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

Should we use different arch devices for dissections and aneurysms?

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Disclosures

- ❑ I have the following potential conflicts of interest to report:
  - ❑ Receipt of grants/research support
  - ❑ Receipt of honoraria and travel support
  - ❑ Participation in a company sponsored speakers‘ bureau
  - ❑ Employment in industry
  - ❑ Shareholder in a healthcare company
  - ❑ Owner of a healthcare company

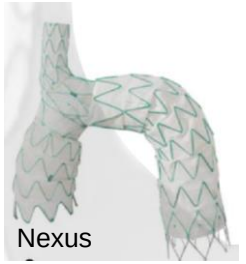
- ✓ I do not have any potential conflict of interest

Arch devices

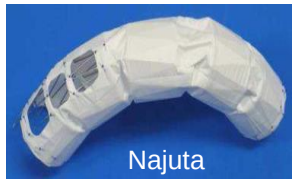
Zone 0: Branched


Cook


Terumo


Nexus

Zone 1-2: Fenestrated

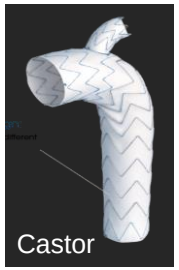

Najuta


Cook


Terumo

Zone 2: LSA Branch


Gore TBE


Castor


Mona LSA

Endograft selection

Branched versus fenestrated thoracic endovascular aortic repair in the aortic arch: A multicenter comparison

Sven R. Hauck, MD,[a] Alexander Kupferthaler, MD,[a,b,c] Maximilian Kern, MD,[d] Hervé Rousseau, MD,[e] Ciro Ferrer, MD,[f] Shinichi Iwakoshi, MD,[g] Shoji Sakaguchi, MD,[h] Marie-Elisabeth Stelzmüller, MD,[i] Marek Ehrlich, MD,[i] Christian Loewe, MD,[a] and Martin A. Funovics, MD[a]

ABSTRACT

Objective: For thoracic endovascular aortic repair of the arch, branched and fenestrated endografts are available with different limitations regarding anatomy and extent of the pathology. Comparisons are lacking in the literature. The aim of this study was to compare the results of 2 currently commercially available devices for branched thoracic endovascular aortic repair and fenestrated thoracic endovascular aortic repair.

Methods: In a retrospective, multicenter cohort study, a consecutive patient series treated with branched thoracic endovascular aortic repair or fenestrated thoracic endovascular aortic repair for aortic arch pathologies was assessed. Baseline characteristics, procedural fenestrated thoracic endovascular aortic repair, and outcome were analyzed. Furthermore, the potential anatomic feasibility of the respective alternate device was assessed on the preoperative computed tomography scans.

Results: The branched thoracic endovascular aortic repair and fenestrated thoracic endovascular aortic repair cohorts consisted of 20 and 34 patients, respectively, with similar comorbidities; indication was aneurysm in 65% and 79%, penetrating aortic ulcer in 20% and 9%, and dissection in the remaining procedures, respectively. Technical success was achieved in all but 1 patient. Perioperative mortality and major stroke rate were both 10% in branched thoracic endovascular aortic repair and 0% and 3% in fenestrated thoracic endovascular aortic repair, respectively. During follow-up of 31 and 40 months, 1 branch occlusion occurred in the branched thoracic endovascular aortic repair cohort, and 2 late endoleaks occurred in the fenestrated thoracic endovascular aortic repair group. One aortic death occurred. Although 35% of patients undergoing branched thoracic endovascular aortic repair were anatomically suitable for fenestrated thoracic endovascular aortic repair, 91% of those undergoing fenestrated thoracic endovascular aortic repair were suitable for branched thoracic endovascular aortic repair.

Conclusions: Both branched thoracic endovascular aortic repair and fenestrated thoracic endovascular aortic repair show excellent technical success and acceptable complication rates, whereas branched thoracic endovascular aortic repair tends toward higher morbidity, especially stroke rates. By offering fenestrated thoracic endovascular aortic repair along with branched thoracic endovascular aortic repair, aortic centers could potentially lower complication rates and simultaneously still treat a wide range of anatomies. (J Thorac Cardiovasc Surg 2022;■:1-11)

