

THE 26TH INTERNATIONAL EXPERTS SYMPOSIUM
CRITICAL ISSUES
IN AORTIC ENDOGRAFTING

MARCH 21 & 22 2024
COPENHAGEN/MALMÖ
SCANDIC TRIANGELN, MALMÖ

Distal Arch Aneurysms: CHIMPS Are Gone - Go For Dedicated Single Branch Devices

Alexander Zimmermann

Speaker name: **Alexander Zimmermann**

X I have the following potential conflicts of interest to report:

X Receipt of honoraria and travel support

Artivion, Cook, Medtronic, Lombard, Terumo, Microport/Endovastec,
iVascular

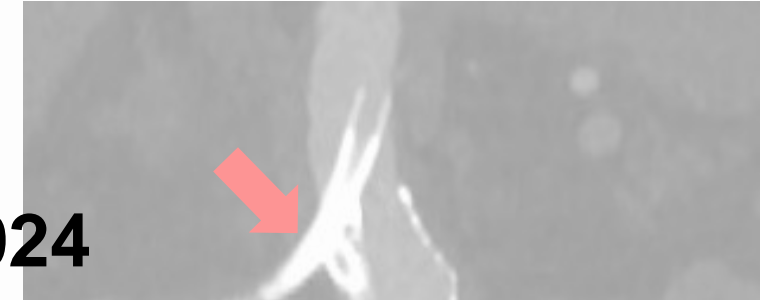
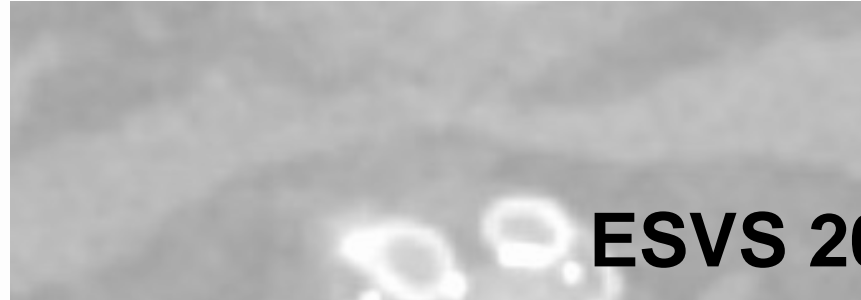
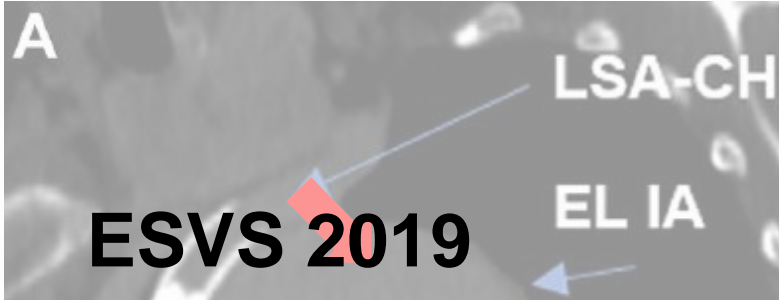
- Participation in a company-sponsored speaker bureau
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company
- I do not have any potential conflict of interest

Problems With CHIMPS

Endoleak

Infolding

Compression



Recommendation 97

In complex endovascular repair for juxtarenal abdominal aortic aneurysm, using parallel graft techniques may be considered as an alternative in the emergency setting or when fenestrated stent grafts are not indicated or available, or as a bailout, ideally restricted to ≤ 2 chimneys

Class	Level	References
I b	C	[451]

