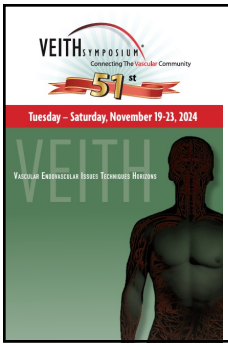


Endovascular Treatment In Patients With Connective Tissue Disorders: When Can This Be Considered First Choice Treatment: Technical Tips And Results

Piergiorgio Cao, MD, FRCS

Disclosure

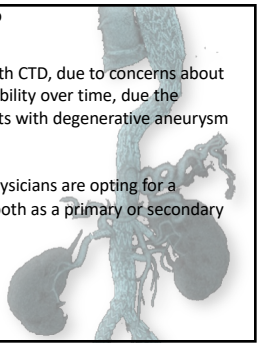
Speaker name:

Piergiorgio Cao

I have no potential conflicts of interest to report

BACKGROUND

- OR is often preferred to ER for patients with CTD, due to concerns about the weakness of the arterial wall and durability over time, due the younger age of these patients than patients with degenerative aneurysm
- Despite this, there is a sense that more physicians are opting for a minimally invasive approach in this field, both as a primary or secondary repair



OPEN REPAIR

Editor's Choice — Open Thoracic and Thoraco-abdominal Aortic Repair in Patients with Connective Tissue Disease

Paula R. Keschenau [a,c], Drosos Kotelis [a,c], Jeroen Bisschop [b], Mohammad E. Barbati [a], Jochen Grommes [a], Barend Mees [b], Alexander Gombert [a], Arnoud G. Peppelenbosch [b], Geert Willem H. Schurink [b], Johannes Kalder [a], Michael J. Jacobs [a,b,*]

Aneurysm type	
DTAA	8 (12)
TAAA type I	8 (12)
TAAA type II	35 (54)
TAAA type III	10 (15)
TAAA type IV	4 (6)
Total	65 (99)[a]

Table 3. Mortality.

Overall mortality	16 (25)
In hospital mortality	9 (14)
Haemorrhage	3 (5)
Neurological	3 (5)
Cardiac	2 (3)
Pulmonary	1 (2)
Late mortality	7 (11)

Table 6. Morbidity.

No complications	23 (35)
Major complications	
Pneumonia	21 (32)
Tracheostomy	12 (18)
Bleeding needing revision	20 (31)
Sepsis	10 (15)
Renal failure + transient dialysis	7 (11)
Renal failure + permanent dialysis	0
Neurological deficit	6 (10)[f]
Paraparesis	3 (5)
Paraplegia	1 (2)
Stroke	2 (3)
Myocardial infarction/cardiac arrest	2 (3)
Peripheral ischaemia	1 (2)
Mesenteric ischaemia	1 (2)
Minor complications	
Vocal cord paresis	6 (9)
Deep venous thrombosis	2 (3)
Pulmonary embolism	1 (2)
Subarachnoid haemorrhage	1 (2)

EJVES 2017

ENDO REPAIR

Outcomes After Endovascular Aortic Intervention in Patients With Connective Tissue Disease

Karl Wilhelm Olsson, MD, PhD[1], Kevin Mani, MD, PhD[1], Anne Burdess, MD, PhD[1], et al.

171 CTD-patients
(142 Marfan, 17 Loeys-Dietz, 12 Ehlers-Danlos)

Population	N = 171
Median age	49.9 y
Aortic dissections	88.9%
Previous OR	79.5%
Arch and/or visceral branches incorporation	43.3%

Results	N = 171
Technical success	98.2%
30-day mortality	2.9%
1-year survival	96.2%
5-year survival	80.6%
Median follow-up	4.7 y
Reintervention	53.2%
Open conversions	8.2%

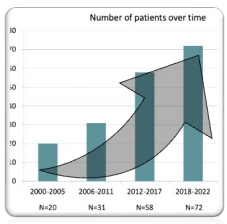
JAMA 2023

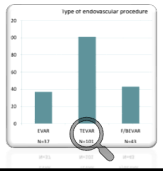
A national cross-sectional survey on time-trends for endovascular repair of genetically-triggered aortic disease and connective tissue disorders over two decades

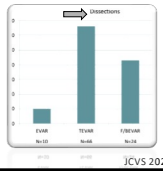
time-trends in Italy

Mario D'ORIA [1,*], Sandro LEPIDI [1], Rocco GIUDICE [2], Jacob BUDTZ-LILLY [3], Ciro FERRER [2], Study Collaborators [‡]

Number of patients	181
Age (median; range)	48 (27-66)
Type of GTAD: Marfan	124/181 (68.5%)
Loeys-Dietz	26/181 (14.4%)
Ehlers-Danlos	23/181 (12.7%)
Other	8/181 (4.4%)







JCVS 2024

A national cross-sectional survey on time-trends for endovascular repair of genetically-triggered aortic disease and connective tissue disorders over two decades

Mario D'ORIA [1]*, Sandro LEPIDI [1], Rocco GIUDICE [1], Jacob BUDTZ-LILLY [2], Ciro FERRER [1], Study Collaborators [1]

