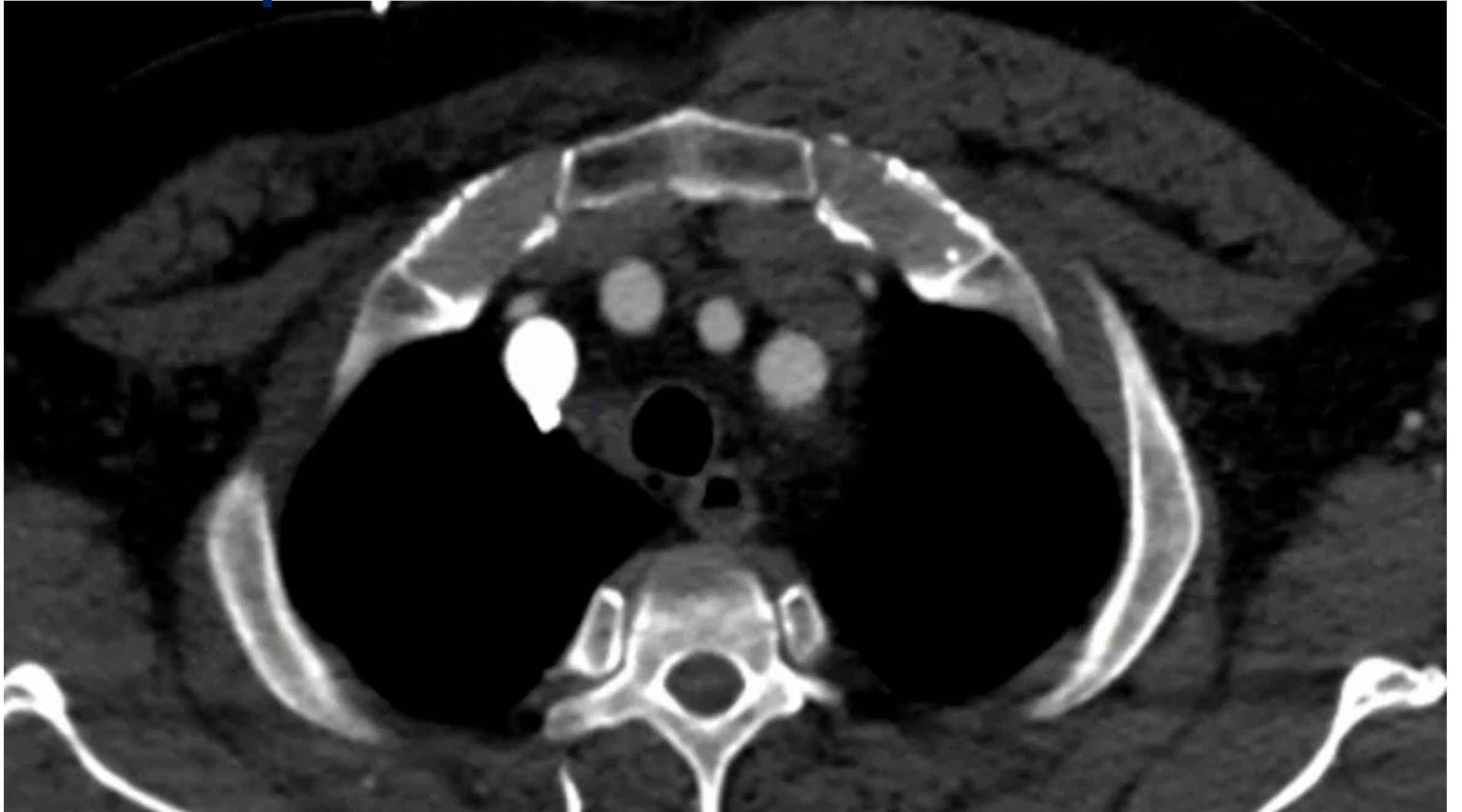




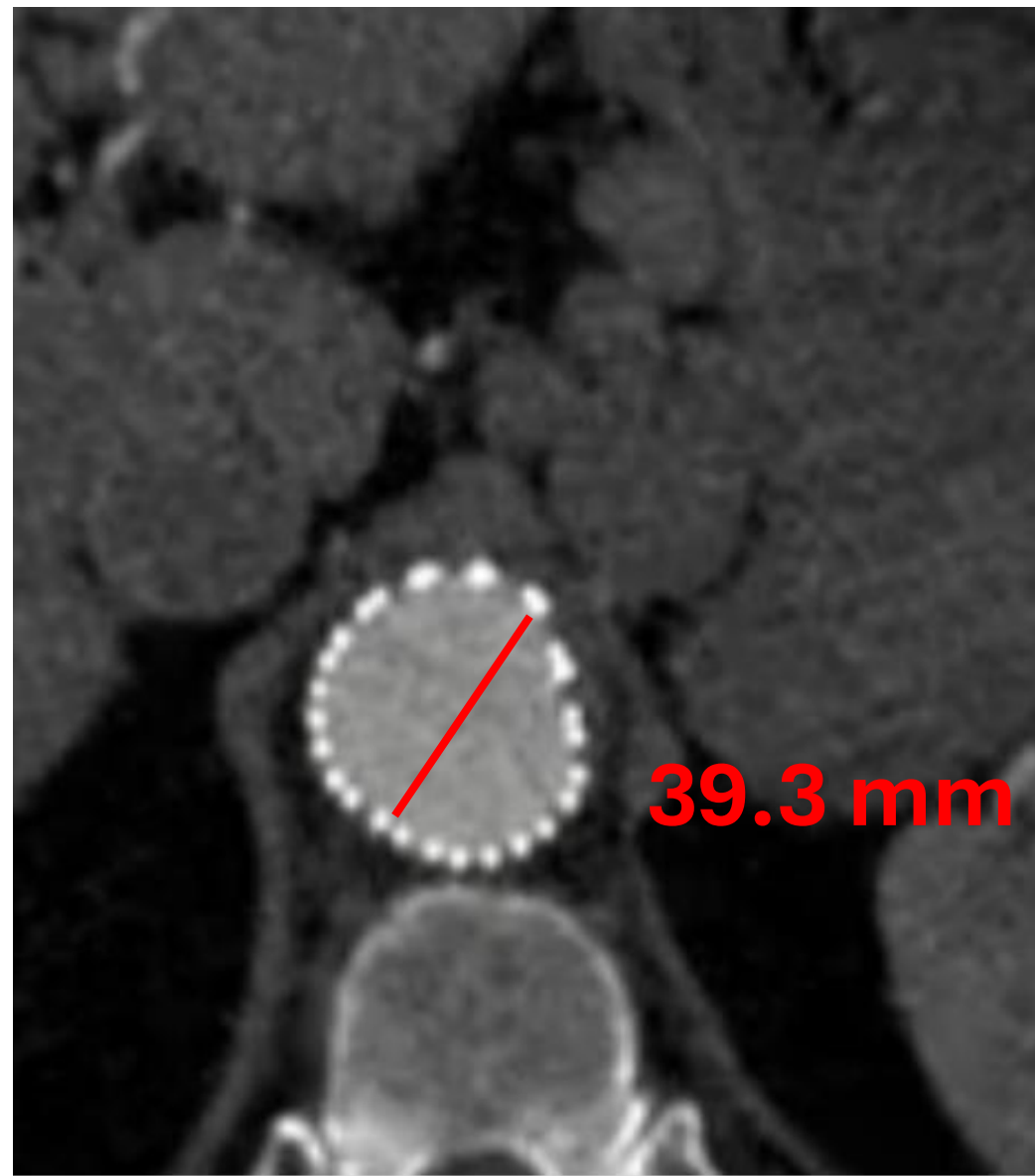
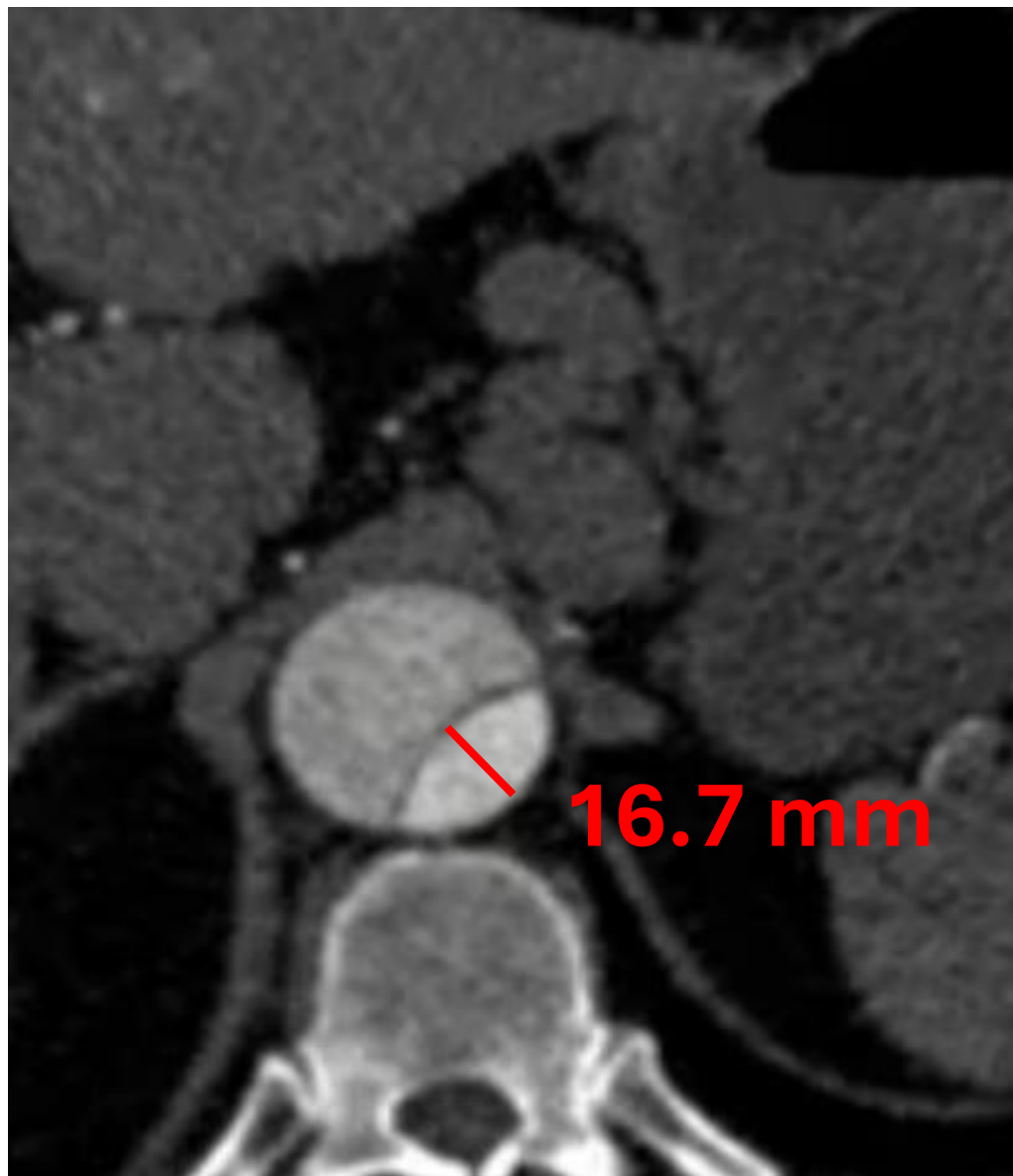
True lumen and previous graft decompression after TES