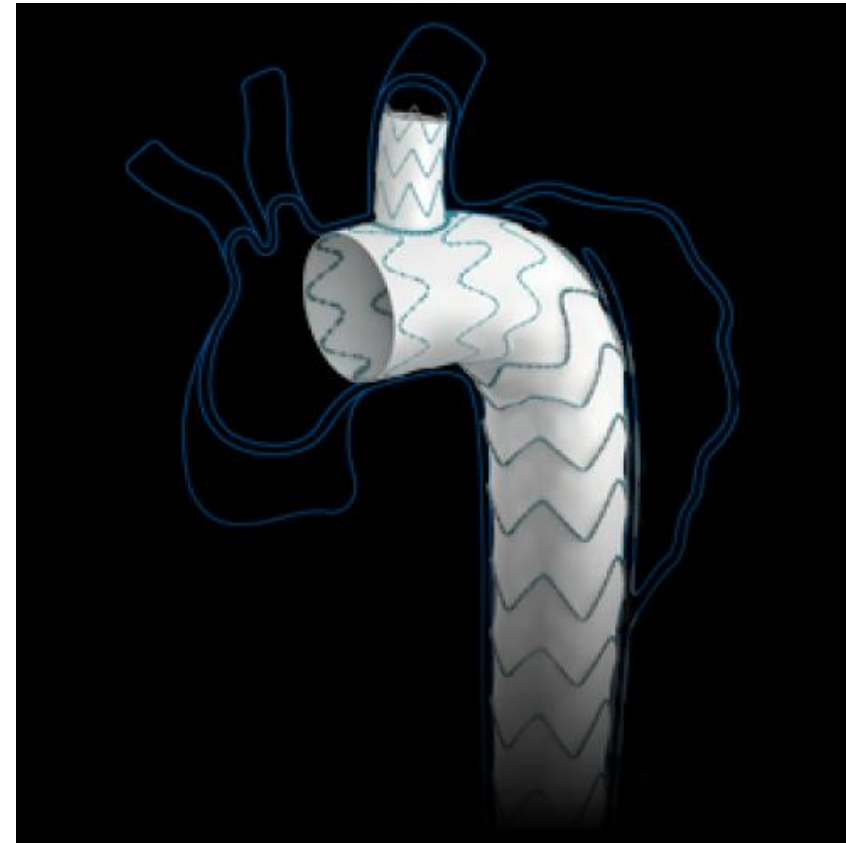
Recommendation 122

Changed

Endovascular repair for a complex abdominal aortic aneurysm using parallel graft techniques should only be considered as an option in the emergency setting, or as a bailout, and ideally be restricted to ≤ 2 chimneys.

Class	Level	References	ToE
I a	C	Donas <i>et al.</i> (2015), ⁹⁹² Taneva <i>et al.</i> (2021), ⁹⁹³ Scali <i>et al.</i> (2018) ⁹⁹⁶	

