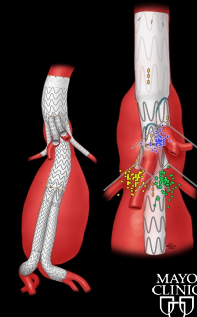


PMEGs and OTS devices are both options for urgent/emergent treatment of ruptured complex AAA



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VEITH SYMPOSIUM 2024

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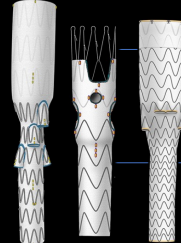
DISCLOSURES

All fees paid to Mayo Clinic

- WL Gore, Cook Medical
 - Research funding, consulting
- Cook Medical, Medtronic
 - Aortic advisory board
- Artivion
 - Consulting

OFF-THE-SHELF STENT DESIGNS

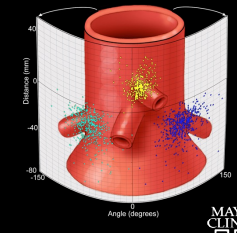


- Widely available in Europe, Canada, South America, Australia
- TAMBE FDA approved 2024
- "One-size-fits-most" designs

Off-the-Shelf
 Cook t-Branch®
 Cook p-Branch®
 Gore TAMBE®

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PREDICTABLE RENAL-MESENERIC ANATOMY



From the Society for Vascular Surgery

Anatomic feasibility of off-the-shelf fenestrated stent grafts to treat juxtarenal and pararenal abdominal aortic aneurysms

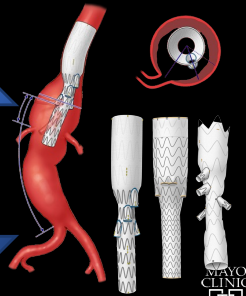
Bernardo C. Mendes, MD, Susanna C. Obich, MD, Thibault A. Maucha, MD, Alexandre M. Pagan, MD, Stephen Cho, MD, Andrew A. Thompson, MD, Peter Chikritzakis, MD, and Thomas C. Brott, MD, *Publication Date

- 520 patients had CTA analyzed to map the renal-mesenteric arteries

Mendes et al. J Vasc Surg 2014

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BRANCHED OTS DEVICES



- Standardization
- Immediate availability
- Flexible implantation
- Durable sealing

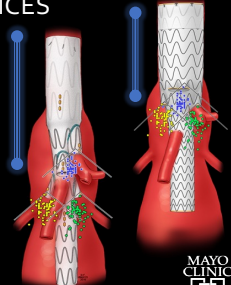
PROS

- Renal occlusion
- Aortic coverage
- Upgoing vessels

CONS

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CONCERNS WITH OTS DEVICES



- Anatomic feasibility
 - Variant visceral anatomy
 - Narrow paravisceral aortic lumen
 - Upgoing targets
- Length of suprarenal coverage
- Concerns with renal branch patency
- Profile
- **Need for brachial access

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RENAL ANGLES

520 patients

Upgoing renal arteries
 Unilateral: 118 (23%)
 Bilateral: 13 (3%)

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AORTIC COVERAGE...

Patient-specific ~3cm coverage
 TAMBE ~6cm coverage
 T-Branch >9cm coverage

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PMEGs

- Urgent/emergent presentation
- Rapid expansion, very large aneurysms
- Unsuitable for off-the-shelf devices
 - Anatomic constraints
 - Not meeting clinical trial criteria
- **No access to manufactured grafts**

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VERSATILITY

Mini-cuffs
 Reinforced fenestrations
 Inner branches
 Outer branches
 Diameter Reducing Ties
 Preloaded wires

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CONCERNS WITH PMEGs

- Quality control
 - Measurement accuracy
 - Breach in sterility
 - Integrity issues
- Cost & reimbursement
- Regulatory issues (PS-IDE)
- Team efficiency (1-2 hours)
- Long-term durability?