Post-op TEVAR

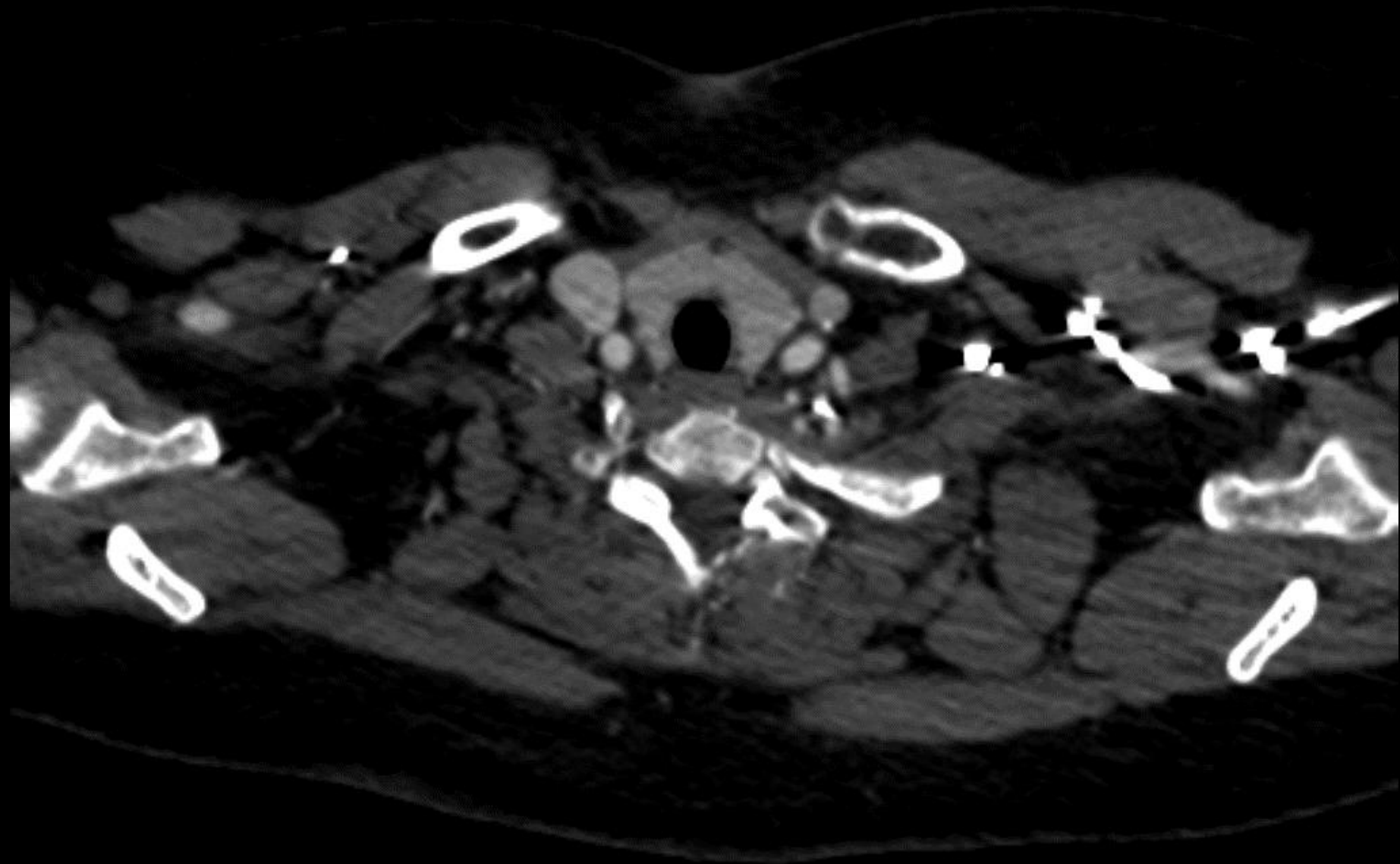


Distal landing zone optimization – TEVAR extension

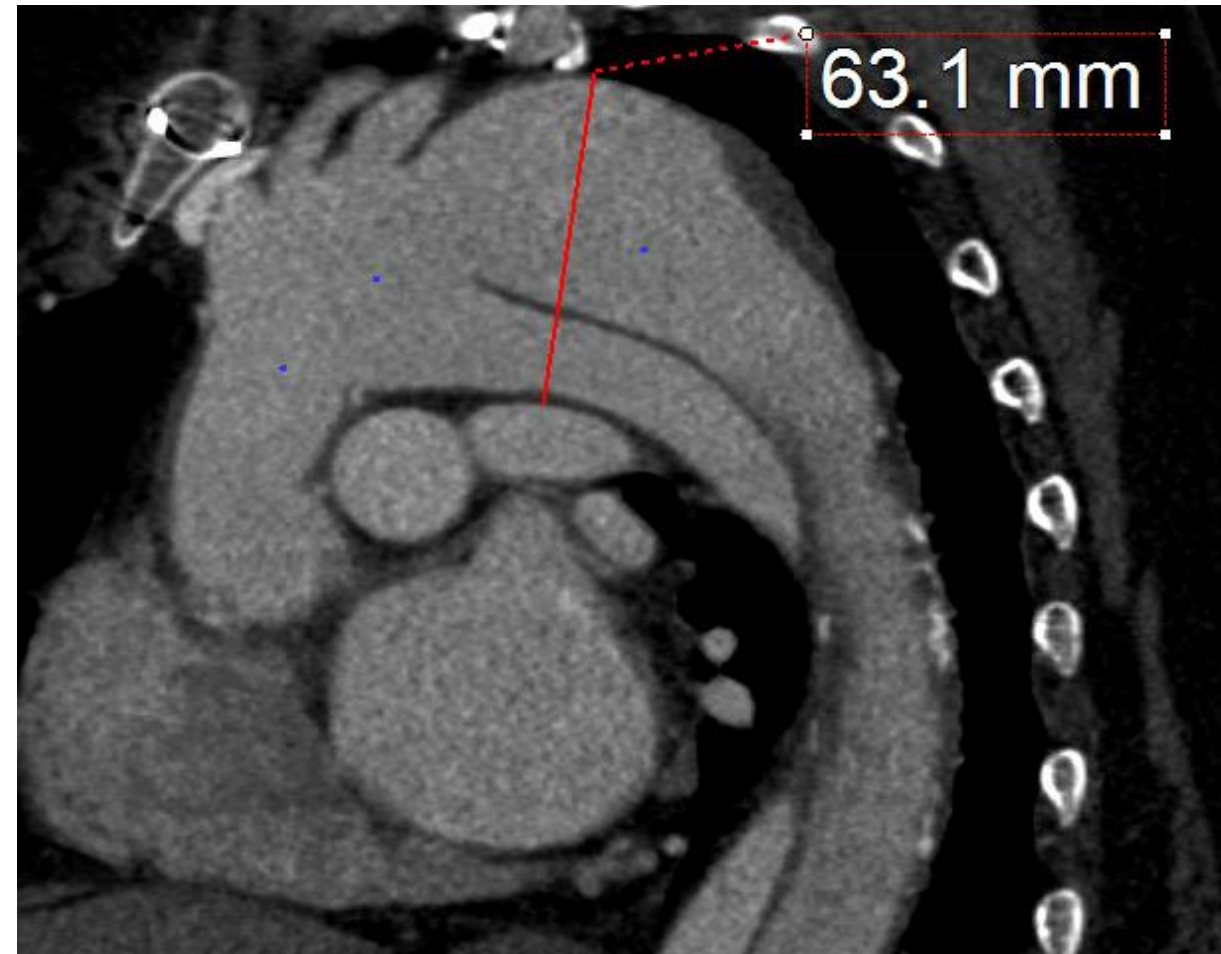
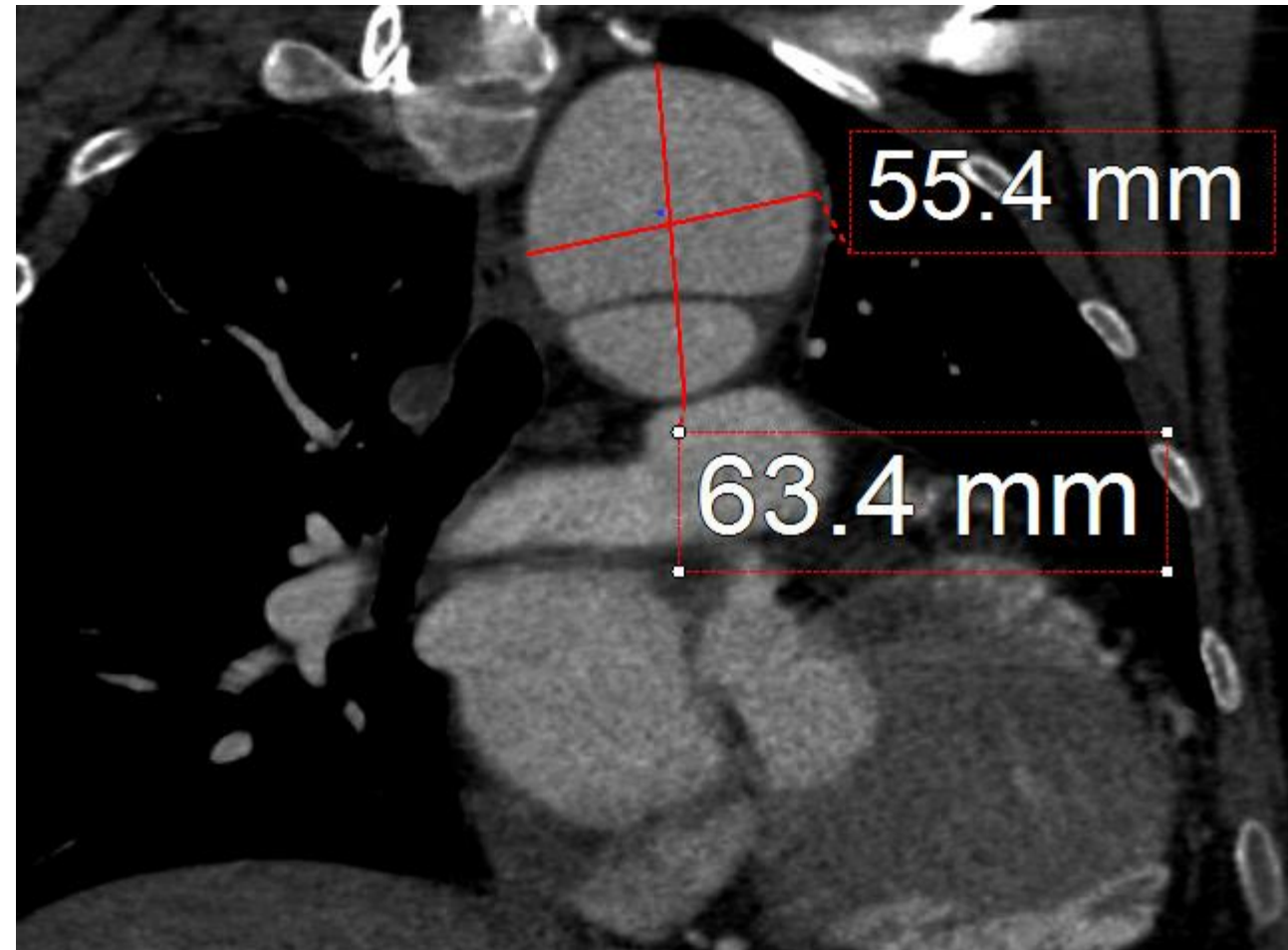