J Thorac Cardiovasc Surg 2022

Branched TEVAR

- 10% Mortality
- 10% Major Stroke

Crossover to less invasive fTEVAR treatment in 35% possible

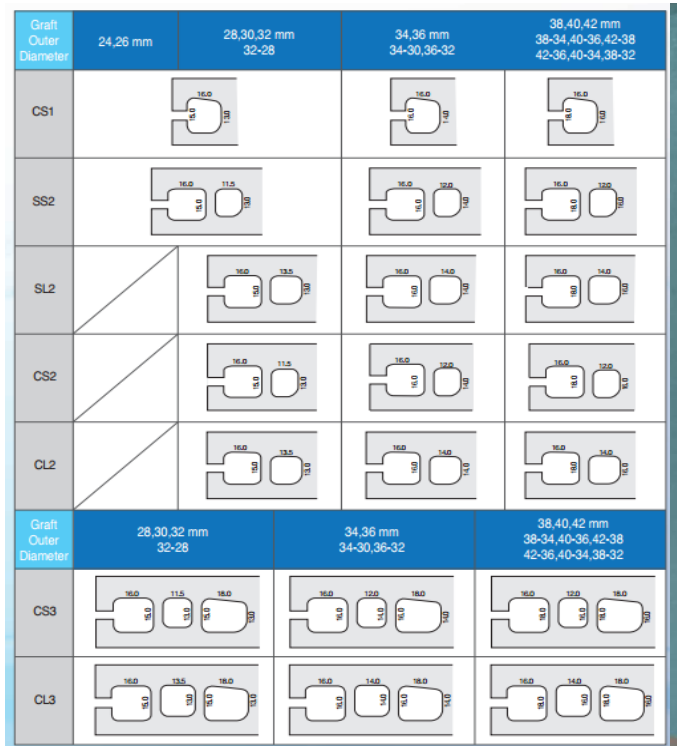
Fenestrated TEVAR

- 0% Mortality
- 3% Major Stroke

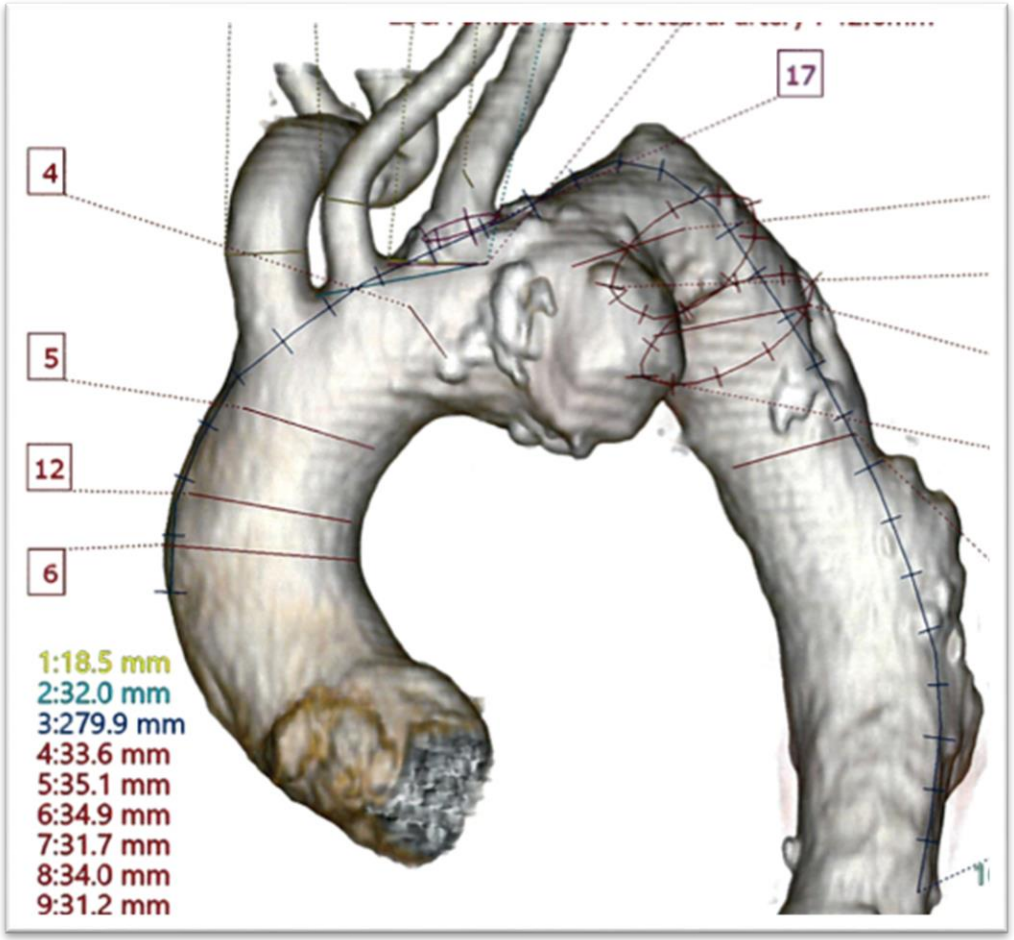
NAJUTA Stent Graft (Kawasumi)

SEMI-CUSTOM FENESTRATED ENDOGRAFT:

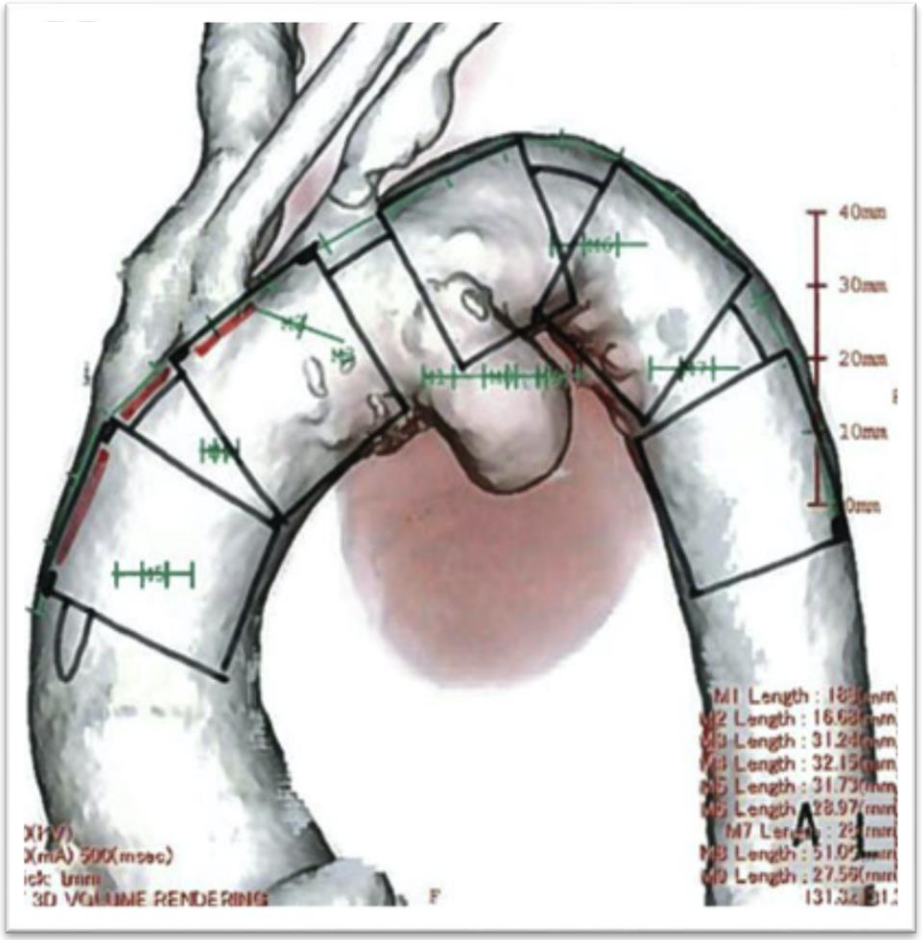
combining the skeleton pattern, the different graft diameters and the number, dimension and orientation of the fenestrations, there are **1,590** configurations available.