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Early outcomes of t-Branch off-the-shelf multibranch stent graft in urgent and emergent repair of thoracoabdominal aortic aneurysms


Ahmed Elshra, MD, Mohamed Hatmi, MBBCh, Konstantinos Sparos, MD, MSc, PhD, Giuseppe Panzucchi, MD, PhD, Flora Bohrer, MD, PhD, E. Sebastian Debus, MD, PhD, Christian A. Behrendt, MD, Nikolas Tallmeyer, MD, PhD, and Rüdiger Wölfl, MD, PhD, Hamburg, Germany

- 100 patients treated with T-Branch
 - 70 urgent/emergent
- 372/400 (93%) target vessels cannulated
- 95-98% technical success
- Mortality 16% (urgent), 24% (emergent)
- SCI 10% (urgent), 38% (emergent)

Elshra et al JVS 2022

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TAMBE® PIVOTAL CLINICAL TRIAL

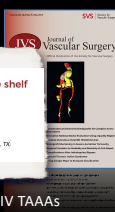



Early outcomes from the pivotal trial of a four-branch off-the-shelf solution to treat complex abdominal and type IV thoracoabdominal aortic aneurysms


Mark A. Farber MD¹, Jeri B. Matsumura MD², Sangu Han MD³, Michael S. Makarem MD⁴, Bjorn D. Suckow MD⁵, Carlos H. Timaran MD⁶, Bernardo C. Mendes MD⁷, and Gustavo S. Olschki MD⁸ ¹Mayo Clinic, ²NIH, ³NIH, ⁴NIH, ⁵NIH, ⁶NIH, ⁷NIH, ⁸NIH

- 102 patients with pararenal and Extent IV TAAAs
- Technical success 99%
- Major adverse events 7%
 - Stroke 1%, SCI 2%, dialysis 2%; no mortality
- 9% early reinterventions

Farber et al. J Vasc Surg 2024


Multicenter Study on Physician-Modified Endografts for Thoracoabdominal and Complex Abdominal Aortic Aneurysm Repair



Nikolaos Tsilimparis MD, PhD¹, Ryan Gouvia e Melo MD², Emanuel R. Tenorio MD, PhD³, Salvatore Scalfi MD, PhD⁴, Bernardo Mendes MD, Sangu Han MD, MSc⁵, Schemmel MD, Donald J. Adam MD, Mahmood B. Malik MD, MSc, PhD⁶, Mark Farber MD, PhD⁷, Tilo Kolbe MD, PhD⁸, Benjamin Stamm MD, George Joseph MD, Daniela Brancari MD, Frederic Cochonneuc MD, PhD⁹, Carlos Timaran MD, Luca Iannigelli MD, Enrico Cerelli MD, Luis Mendez Pardo MD, PhD¹⁰, Fabio Verzoni MD, PhD¹¹, Adam W. Becke MD, Jesse Chai, DO¹², Alyssa Pappas MD, Gregory A. Magee MD, Nicholas Swerdlow MD, Marcin Juszczak MD, PhD¹³, Andrew Barbieri MD, Robert Pagan MD, Yvain C. Gomes MD, Giuseppe Ponzio MD, Matthew P. Swartz MD, MS, Sara L. Zlotner MD, MSc, PhD, Jean-Pierre Ricopons MD, PhD¹⁴, Jonathan Caron MD¹⁵, Jesus Pomar Cordero MD, Marina Diaz-Nieto MD, MSc, PhD, Antonio Giordano MD, Gustavo S. Olschki MD


- Largest PMEG experience to date
- 1274 patients
 - 35% symptomatic or ruptured
- Technical success 94%
- Early mortality 5.8%; MAE 25%

Tsilimparis N et al Circulation 2024



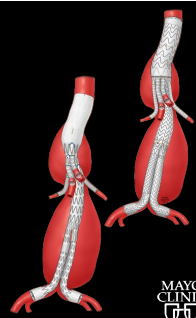

PRINCIPLES FOR URGENT PMEGS

1. Do what you *and your team* are familiar with – urgency/emergency not the best time to do it 'first'
2. Appropriate patient selection is fundamental – fit the stent to the patient!
3. You are as good as your team
4. Communication is absolute key
5. Simultaneous modification/access/pre-cannulation saves time
6. Keep it simple
7. It is OK to compromise for complex anatomy
8. Planning is not the time to rush...
9. ...but move fast on the easy standard steps
10. Postoperative care is the same as for open RAAA – don't relax!



CONCLUSION

- OTS devices are preferred when available
- Anatomic feasibility limits its application
- In cases of complex AAA, suprarenal coverage might be excessive
- PMEGs require significant physician/team training for planning, modification and implantation
- Team expertise is critical for both modalities of treatment


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150 Years
 SERVING HUMANITY