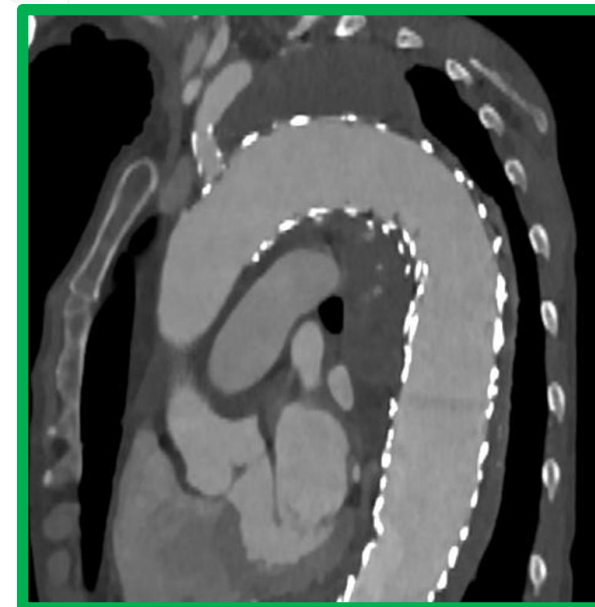
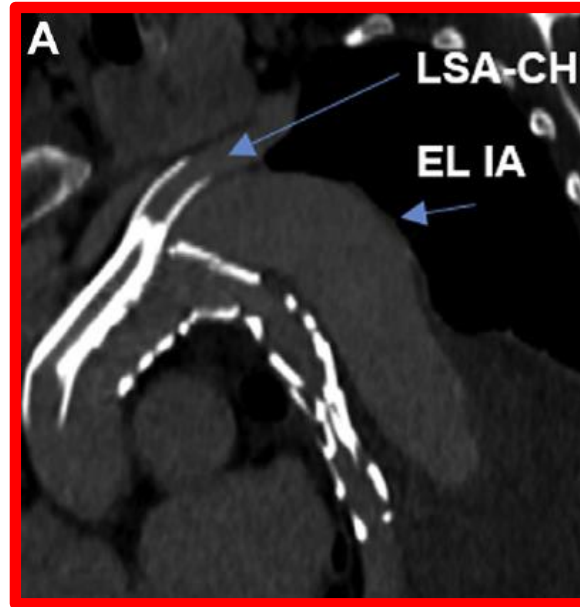
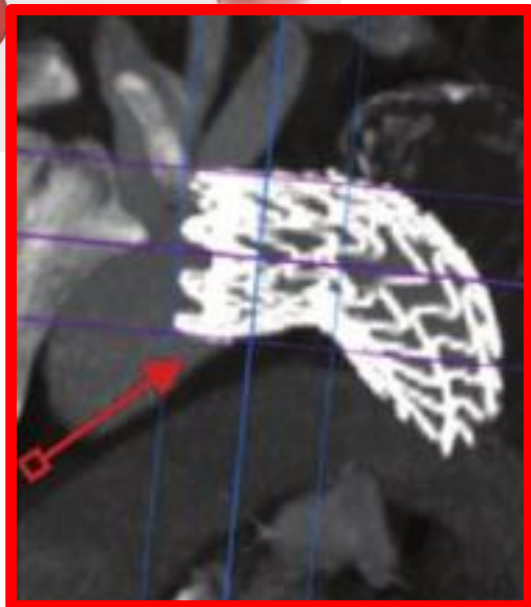
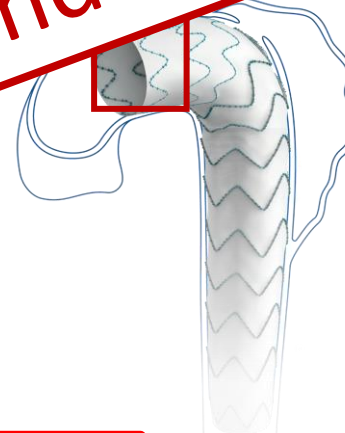
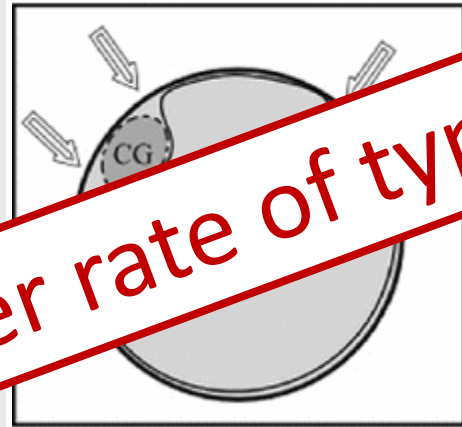
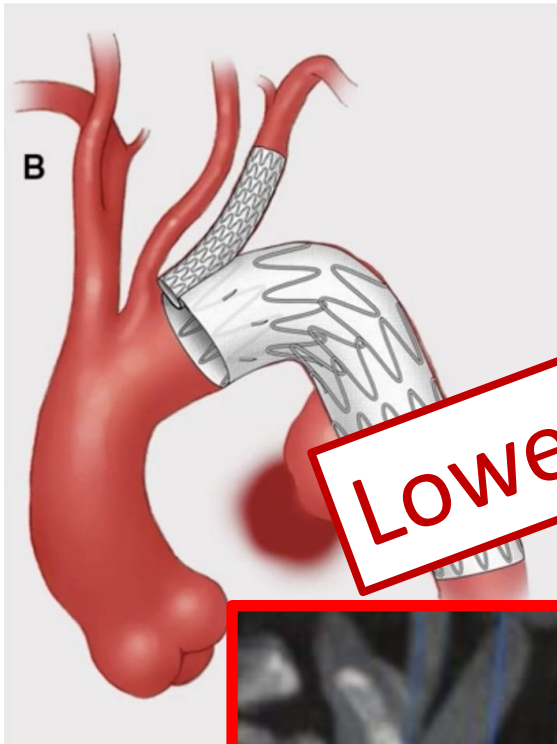
Available Single Branch TEVARs



