

Fondazione IRCCS Cà Granda Ospedale Maggiore Policlinico

UNIVERSITÀ DEGLI STUDI DI MILANO

How To Treat Aortic Dissections With Entry Tears In The Aortic Arch: Can They Be Treated Endovascularly: Technical Tips

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VEITH SYMPOSIUM 2024
Connecting The Vascular Community


COI:
Consultant and Speaker: WL Gore, Medtronic Inc, Terumo Aortic

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Aortic Dissection with Entry Tear in the Arch


Situation in which the arch is dissected but not ascending aorta



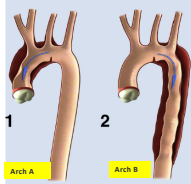
Incidence: 4 – 10% of AD

Aortic Dissection with Entry Tear in the Arch

Situation in which the arch is dissected but not ascending aorta



- Group 1: Retrograde extension into the Ascending Aorta with or without antegrade extension
Arch A
- Group 2: Antegrade extension into the Descending Aorta
Arch B




VEITH SYMPOSIUM 2024 ARCH

Aortic arch dissections with entry tear in the arch: A report from the International Registry of Acute Aortic Dissection

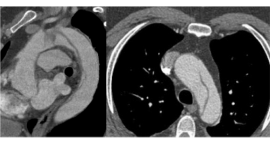
Trimarchi S, et al. J Thorac Cardiovasc Surg. 2023;165(1):1-10. doi:10.1053/j.jtcvs.2022.08.017. Epub 2022 Oct 17. PMID: 36251111

The Journal of Thoracic and Cardiovascular Surgery - January 2019

Aortic Dissection with Entry Tear in the Arch



Arch B



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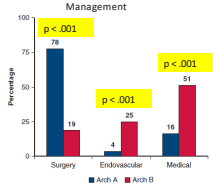
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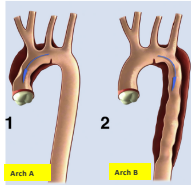
Aortic Dissection with Entry Tear in the Arch

Management



Management	Arch A (%)	Arch B (%)
Surgery	77	16
Endovascular	19	25
Medical	4	51

p < .001 (Surgery vs Endovascular for Arch A)
p < .001 (Endovascular vs Medical for Arch B)

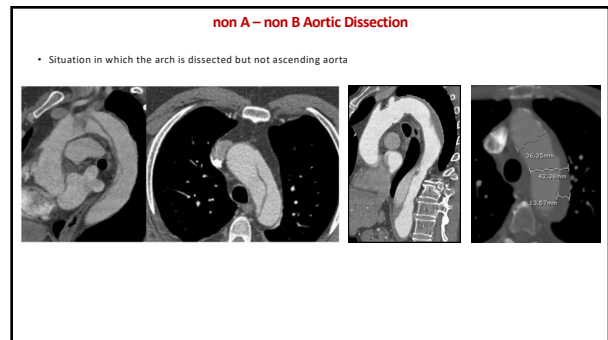
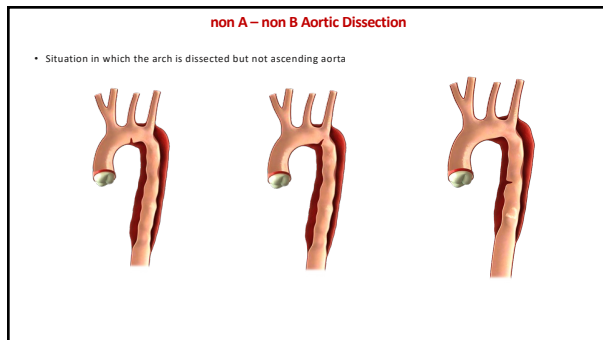
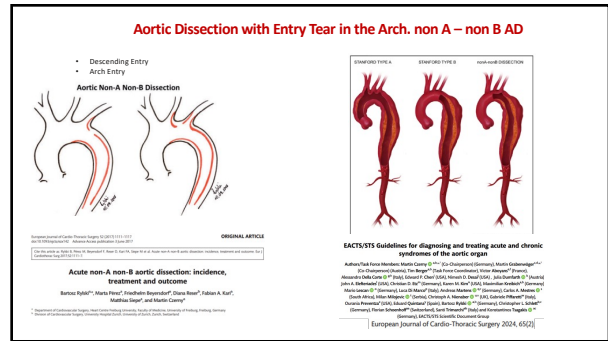
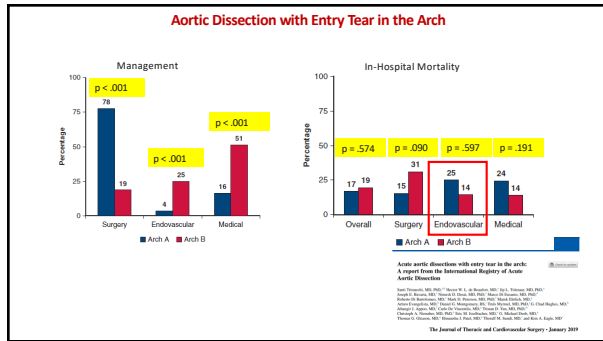