NAJUTA Stent Graft (Kawasumi)



Aneurysm of distal arch



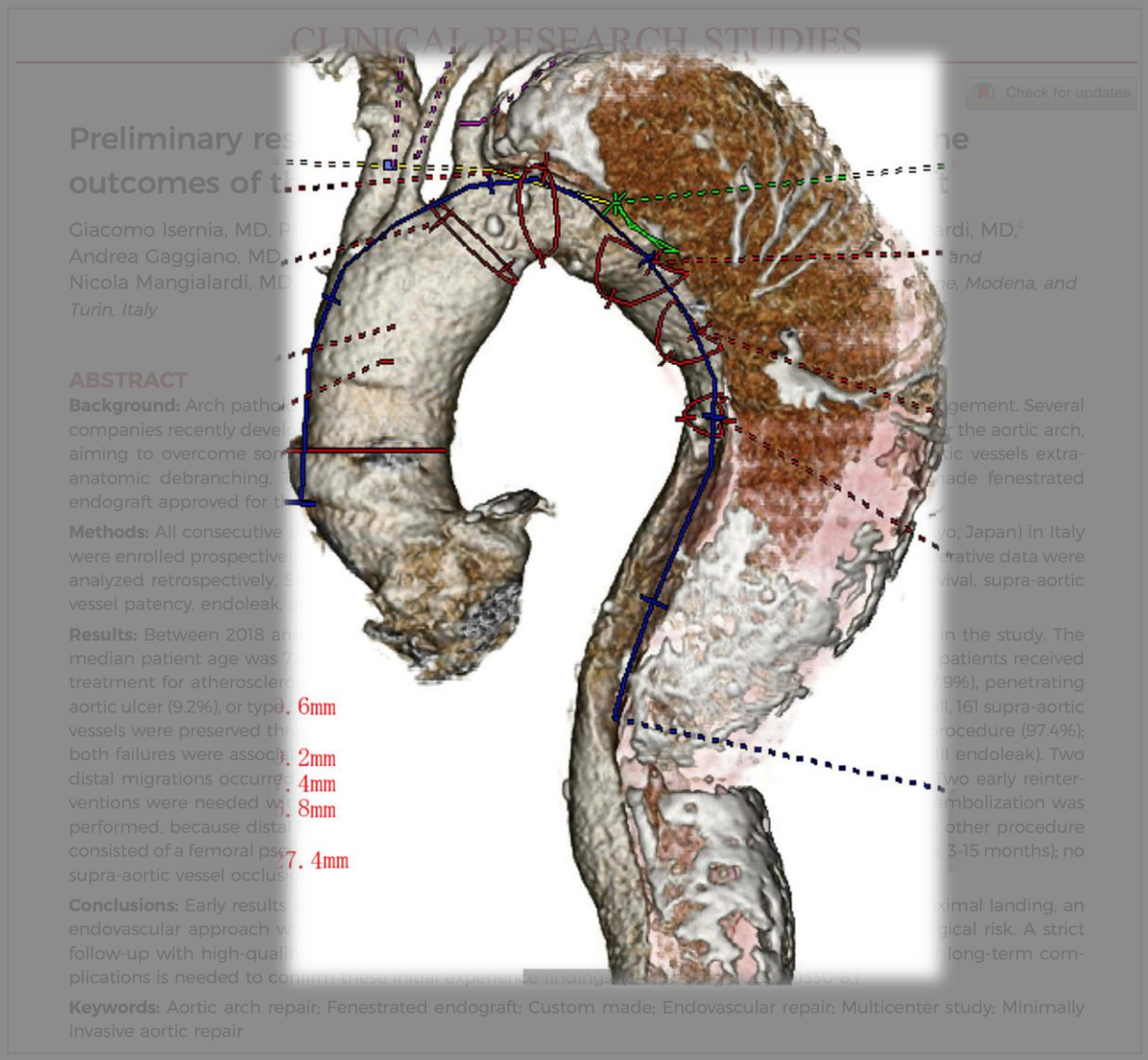
Aneurysms of the lesser curve

NAJUTA Stent Graft (Kawasumi)

- Low radial force
- Fabric sutured only at the proximal and distal edge

Expands like the sail of a boat

NAJUTA Stent Graft (Kawasumi)



CLINICAL RESEARCH STUDIES

Check for updates

Preliminary res… …ne
outcomes of t…

Giacomo Isernia, MD, P… …rdi, MD,[c]
Andrea Gaggiano, MD, … …and
Nicola Mangialardi, MD … …e, Modena, and
Turin, Italy

ABSTRACT

Background: Arch patho… …gement. Several companies recently devel… …the aortic arch, aiming to overcome sor… …ic vessels extra-anatomic debranching. … …ade fenestrated endograft approved for t…

Methods: All consecutive … …o, Japan) in Italy were enrolled prospective… …rative data were analyzed retrospectively. … …ival, supra-aortic vessel patency, endoleak…

Results: Between 2018 ar… …n the study. The median patient age was … …patients received treatment for atherosclero… …9%), penetrating aortic ulcer (9.2%), or type … …ll, 161 supra-aortic vessels were preserved thr… …rocedure (97.4%); both failures were associ… …ll endoleak). Two distal migrations occurre… …wo early reinter-ventions were needed w… …mbolization was performed, because distal … …other procedure consisted of a femoral pss… …3-15 months); no supra-aortic vessel occlus…

Conclusions: Early results … …ximal landing, an endovascular approach w… …gical risk. A strict follow-up with high-quali… …long-term com-plications is needed to co…

Keywords: Aortic arch repair; Fenestrated endograft; Custom made; Endovascular repair; Multicenter study; Minimally invasive aortic repair

J Vasc Surg 2022

Chronic Type B dissection (n 12)

Intraoperative And Follow-up (8-17 months) data	Count (n)	Percentage
Technical success	11	91,6 %
Surgical time (min)	116 (40 – 330)	
Contrast medium (mL)	210 (100 – 450)	
Retrograde dissection	0	0 %
SINE	0	0 %
Stroke	0	0 %
SCI	0	0 %
Stent fracture	0	0 %
Endoleak (type IB)	1	8,4 %

NAJUTA Stent Graft (Kawasumi)

Applicability of endovascular branched and fenestrated aortic arch repair devices to treat residual type A dissection after ascending replacement

Sven R. Hauck, MD,[a] Maximilian Kern, MD,[a] Theresa-Marie Dachs, MD,[a] Lukas Haider, MD,[a] Marie-Elisabeth Stelzmüller, MD,[b] Marek Ehrlich, MD,[b] Christian Loewe, MD,[a] *and* Martin A. Funovics, MD,[a]
Vienna, Austria

ABSTRACT

Objective: Endovascular repair of post-type A aortic dissection (PTAD) after open ascending replacement has recently been shown as safe and feasible, but with limited anatomic applicability because only one stent graft was evaluated. We assessed anatomic and clinical applicability of six commercially available branched/fenestrated stent grafts for endovascular repair of PTAD.