Advantage

Longer, better and more... ng zone!

Lower rate of type Ia endoleaks!?

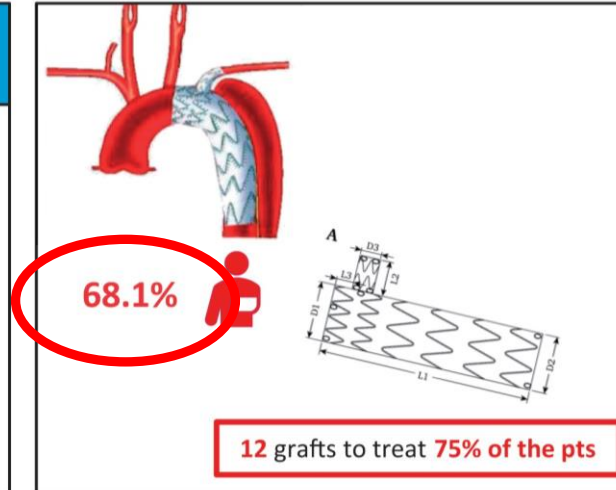


What About Suitability

Leone N, et al. Eur J Cardiothorac Surg. 2023

Summary

- The Castor USBE was suitable to treat 68.1% of TEVAR patients with landing in zone 2
- Three-quarters of the patients could be treated with 21 configurations, which can be reduced to 12 making a future off-the-shelf application possible



Magee GA, et al. J Vasc Surg. 2019

Criteria	N = 57
1. Aortic diameter at the proximal seal zone	56 (98%)
2. Covered stent graft length proximal to the branch portal	28 (49%)
3. Target side branch vessel diameter	48 (84%)
4. Target side branch vessel length	41 (72%)
5. Adequate access vessel caliber	34 (60%)
Meeting criteria	
Criteria 1-4	20 (35%)
Criteria 1-5	16 (28%)
No criteria	0 (0%)
Any 1 criterion	1 (2%)
Any 2 criteria	8 (14%)
Any 3 criteria	12 (21%)
Any 4 criteria	20 (35%)