Mortality at 30 days	(Overall)
EVAR	1/37 (2.7%)
TEVAR	13/101 (12.9%)
F/BEVAR	4/43 (9.3%)
TOTAL	18/181 (9.9%)
Elective mortality	8/134 (6.0%)
Urgent/emergent mortality	10/47 (21.3%)

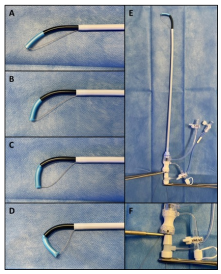
Technical success	(as per SVS reporting standards)
EVAR	29/37 (78.4%)
TEVAR	91/101 (90.1%)
F/BEVAR	31/43 (72.1%)
TOTAL	151/181 (83.4%)

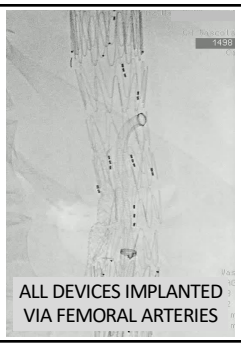
1-year follow-up	163 alive patients/181
Mortality	27/181 (14.9%)
Type 1 Endoleak	6/163 (3.7%)
Reintervention	12/163 (7.4%)

JCVS 2024

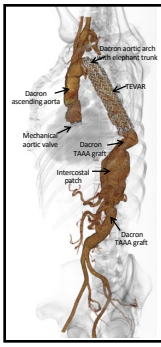
Exponential growth of any aortic ER in CTD/GTAD-patients from **3.3 patients/year** in the first period (2000 – 2005) to **14.4 patients/year** in the final period (2018 – 2022)

Technique evolution

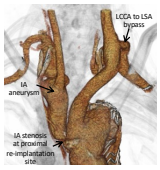


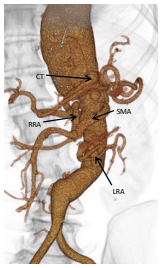


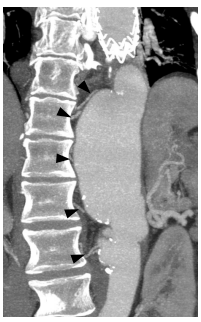
ALL DEVICES IMPLANTED VIA FEMORAL ARTERIES

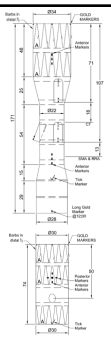


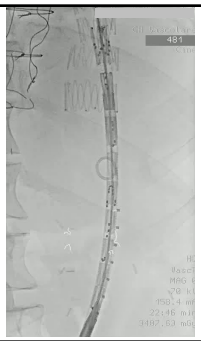
34 yo Loeys-Dietz and multiple aortic interventions

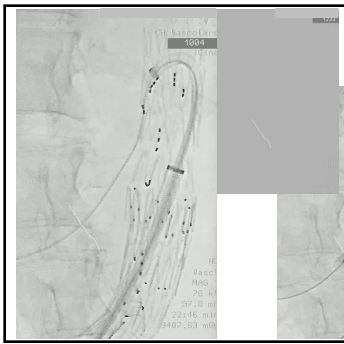


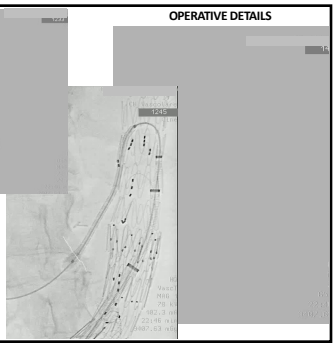


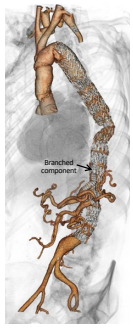


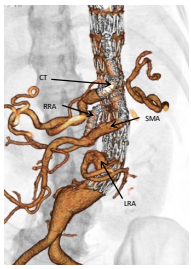


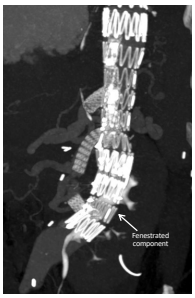






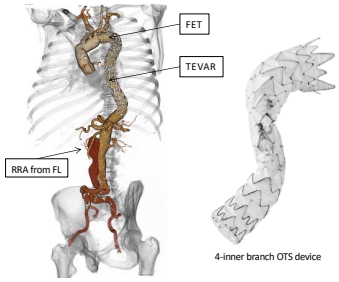






60 yo Marfan

18-m follow-up post iBEVAR



DISCUSSION

ER is considered permissible and possibly first-line:

- in high-risk patients especially for **hostile thorax/abdomen**
- when the stent-graft is intended to be deployed **in a previous surgical graft**
- for **intercostal patch aneurysms** that may occur after TAAA surgical repair
- in selected patients with complicated acute type B dissections as an **emergency bridging procedure**

CONCLUSION

- The complexity of an extensive surgical aortic replacement in the setting of a CTD remains not negligible
- The high rate of prior open aortic intervention in contemporary ER series confirms that OR cannot be considered definitive in the long-term
- A more liberal use of branches instead of fenestrations, the introduction of inner branches, and the total transfemoral approach are today making the procedures safer and easier