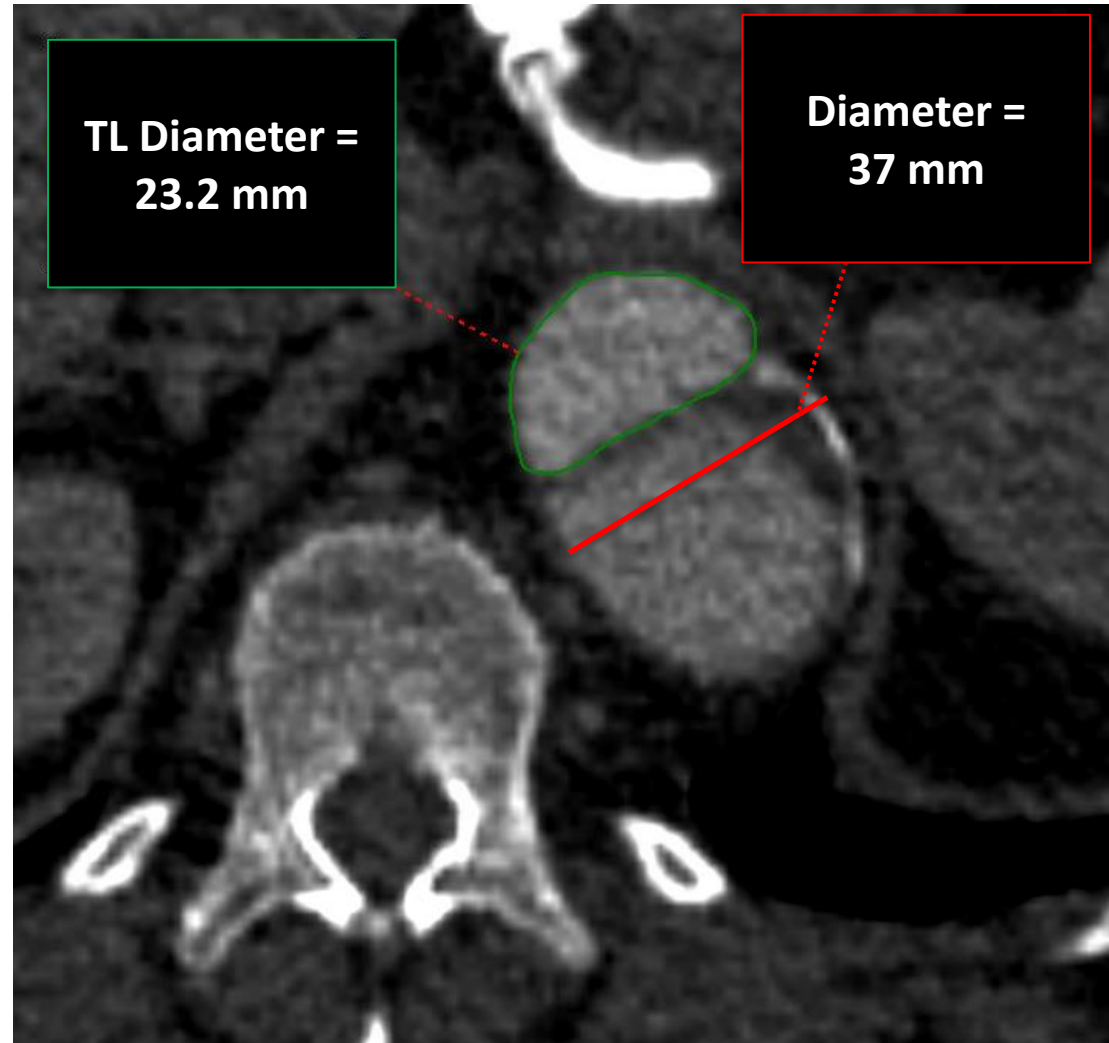
ART AORTA



Preop CTA

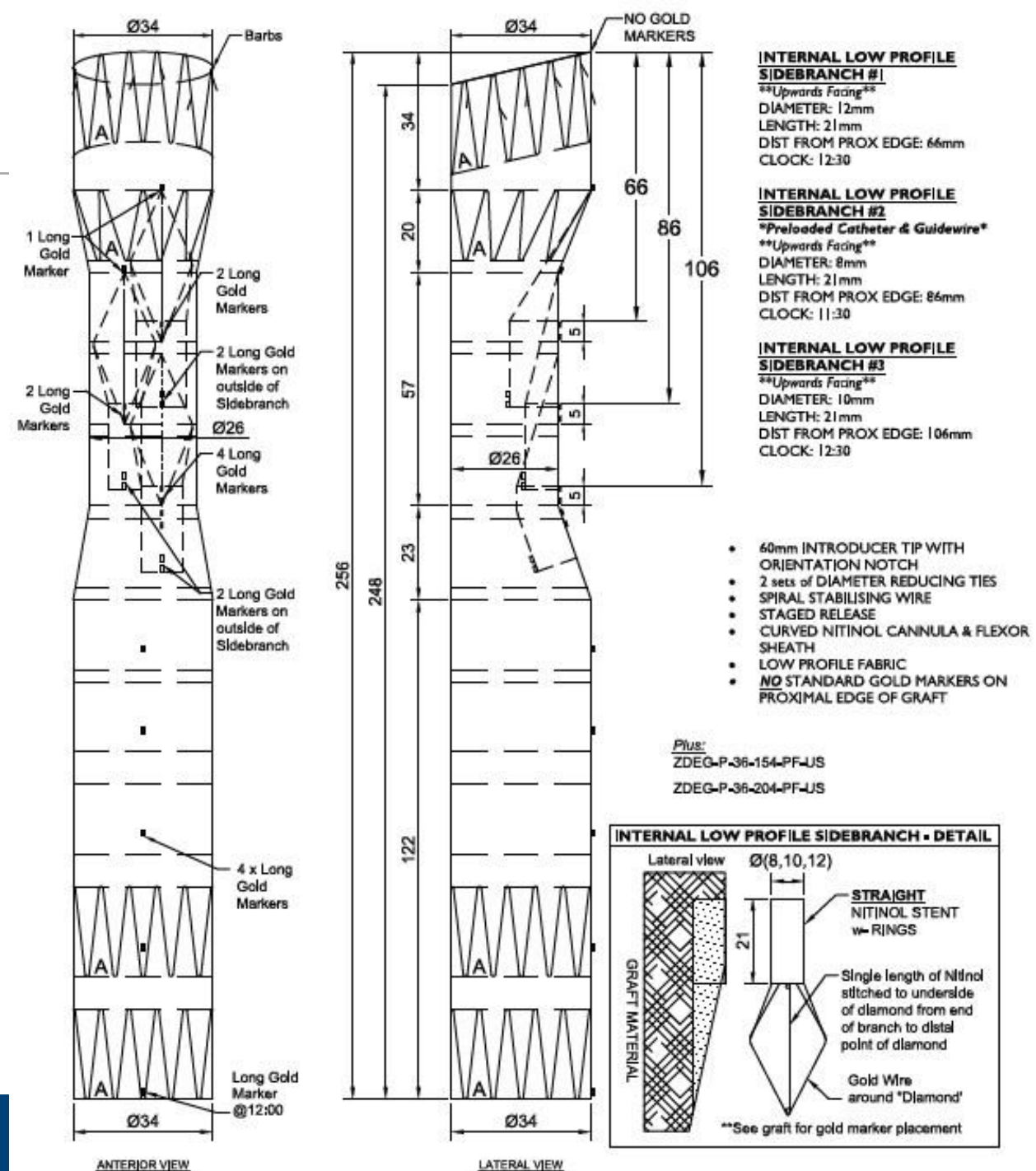


Preop CTA – Distal Landing Zone



Treatment Plan

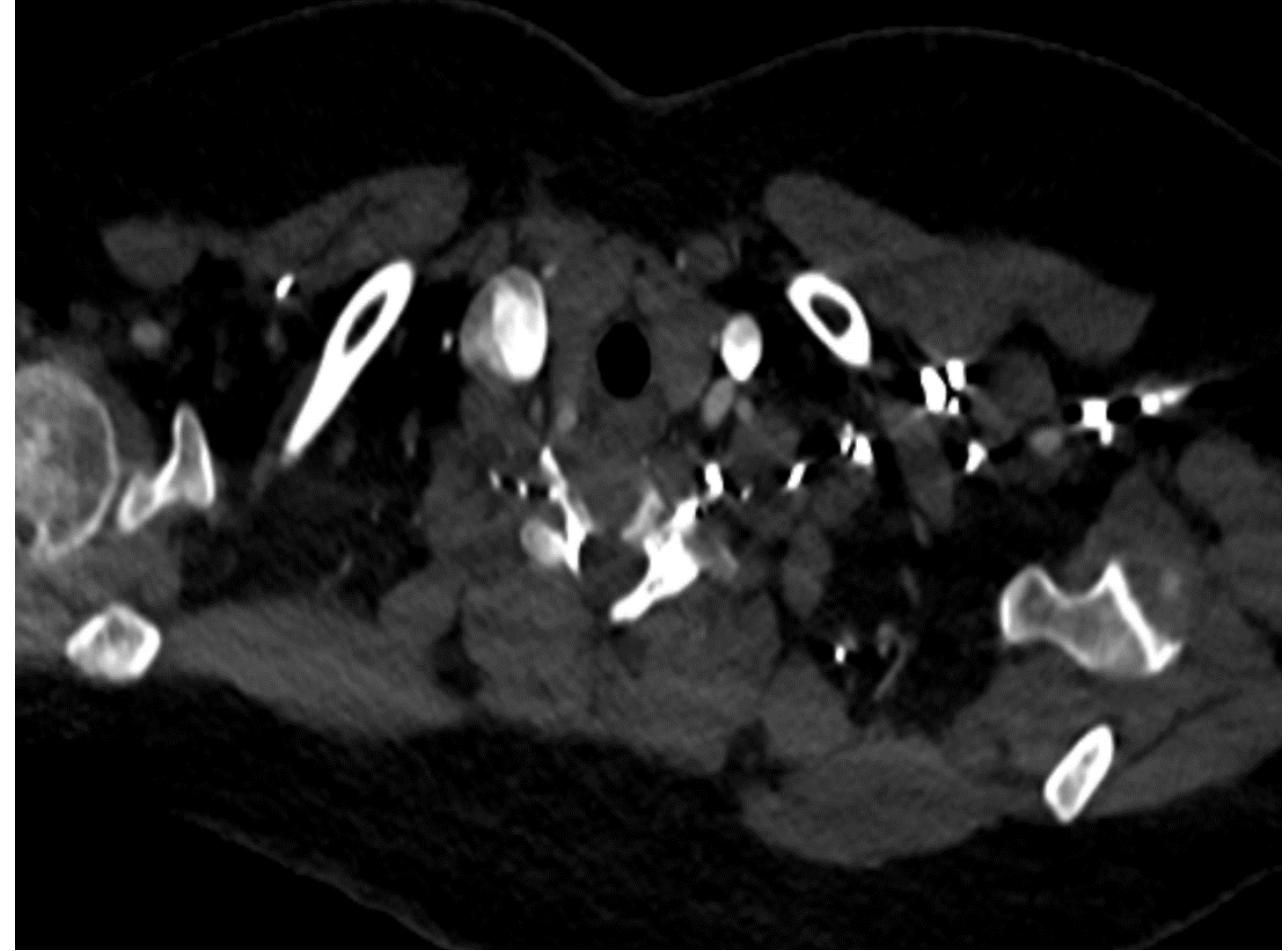
- Transcatheter electrosurgical aortic septotomy
- 3-vessel arch repair with patient-specific company-manufactured device
- Distal TEVAR