Methods: On postoperative CT scans of 101 patients, we measured the aortic diameter at the sinutubular junction, supra-aortic vessels, and descending aorta, as well as the distances between these landmarks along the outer curvature of the arch and the diameters of the supra-aortic vessel. Anatomic applicability was evaluated according to the instructions for use, clinical applicability with regard to supra-aortic and iliac arteries. Assessed devices were the Cook aortic double branch, Terumo double branch, Najuta fenestrated, Endospan Nexus, Medtronic Mona LSA, and Gore TAG thoracic branch.

Results: Single devices were anatomically and clinically applicable between 19 of 101 (Mona LSA) and 83 of 101 (Najuta) cases. Reasons for rejection varied considerably across devices. With all devices available, anatomic applicability was 97 of 101 and clinical applicability 95 of 101. Combinations of a fenestrated and a branched device showed the most favorable clinical applicability for a pair of two devices, ranging from 86 of 101 to 94 of 101.

Conclusions: Anatomic and clinical applicability of endovascular devices for the repair of PTAD is high for fenestrated and branched devices, and very high for the combination of fenestrated and branched devices. Manufacturers should amend specific device requirements for PTAD. Surgeons should emphasize the need for a sufficiently long and straight graft as a potential landing zone. (J Vasc Surg 2022;76:1440-8.)

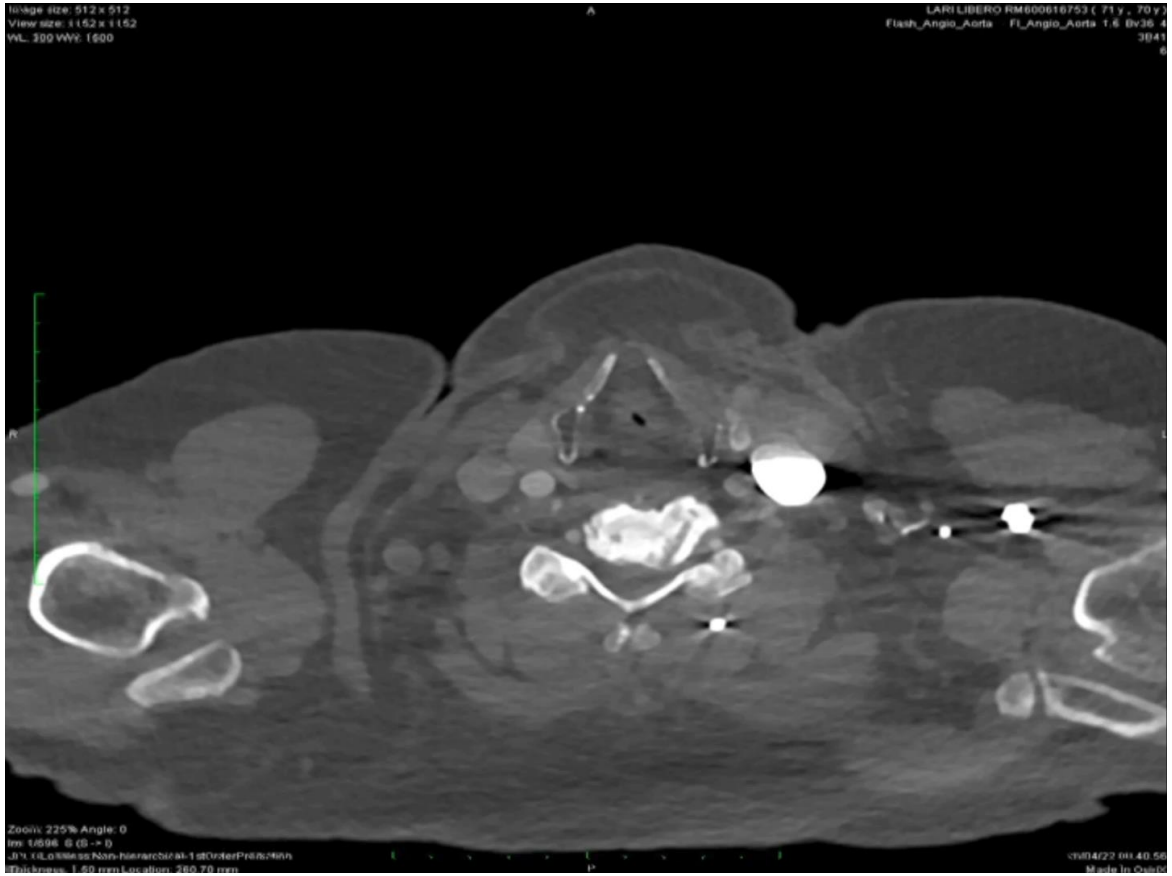
Keywords: Endovascular aortic repair; Aortic arch; Aortic dissection; Branched stent graft; Fenestrated stent graft