VEITH SYMPOSIUM 2024 ARCH

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non A – non B Aortic Dissection

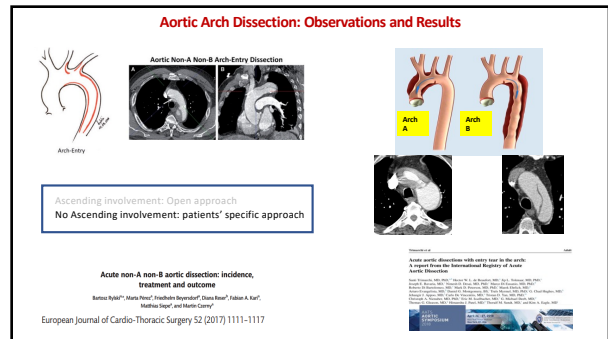
Table 3. Treatment details and outcome

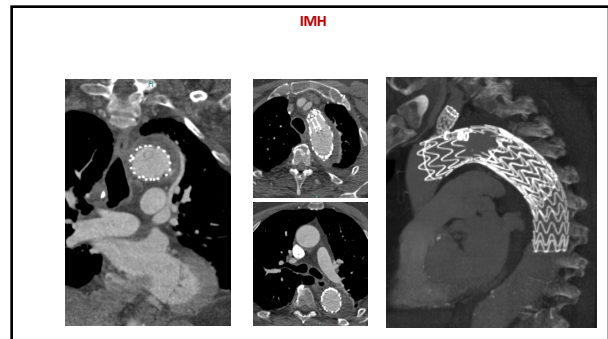
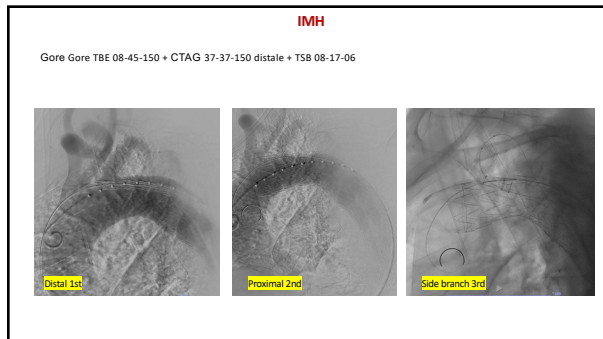
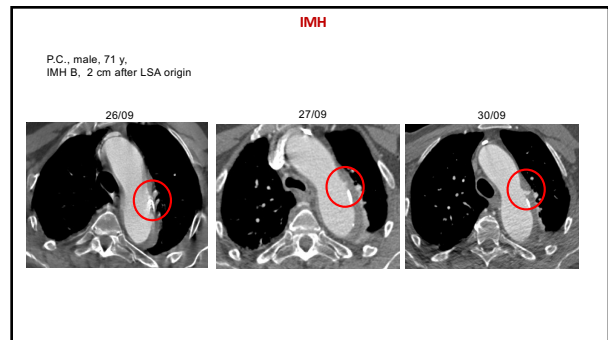
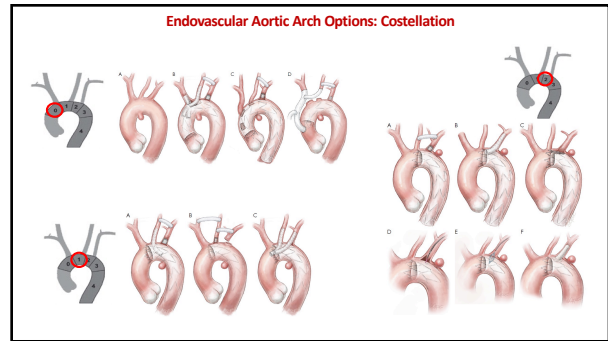
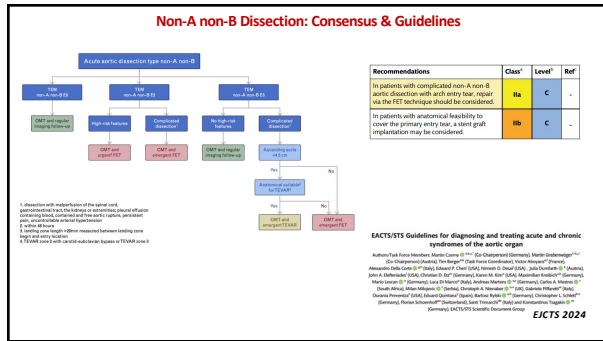
Parameter	All, n=43	Descending entry, n=21	Arch entry, n=22	P-value
TREAT	29 (67.4)	16 (76.2)	13 (59.1)	0.006
Zone 1	1 (2.3)	0	1 (4.5)	1.000
Zone 2	9 (20.9)	0	9 (40.9)	0.003
Zone 3	19 (44.2)	16 (76.2)	3 (13.6)	0.003
Open surgery via sternotomy	4 (9.3)	0	4 (18.2)	1.000
TEF	4 (9.3)	0	4 (18.2)	1.000
Endovascular repair	1 (2.3)	0	1 (4.5)	1.000
Conventional arch replacement	1 (2.3)	0	1 (4.5)	1.000
Other endovascular surgery	4 (9.3)	0	4 (18.2)	1.000
Concomitant treatment	2 (4.7)	1 (4.8)	1 (4.5)	1.000
Intervention/surgery timing	14 (32.6)	6 (28.6)	8 (36.4)	0.626
Emergency	17 (39.3)	9 (42.9)	8 (36.4)	0.239
Elective (>2 weeks)	7 (16.3)	3 (14.3)	4 (18.2)	0.246
Outcome	5 (11.6)	1 (4.8)	4 (18.2)	0.345
Remains alive	38 (88.4)	20 (95.2)	18 (81.8)	0.007
In-hospital mortality	17 (39.3)	9 (42.9)	8 (36.4)	0.500
After urgent repair	0	0	0	0
After elective repair	0	0	0	0
Acute end of follow-up	14 (32.6)	7 (33.3)	7 (31.8)	1.000
TEF	7 (16.3)	3 (14.3)	4 (18.2)	1.000
Open surgery via sternotomy	5 (11.6)	2 (9.5)	3 (13.6)	0.213
Endovascular	2 (4.7)	2 (9.5)	0	0.213