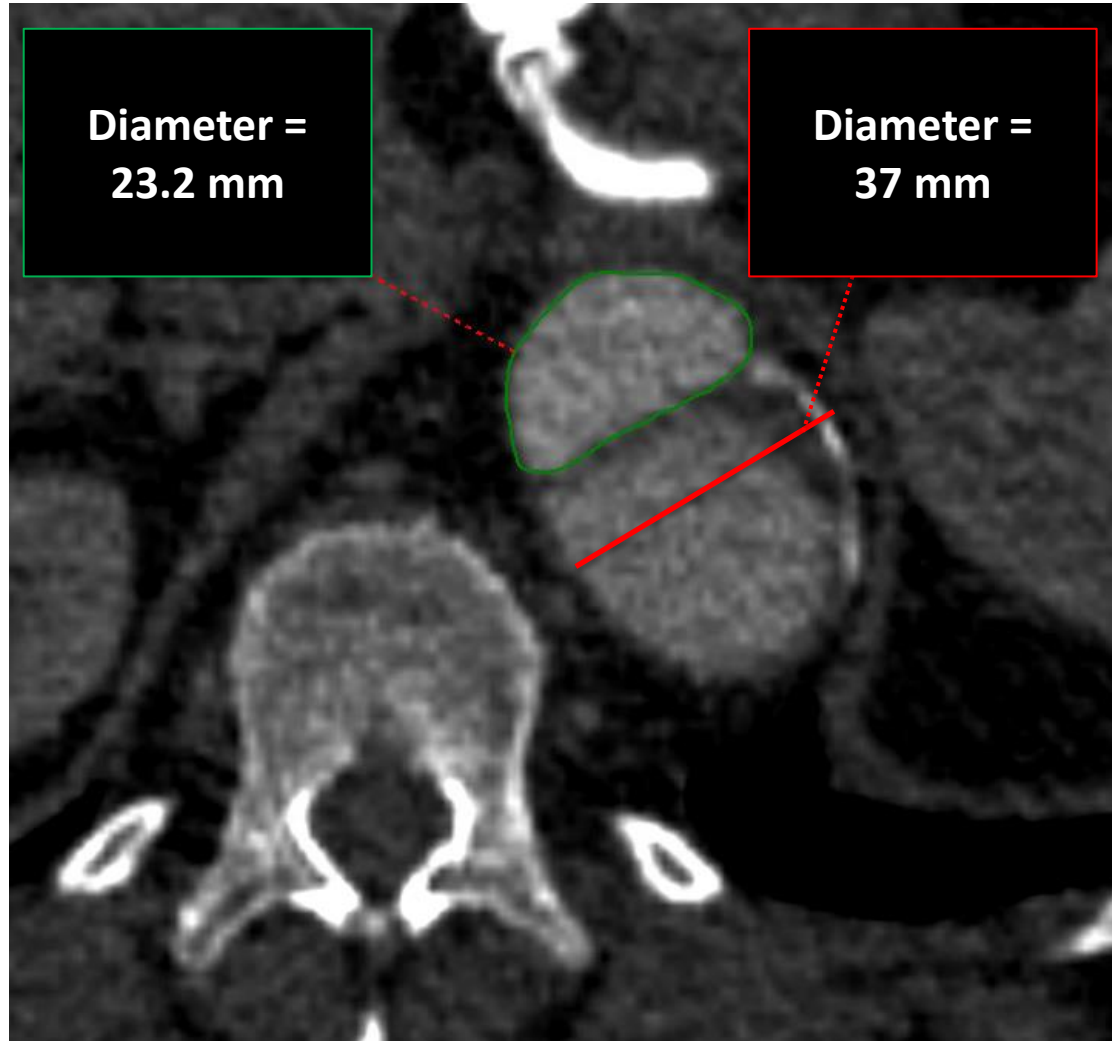


Follow-up

- **1 month FU:** reported fatigue
- CTA with Type Ib Endoleak, aneurysm sac stable