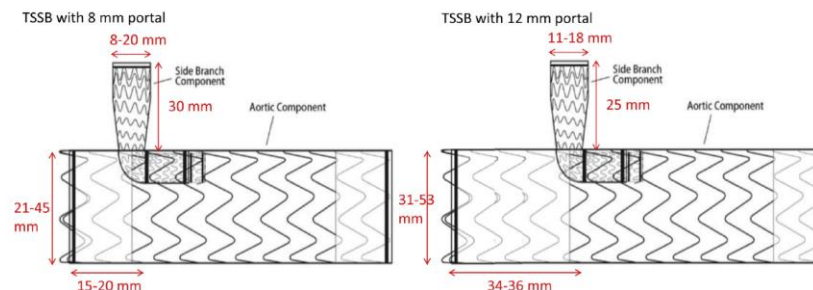
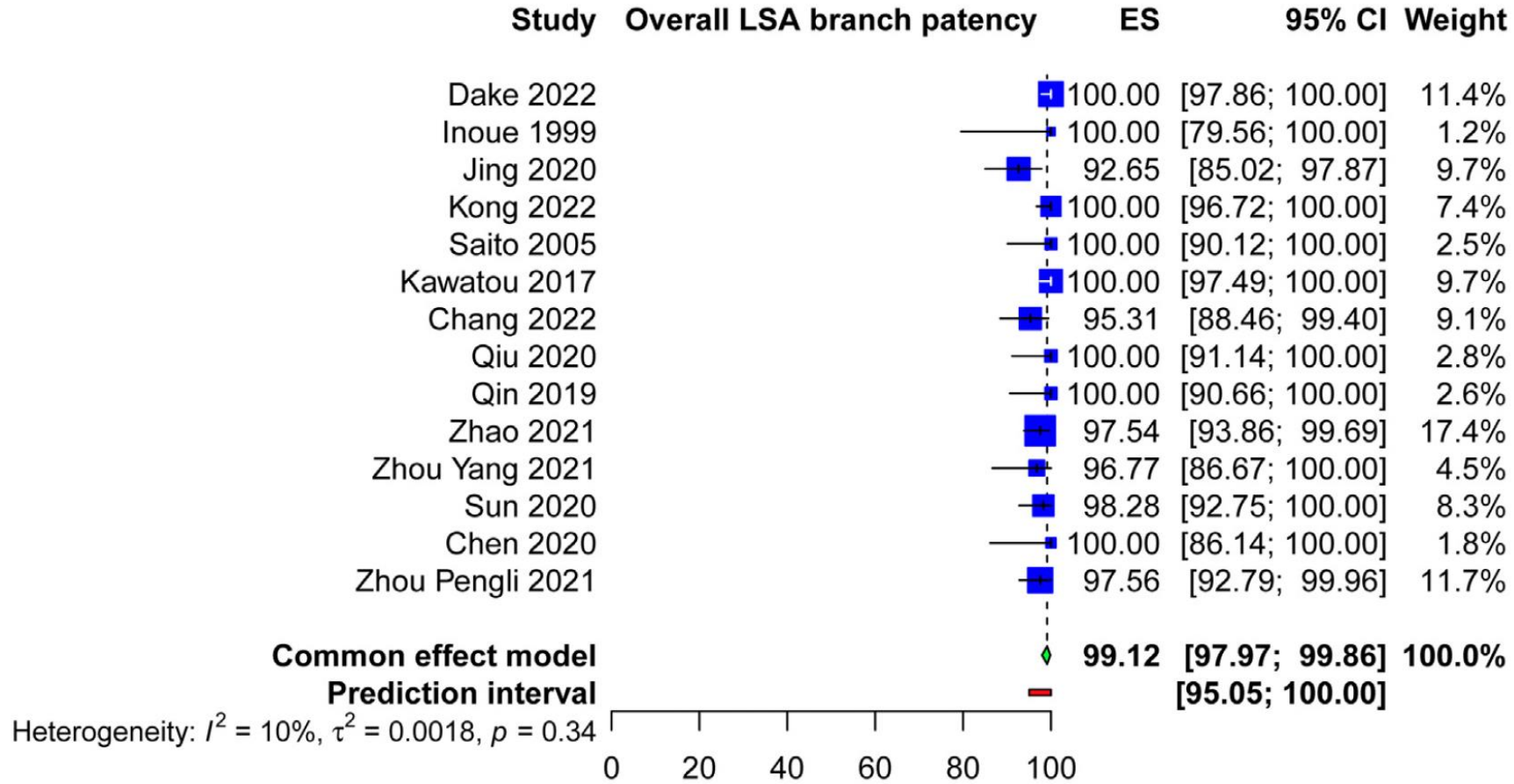