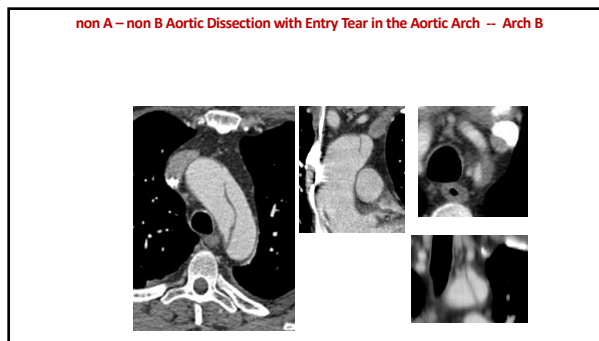
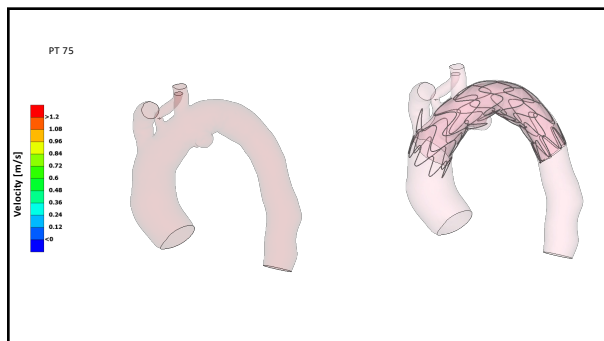
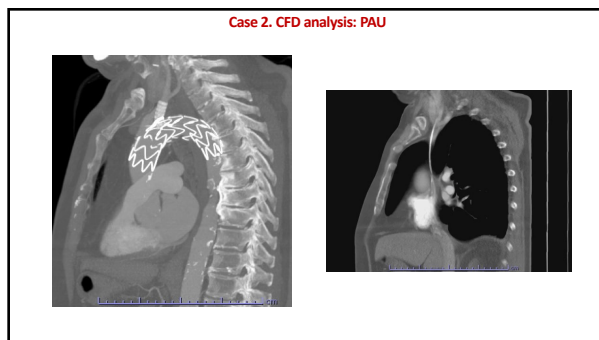
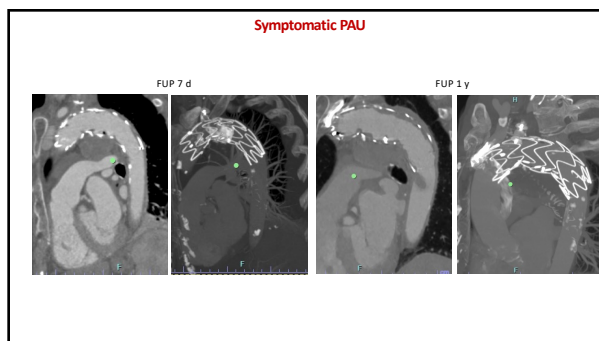
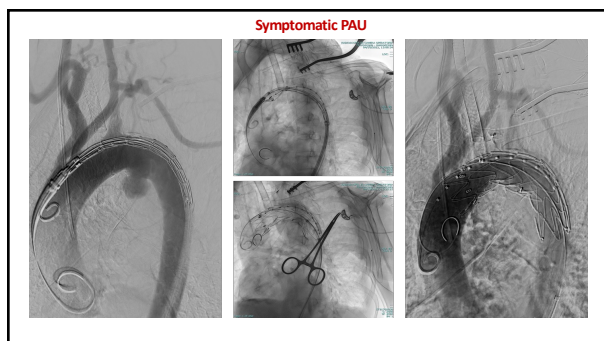
ORIGINAL ARTICLE

Baron-Ruyter¹, Marz², Frerking³, Bovenkerk⁴, Dierckx⁵, Rasse⁶, Fabian A. Karl⁷, Mathias Segers⁸, and Martin Curvo⁹

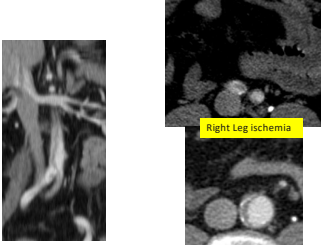
European Journal of Cardio-Thoracic Surgery 2017; 1111-1117







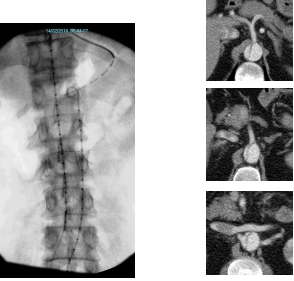
non A – non B Aortic Dissection with Entry Tear in the Aortic Arch – Arch B