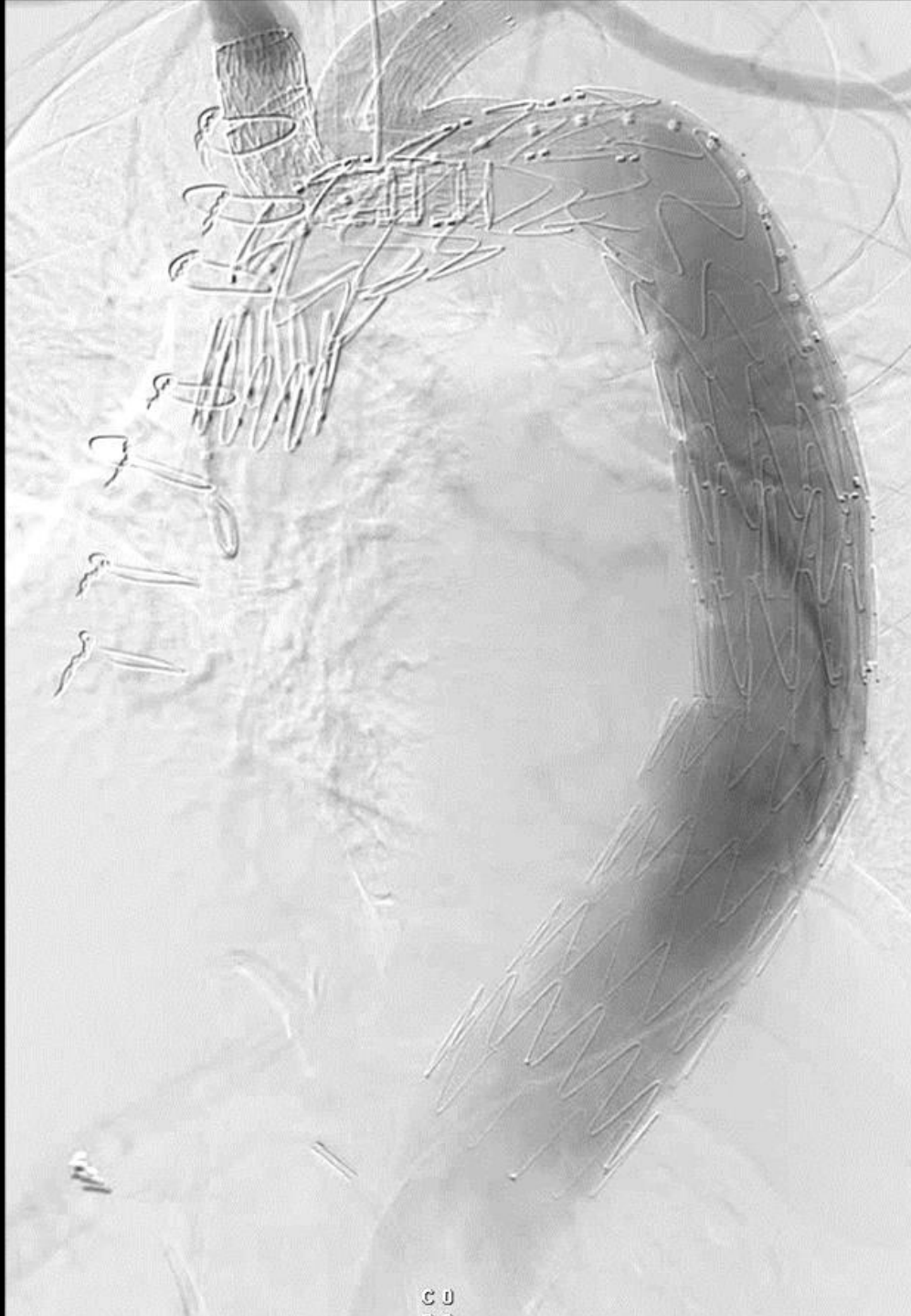
Landing Zone

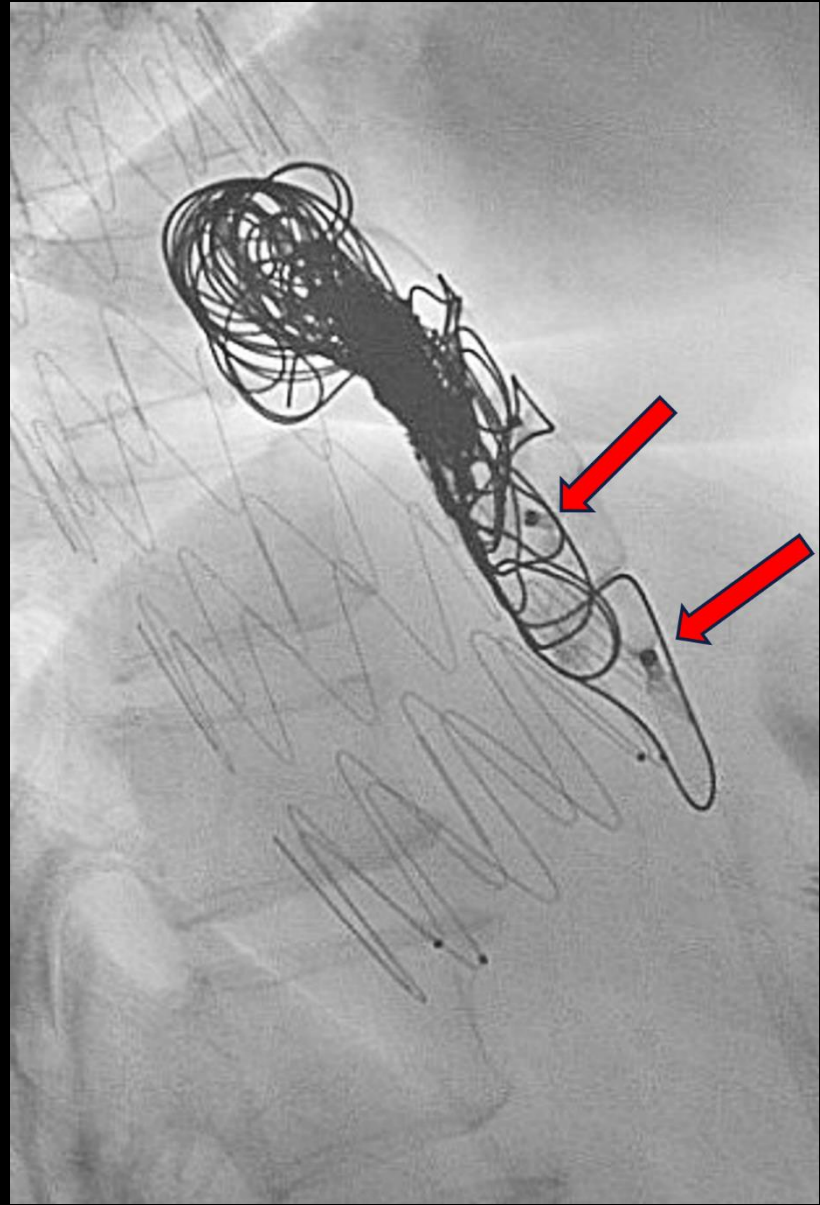