Table I. Baseline study characteristics

Study	Type	Location	Period (years)	Device	Total patients (<i>n</i>)	Follow-up (months)	Type of lesion			
		City, province, country					Aneurysm	TBAD	Pseudo-aneurysm	PAU
Dake 2022	PCS	Tucson, AZ; Plano, TX; Los Angeles, CA; Madison, WI; Seattle, WA; Ann Arbor, MI; Baltimore, MD; and Houston, TX, USA	2016–2019	Gore TAG	84	12	84	0	0	0
Inoue 1999	PCS	Toyohashi, Aichi, Japan	1995–1998	Inoue BSG	14	12.6	8	6	0	0
Jing 2020	PCS	Shanghai, Harbin, Jiangsu, Hunan, Beijing, China	2013–2015	Castor SG	73	61	0	73	0	0
Kong 2022	RCS	Heifei, Anhui, China	2019–2021	Castor SG	52	16.8	6	42	0	4
Saito 2005	RCS	Kyoto and Kokura, Japan	1999–2004	Inoue BSG	17	26	11	5	1	0
Kawatou 2017	RCS	Kyoto, Kyoto, Japan	2007–2014	Inoue BSG	68	43.2	47	21	0	0
Chang 2022	RCS	Jinan, Shandong, China	2017–2020	Castor SG	69	12	0	63	0	6
Qiu 2020	RCS	Qingdao, Shandong, China	2015–2019	Castor SG	19	18.9	5	13	0	1
Qin 2019	RCS	Yantai, Shandong, China	2017–2018	Castor SG	18	8	0	18	0	0
Zhao 2021	RCS	Xining, Qinghai, China	2016–2019	Castor SG	122	15.6	0	122	0	0
Sun 2020	RCS	Guilin, Guangxi, China	2018–2019	Castor SG	58	3	0	58	0	0
Zhou Yang 2021	RCS	Chengdu, Sichuan, China	2018–2019	Castor SG	33	7.23	0	33	0	0
Chen 2020	RCS	Guangdong, Shenzhen, China	2017–2019	Castor SG	12	24	0	12	0	0
Zhou Pengli 2021	RCS	Zhengzhou, Henan, China	2017–2019	Castor SG	88	6	7	67	0	14

RCS, retrospective case series; PCS, prospective case series; TBAD, type B aortic dissection; PAU, penetrating atherosclerotic ulcer.

Metaanalysis



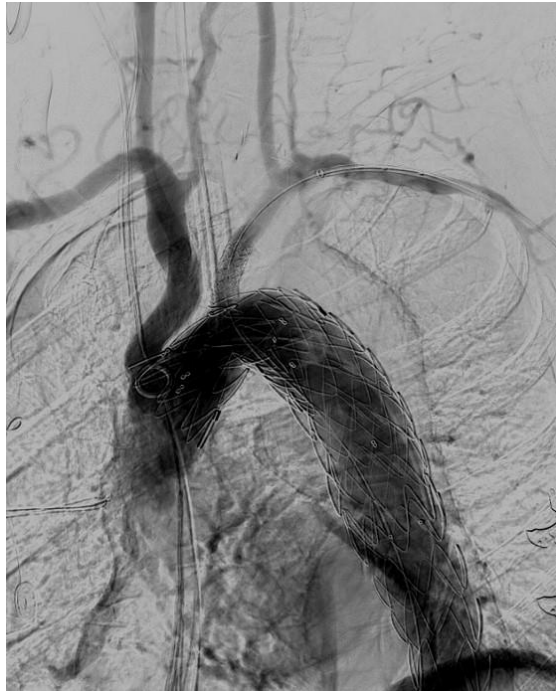
Comparison

Author/study/year	30-day mortality <i>n</i> (%)	Stroke <i>n</i> (%)	Spinal cord ischemia <i>n</i> (%)	Left arm claudication <i>n</i> (%)	Endoleak <i>n</i> (%)	Restenosis <i>n</i> (%)
Endo						
Chin						
Piffar						
Xiang						
Ramc						
Cum						
Fene						
Ahan						
Redli						
Brads						
Qin e						
Wang						
Luo e						
Xie e						
Cum						
Singl						
Huan						
Fang et al. (29)	1 (1.3)	0 (0)	0 (0)	0 (0)	3 (4.1)	NR
Cumulative data	0.6% 95%CI: 0.0–4.1%	0.0% 95%CI: 0.0–1.6%	0.0% 95%CI: 0.0–1.7%	0.0% 95%CI: 0.0–1.6%	3.9% 95%CI: 0.5–9.3%	/
Cumulative data	0.4% 95%CI: 0.0–1.9%	0.1% 95%CI:0.0–1.2%	0.0% 95%CI:0.0–0.8%	0.0% 95%CI: 0.0–0.3%	8.3% 95%CI: 2.1–17.1%	1.7% 95%CI: 0.0–9.9%

