UNIVERSITÄTS KLINIKUM HEIDELBERG

VEITH SYMPOSIUM

Preservation of Left Subclavian Artery in TEVAR with Off The Shelf Branch Stent-Graft Technology

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Disclosures

- **Consultancy**
  - Arsenal, Arterica, BrainLab, Cook, Endologix, Gore, Medtronic, Philips
- **Research grant /research support**
  - BrainLab, Cook, Dietmar-Hopp-Foundation, Gore, Maquet, Medtronic, Siemens
- **Advisory Board**
  - BrainLab, Endologix, Gore, Medtronic, Philips
- **Paid speaker**
  - Abbott, Cook, Endologix, Gore, Maquet, Medtronic, Siemens
- **Major stokeholder**
  - none

No Conflicts of Interests

Most Aortic Pathologies involve the distal Arch

TAA | Residual A- Dissection | Subacute TTAB | Chronic Dissection | PAU

20 to 60% of TEVAR patients require landing into Zone 0-2 with coverage of at least one supra-aortic trunk...

SOCIETY FOR VASCULAR SURGERY PRACTICE GUIDELINES

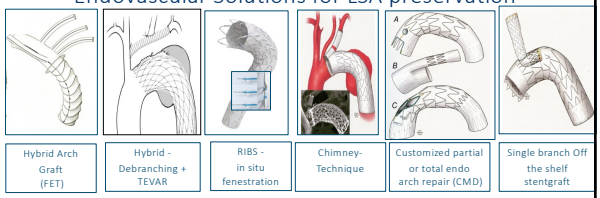
Check for updates

Society for Vascular Surgery clinical practice guidelines of thoracic endovascular aortic repair for descending thoracic aortic aneurysms

Recommendation	Grade	Quality
19. In elective Zone 0-2 TEVAR, we suggest preoperative or concomitant **left subclavian artery revascularization**	I	B
20. For patients LSA provides vital perfusion (e.g. LIMA coronary bypass, termination of left vertebral artery into posterior inferior cerebellar artery, absent or atretic right vertebral artery, patent left upper extremity shunts), we recommend LSA revascularization	I	B
21. For patients with acute thoracic emergencies for whom TEVAR requires coverage of the left subclavian artery, it is suggested that revascularization be individualized on the basis of patient anatomy and urgency of the procedure	2	B

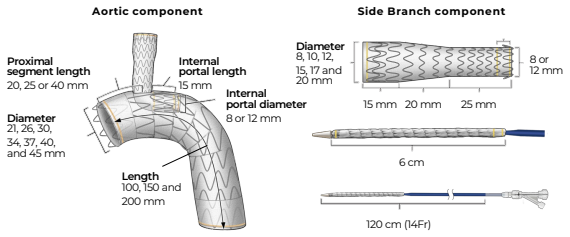
Upchurch G et al. J Vasc Surg 2021

Endovascular Solutions for LSA preservation



Hybrid Arch Graft (FET)	Hybrid - Debranching + TEVAR	RIBS - in situ fenestration	Chimney-Technique	Customized partial or total endo arch repair (CMD)	Single branch Off the shelf stentgraft
off the self	off the self	off the self	off the self	customized	off the self
Hybrid (incl.open)	Hybrid (incl. open)	endovascular not CE approved, durability?	endo but non IFU, no CE durability?	endovascular individualized published results not off the shelf	endovascular CE & FDA approved published 2y

TBE - Components



GORE TAG – Thoracic Branch Endoprosthesis

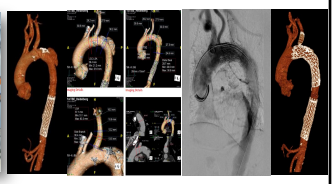
Pivotal trials since 2016

FDA approved in 2022

CE marked in Europe 2023

1st Implant on 30th January 2024

First TBE Implant in Europe on 30th January 2024



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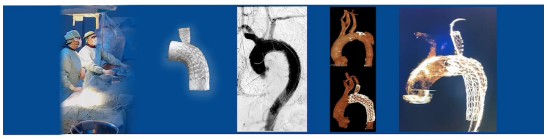
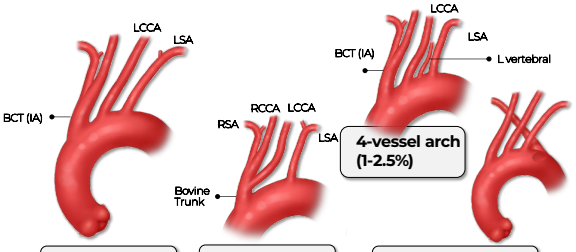
EDITED CASE:



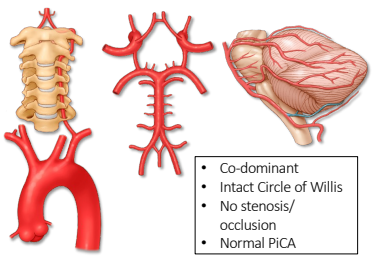
FIRST EUROPEAN EXPERIENCE WITH AN OFF-THE-SHELF SINGLE-BRANCHED DEVICE
- DESIGNED AND APPROVED FOR LSA PERFUSION -

Lessons learned

Know Aortic Arch Anatomy and Anomalies

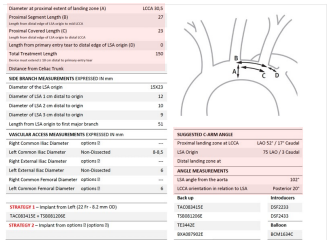


Know and Image Normal Vertebral Artery Anatomy

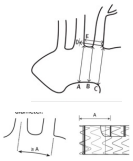


- Co-dominant
- Intact Circle of Willis
- No stenosis/ occlusion
- Normal PiCA

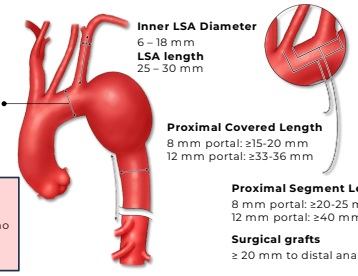
Detailed measurement and planing needed



- Outer curve measurements
- Supraaortic vessels angles
- C-arm angles > fusion imaging

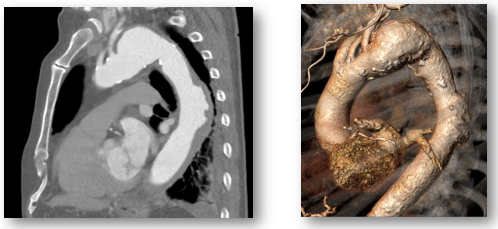


Know and respect IFU - Anatomical criteria (Zone 2)

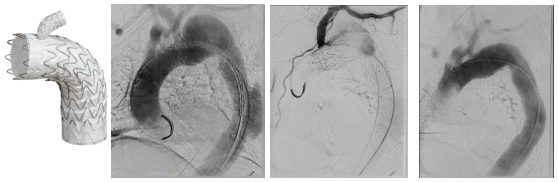


Landing zone
≥ 20 mm length of non-aneurysmal aorta with no dissection, thrombus or calcium

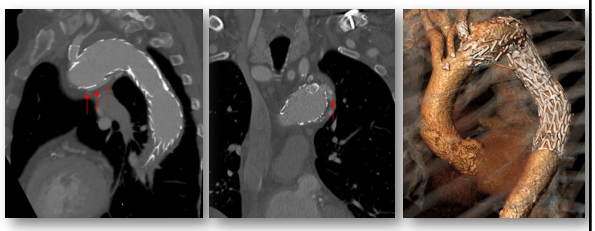
Patient #3: 82 y.male, sympt. arch aneurysm, 6 cm diameter



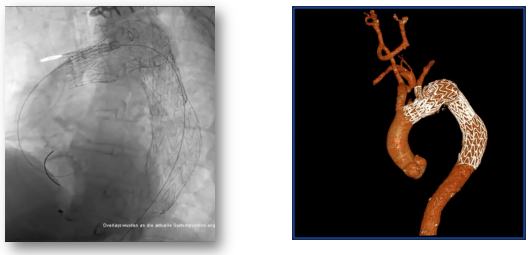
Gore® TBE, 08-40-150 in March 2024



6-months Follow-up CTA (Sept.2024): Type 1a Endoleak

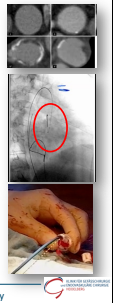


Reintervention with 2 Aortic Extenders



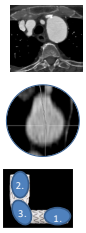
Implement standardized measures to mitigate stroke

- Patient selection (atheroma in the arch)
- Therapeutic ACT 300 during procedure
- "De-airing" of TBE during sheath insertion
- Snare in the descending aorta to avoid wire wrap
- Minimize reposition and manipulation in the arch
- Carefull distal ballooning in the distal LSA bridging SG



Optimize Techniques to achieve longterm branch patency

- Precise measurement of LSA diameter, length and angle
- Choose the right portal and bridging SG
- Take care of rotation and paralaxis
- Use image fusion technique if available
- Ballooning sequentially 3 times



Summary

- Promising personal early experience with TBE
- Still in a learning curve regarding patient selection and best implantation practice
- TBE: important complementary treatment option for aortic arch repair
- We left our "staged hybrid strategy" in Zone 2-3 arch repair