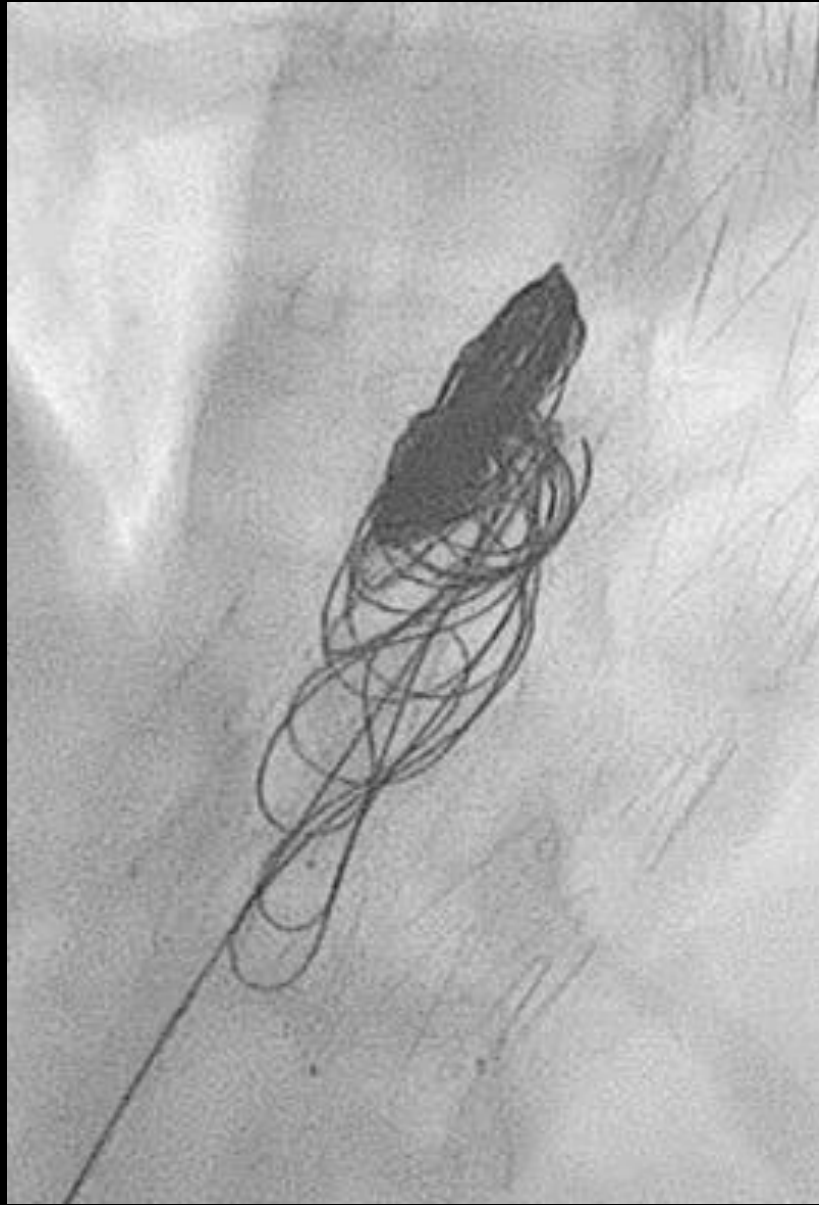
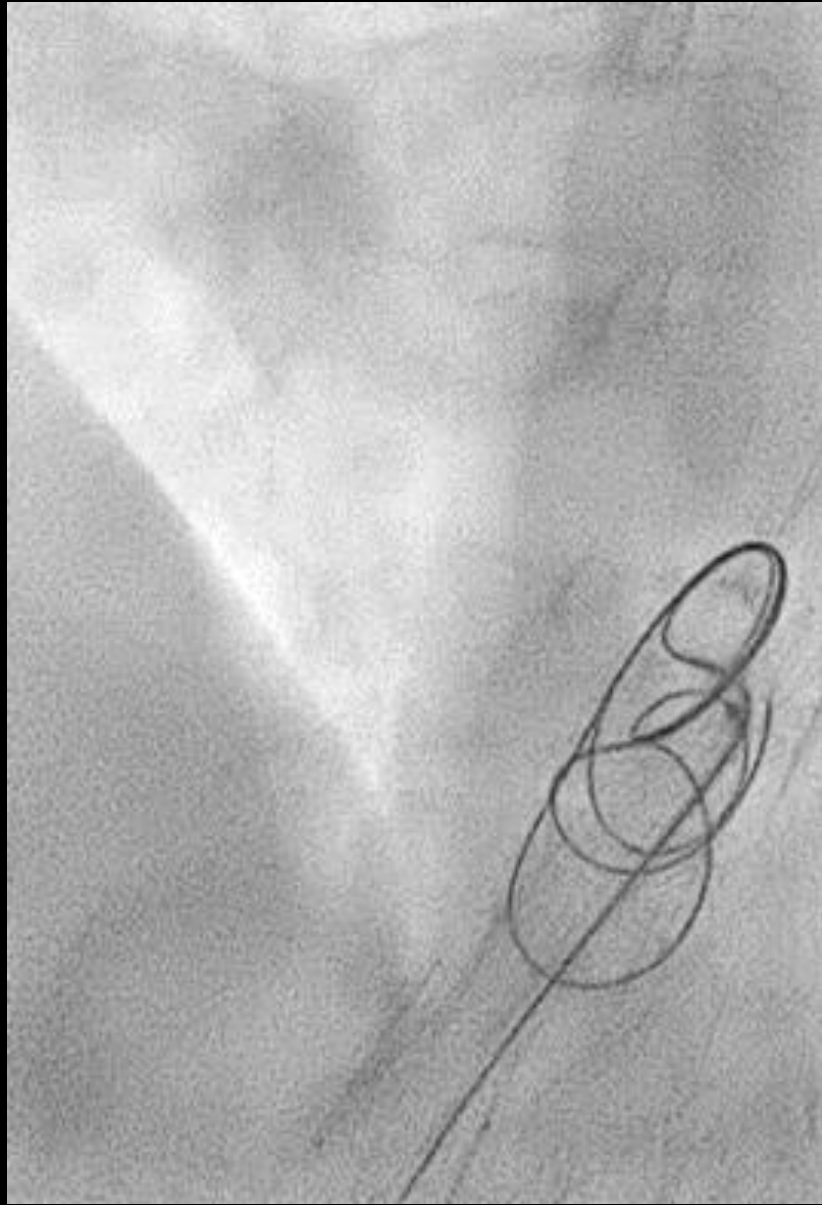