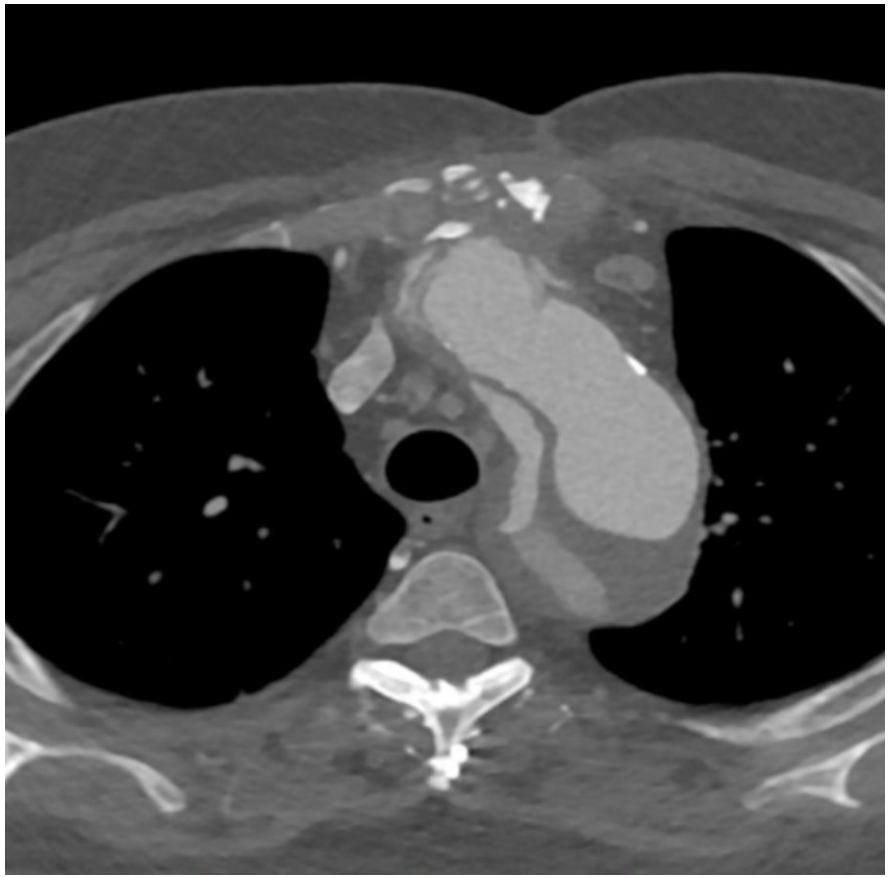
J Vasc Surg 2022

Device	Anatomic applicability
Coook Branch Arch device	78.2%
Relay Branched	52.4%
Najuta	82.1%
Nexus	38.6%
Mona LSA	18.8%
Gore TBE	77.2%

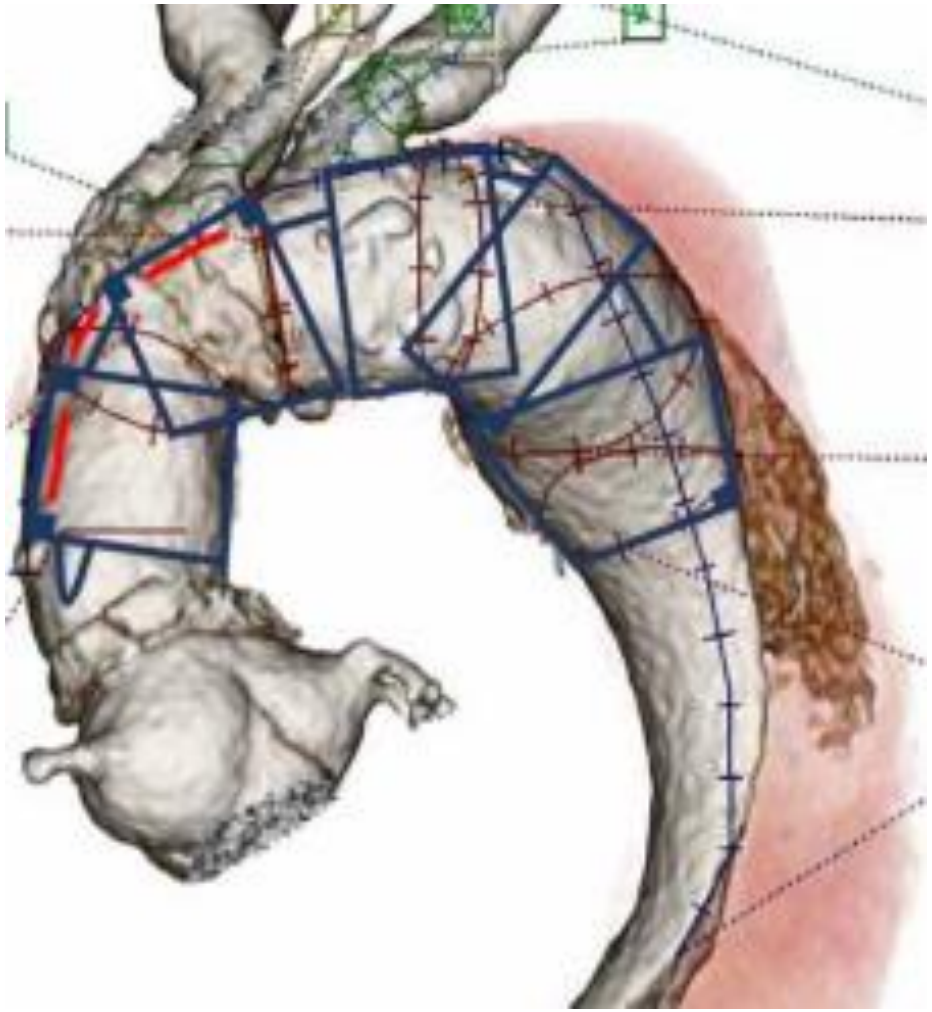
NAJUTA case: 61 mm residual NON A – NON B dissection

- 67 Y, M
- Previous replacement of the ascending aorta for Type A dissection
- Hypertension, dislipidemia, ischemic cardiopathy