Right Leg ischemia

non A – non B Aortic Dissection with Entry Tear in the Aortic Arch – Arch B

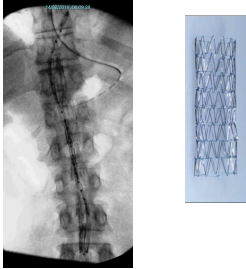
- Aortic Stent



non A – non B Aortic Dissection with Entry Tear in the Aortic Arch – Arch B

- Aortic Stent

Malperfusion solved

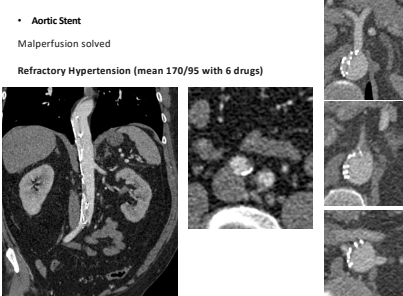


non A – non B Aortic Dissection with Entry Tear in the Aortic Arch – Arch B

- Aortic Stent

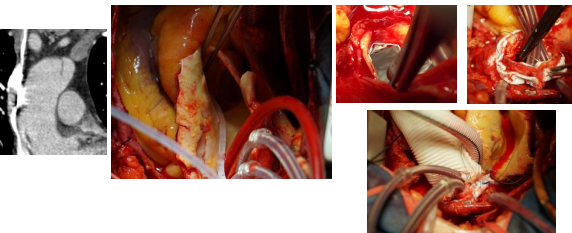
Malperfusion solved

Refractory Hypertension (mean 170/95 with 6 drugs)



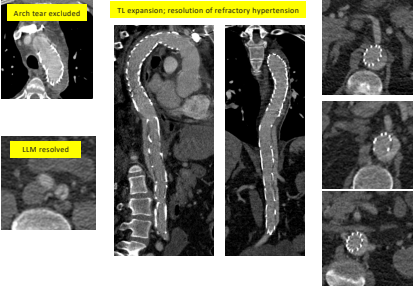
non A – non B Aortic Dissection with Entry Tear in the Aortic Arch – Arch B

- Ascending/arch repair + FET



non A – non B Aortic Dissection with Entry Tear in the Aortic Arch – Arch B

- Arch tear excluded
- TL expansion, resolution of refractory hypertension
- LLM resolved



Conclusions

Aortic Dissection with Entry Tear in the Arch

Going forward, it will be interesting to note the relative use of endovascular techniques, because these procedures become more commonly used for complicated and even uncomplicated acute type B aortic dissections.

This experience accumulated from IRAD centers of excellence demonstrates patient-specific approaches for arch tears, especially of the arch B variety, and I suspect endovascular interventions will become more prevalent going forward.

EDITORIAL COMMENTARY

Acute aortic dissection with entry tear in the aortic arch: International Registry of Acute Aortic Dissection II - The reuser

J Thorac Cardiovasc Surg 2019

Acute aortic dissection with entry tear in the arch: A report from the International Registry of Acute Aortic Dissection

J Thorac Cardiovasc Surg 2019

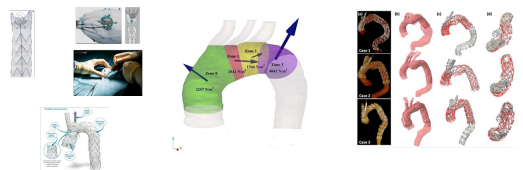
Non-A, non-B aortic dissection: Unresolved issues

J Thorac Cardiovasc Surg 2019

Conclusions

Aortic Dissection with Entry Tear in the Arch

- interesting, new knowledge, the way is still long



The slide contains several diagrams and CT scan images illustrating aortic dissection with an entry tear in the arch. On the left, there are anatomical diagrams of the aortic arch and its branches. In the center, a 3D reconstruction of the aorta shows the location of the entry tear and the extent of the dissection. On the right, there are axial CT scan images showing the dissection in cross-section.

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Thank you

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