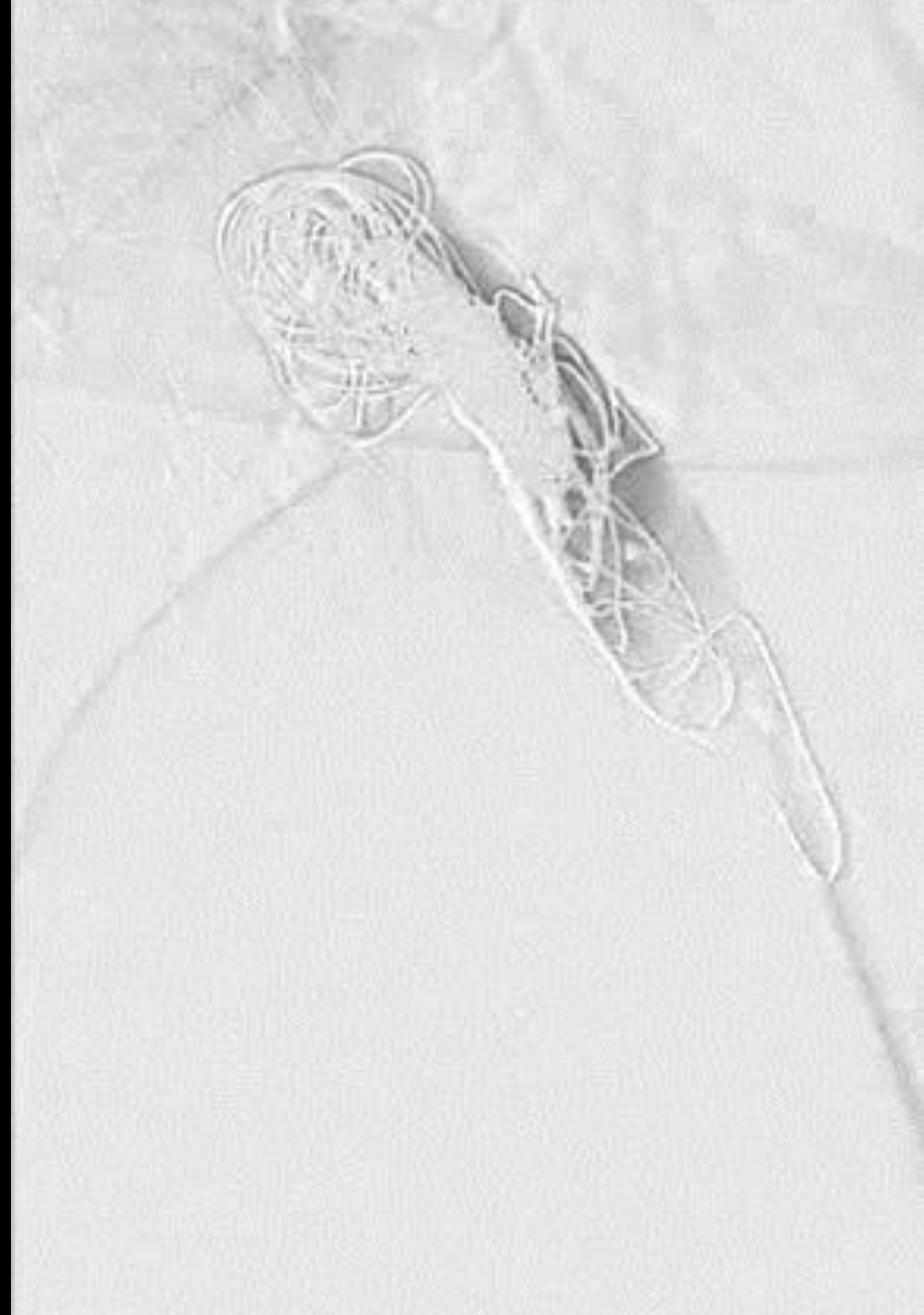
Readmission

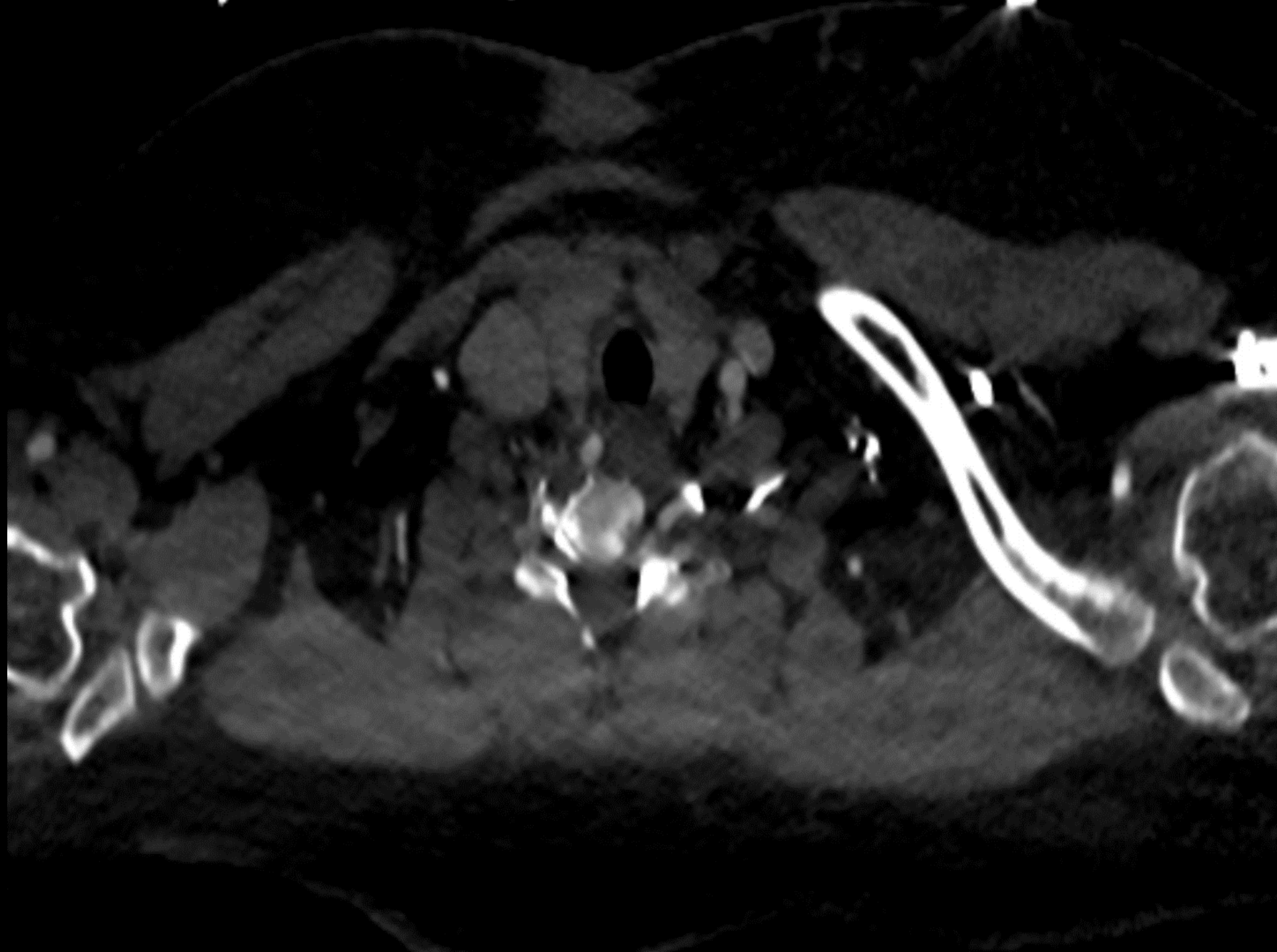
- ***2-months postop*** -- presented to ED with worsening R sided chest pain, radiating to back
- CT-A with worsening type Ib endoleak