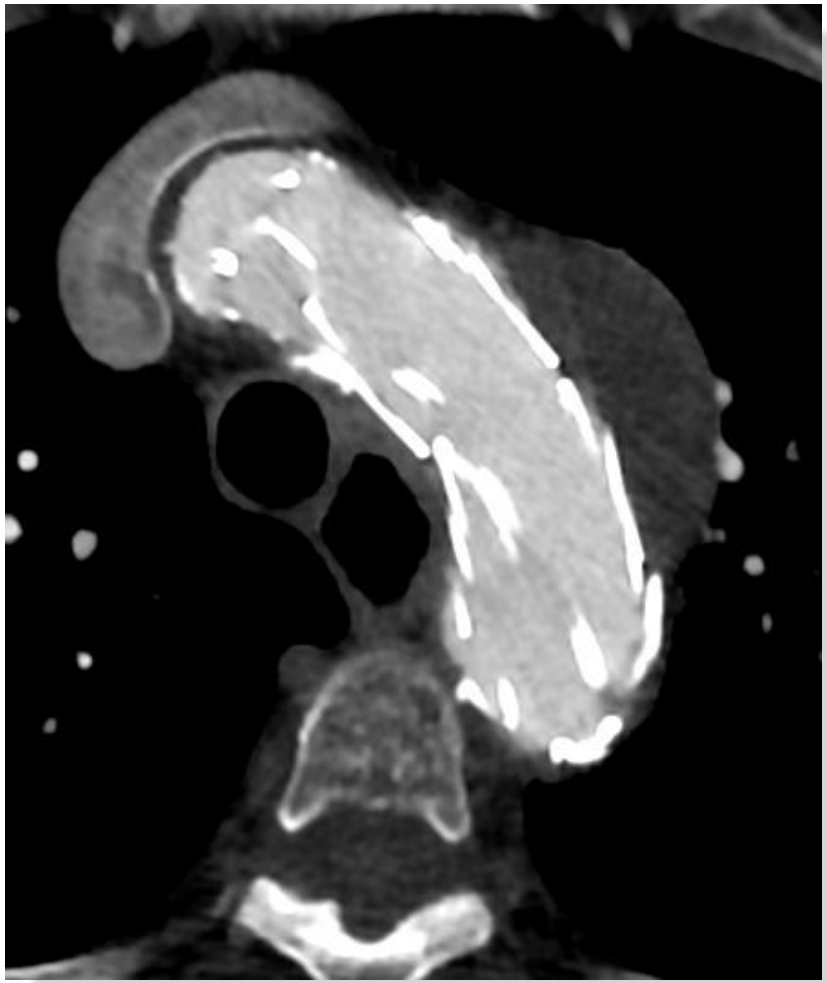
NAJUTA case: 61 mm residual NON A – NON B dissection

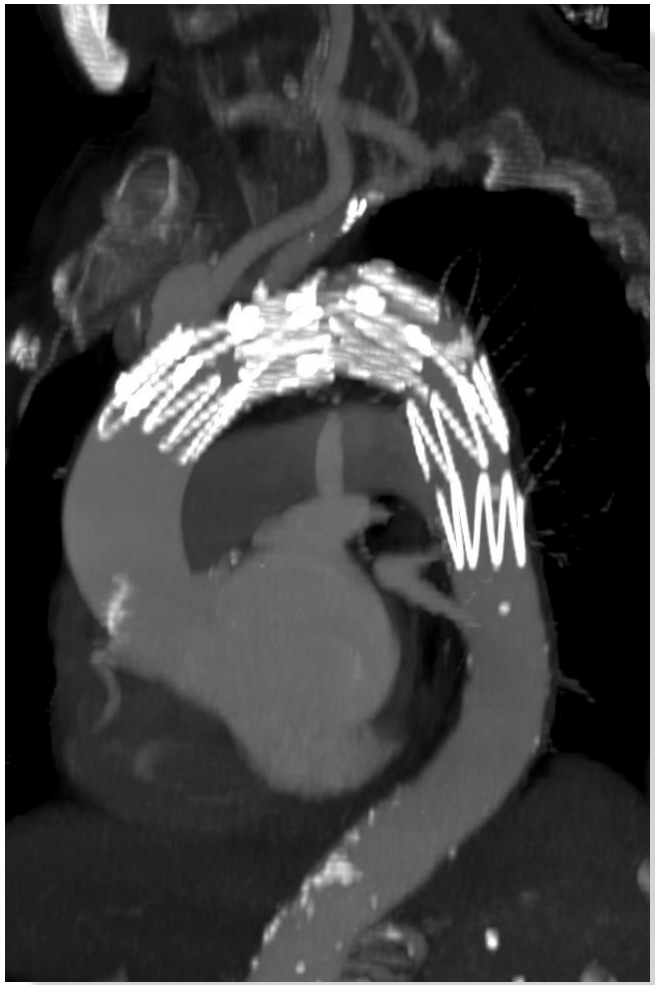


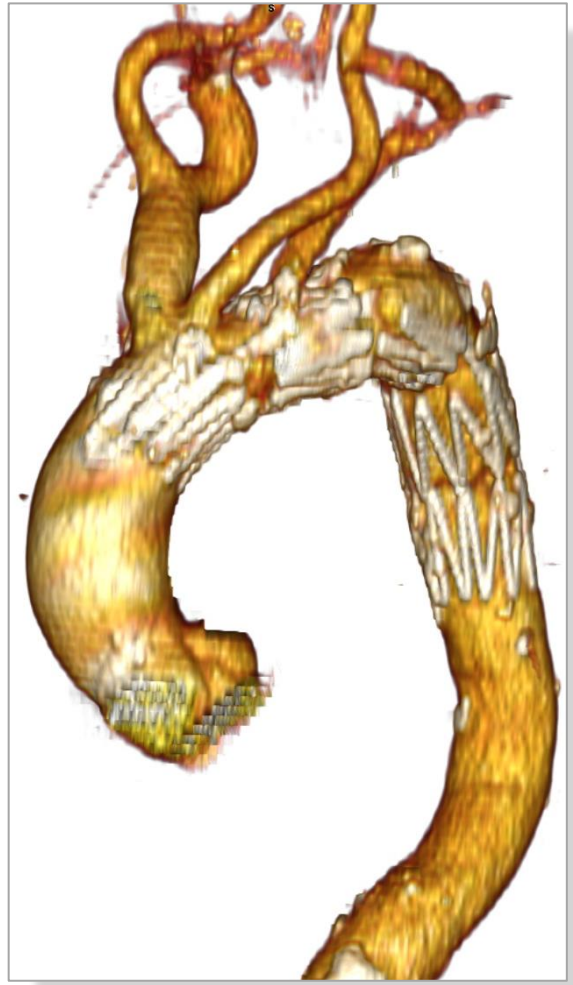
LCCA-LSA bypass

NAJUTA case: 61 mm residual NON A – NON B dissection

30-day CTA







CASTOR (Microport)