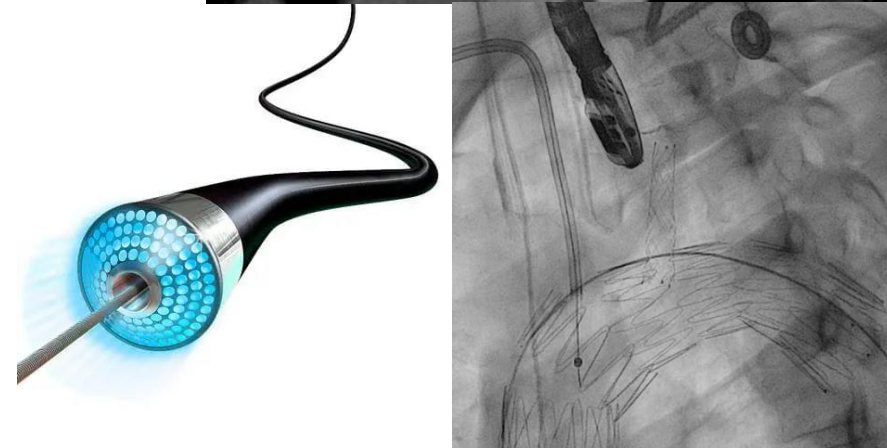
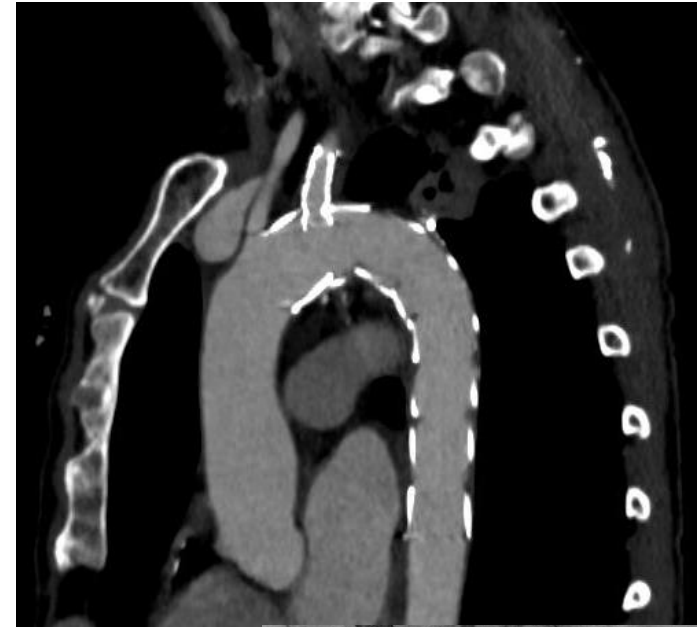
“Notably, the chimney-grafts method showed a relatively high incidence of almost all the complications analyzed in this study, whereas **single-branched stent-grafts** showed relatively better outcomes.

Other Techniques

Physician Modified F-TEVAR



Laser in-situ F-TEVAR



Conclusion

- sB-TEVAR has low invasiveness and low complication rates
- Parallelgrafts should be reserved for emergency/urgent cases (analogue to AAA)
- sB-TEVAR is the preferred treatment strategy for A. sub debranching
- Complete ER is expected to become the standard of care for the treatment of LSA in the near future
- ER will probably not be able to completely replace SR

Thank You