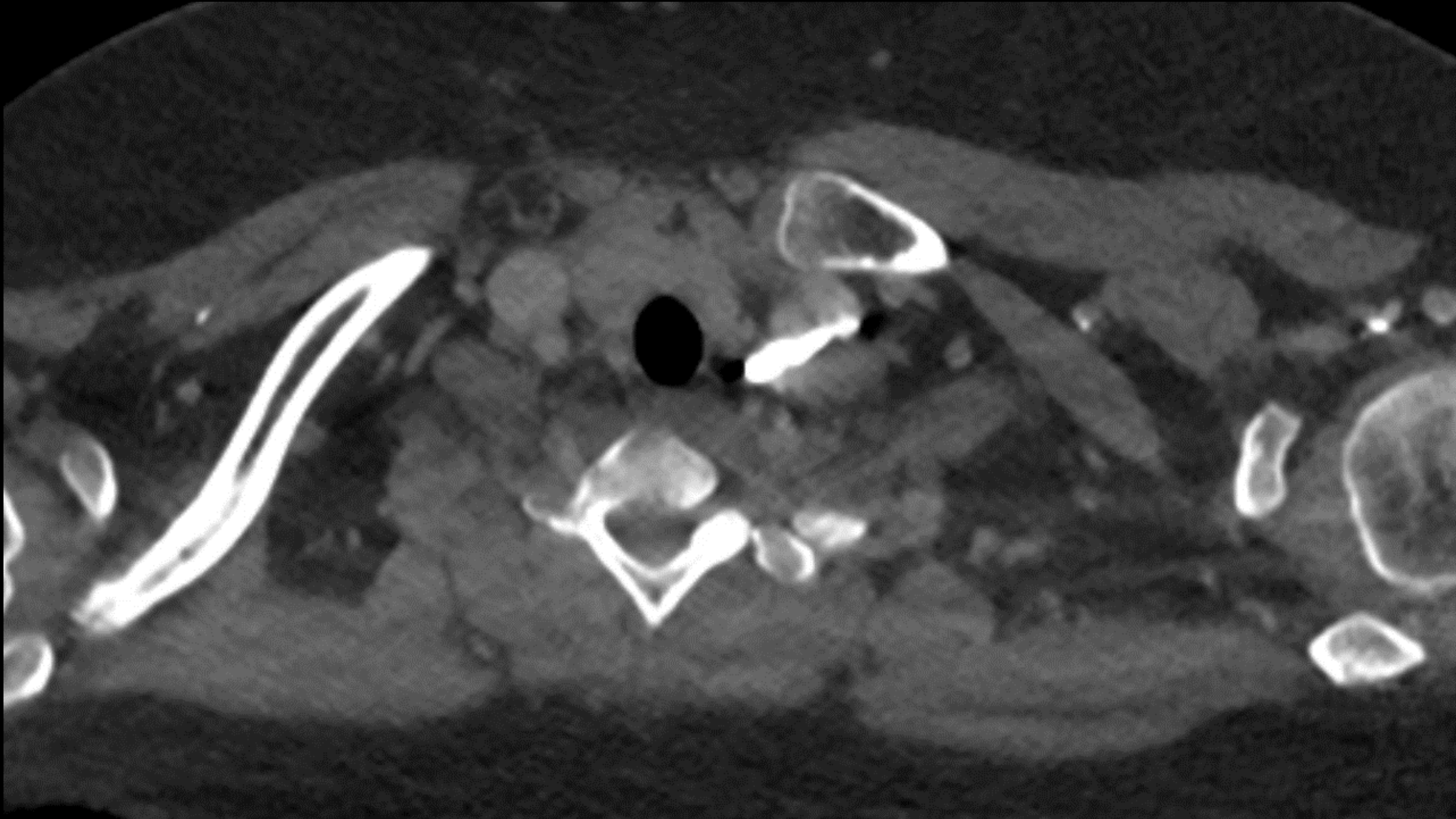












197 patients treated by endovascular repair of aortic dissections
UT-Houston & UTSW (March 2021 to October 2023)

Excluded

**Endovascular Repair
without TES**
n = 161

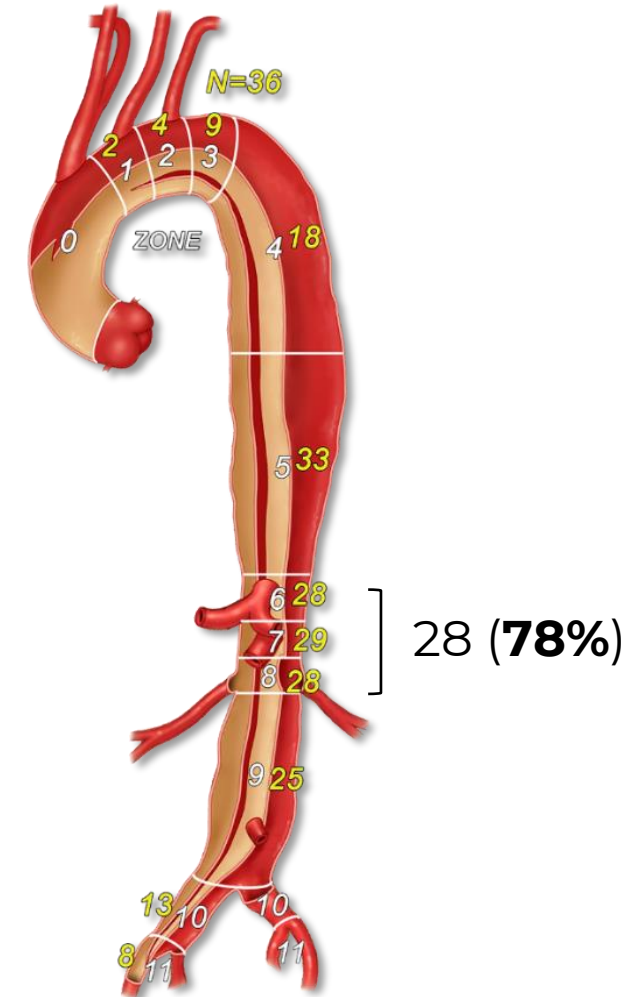
**Endovascular Repair
with TES**
n = 36 (18%)

Indications

- Creation of seal zone to minimize extent of repair
- Severe true lumen compression ($\leq 16\text{mm}$)
- Branch vessel origin from false lumen
- Organ or limb malperfusion

TES indication, extent and technical success

	n = 36	%
Indications		
True lumen compression ($\leq 16\text{mm}$)	28	78
Target artery from different lumen	19	53
Creation of proximal or distal landing zone	12	33
Organ or limb malperfusion	4	11
Technical success		
All patients (n = 36)	33	92
Chronic dissections (n = 33)	32	97
Acute dissections (n = 3)	1	33
Reasons for technical failure		
Dislodgement of dissection lamella, 2 (acute dissection)		
Inadvertent SMA dissection, 1 (chronic dissection)		
No arterial disruption or rupture		



Conclusions

- Complete false-lumen exclusion and thrombosis are desirable for treatment of dissecting aortic aneurysms
- Transcatheter electrosurgical septotomy seems to be a game changer that facilitates true lumen expansion with false lumen exclusion
- Limited septotomy for optimization of landing zones is feasible, but additional residual lumen embolization may be required
- Limited septotomy avoids stent graft-induced new entry