Semi-custom unibody single-branch endograft for the LSA

Mainbody Proximal Diameter	26 / 28 / 30 / 32 / 34 / 36 / 38 / 40 / 42 / 44
Mainbody Distal Diameter	20 / 22 / 24 / 26 / 28 / 30 / 32 / 34 / 36 / 38 / 40 / 42 / 44
Branch Distal Diameter	6 / 8 / 10 / 12 / 14
Outer Sheath Profile (Fr)	24
Mainbody Length	60 / 65 / 70 / 75 / 80 / 90 / 100 / 110 / 120 / 130 / 140 / 150 / 160 / 170 / 180 / 190 / 200/ 210
Branch Length	25 / 30 / 35 / 40 / 45
Length from Branch to Mainbody Proximal End	5 / 10 / 15 / 20 / 25 / 30

CASTOR (Microport)

European Journal of Cardio-Thoracic Surgery 2023, 64(4), ezad290
https://doi.org/10.1093/ejcts/ezad290 Advance Access publication 21 August 2023

ORIGINAL ARTICLE

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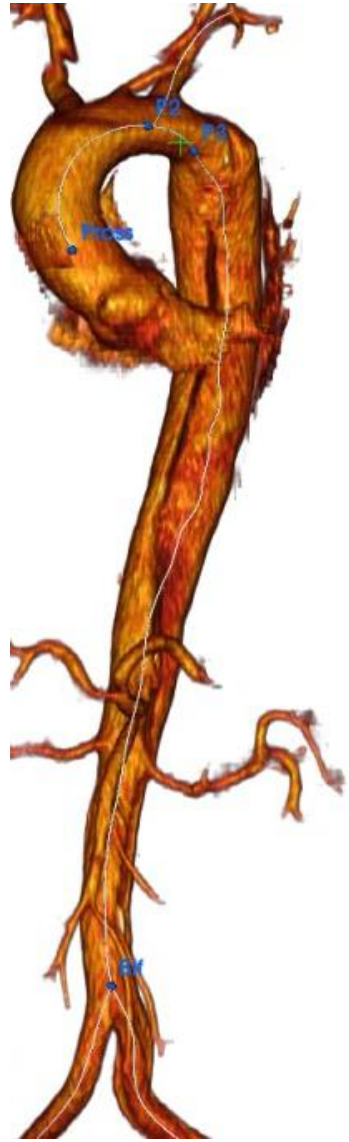
- **68%** CASTOR FEASIBILITY in prev. TEVAR in LZ2

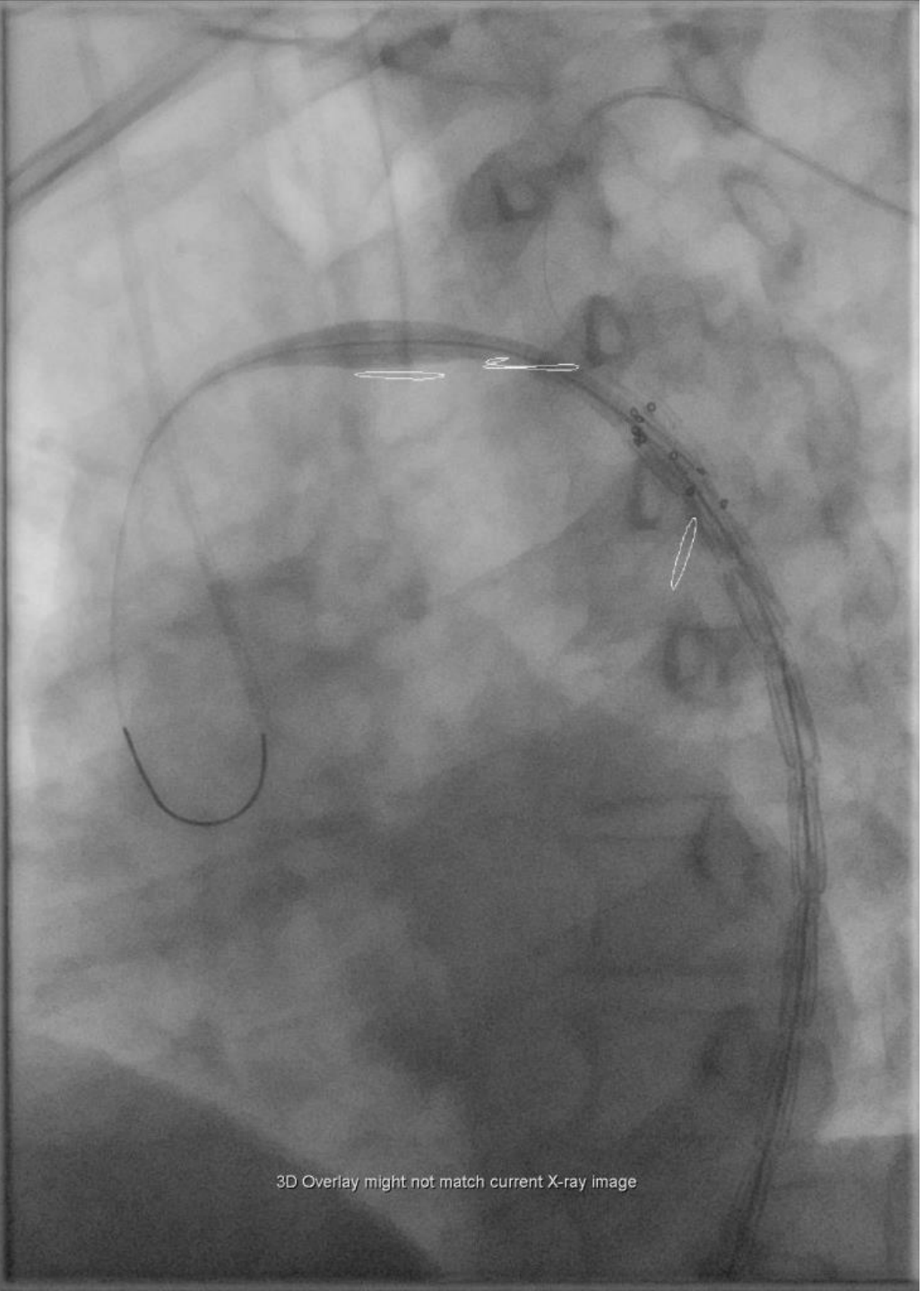
- **75%** of the pts could be treated with **21** graft configurations
  - graft configurations may be reduced to **12** applying less restrictive criteria

Aim of the study: **suitability of CASTOR** endograft among patients treated with TEVAR in landing zone 2 (LZ2).

CASTOR case: Acute TBAD

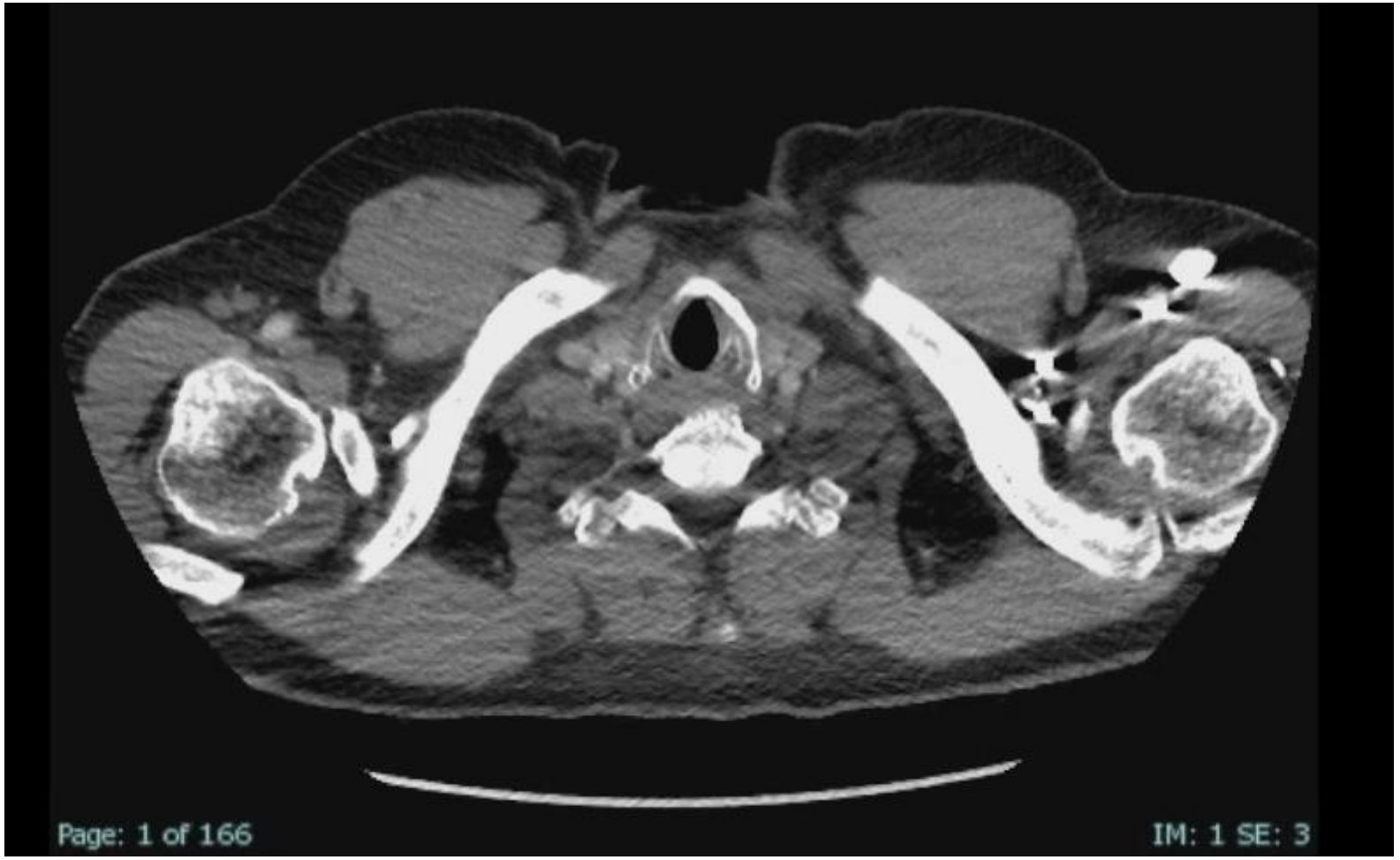
- 63 years old obese male
- **TBAD** (DeBakey IIIB) with refractory hypertension and recurrent chest pain




3D Overlay might not match current X-ray image

CASTOR case: Acute TBAD

Post-op. CT



GORE TBE (W. L. Gore & Associates)

Original Article

UNDER REVIEW

TITLE

Anatomical Suitability of The Standard Subclavian Branched Endograft in Previous Zone 2 Thoracic Endovascular Aortic Repair

Nicola Leone[a], Francesco Andreoli[a], Luigi Alberto Maria Bartolotti[a], Andrea Ferri[a], Roberto Silingardi[a], and Stefano Gennai*[a].

Aim of the study: **suitability of GORE TBE** endograft among patients treated with TEVAR in landing zone 2 (LZ2).

GORE TBE (W. L. Gore & Associates)

- **76%** GORE TBE FEASIBILITY in prev. TEVAR in LZ2 (8-mm portal configuration)
  - **84%** GORE TBE FEASIBILITY excluding LSA restrictions
- **87%** of the pts could be treated with **5** graft configurations

CONCLUSIONS

Should we use different arch devices for dissections and aneurysms?

CONCLUSIONS

- EG selection is crucial in order to balance effectiveness of the treatment with the risk of complications
- There are EG that seem more suitable for treatment of dissections
- Fenestrated EG seem mostly appropriated for sub-acute/chronic non-A non-B dissections
- Single LSA branch EG could become the best choice for TBAD also in the acute/sub-acute phase