

Current Status And Results With Terumo Ascending Aorta Endograft: What Makes It Different And What Lesions Can It Treat

V. Rimbau, MD, PhD, RAMC
 Professor and Chief of Vascular Surgery Department
 and Teaching Vascular Unit
 Cardiovascular Institute, Hospital Clinic
 University of Barcelona, SPAIN



Disclosures

I have the following potential conflicts of interest to report:

- Consulting: Terumo Aortic, Medtronic, Cook Medical, iVascular, W.L. Gore, VB Devices, Lifetech, Möller Medical, Aortyx, Balt Medical.
- Stockholder of a healthcare company: Aortyx, VB Devices

2



Index

- Background
- Ascending Relay features
- Clinical experience with Ascending Relay
- Next generation
- Summary

3



Index

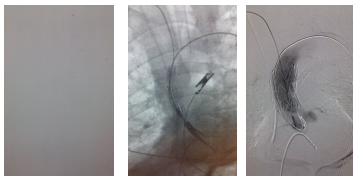
- Background
- Ascending Relay features
- Clinical experience with Ascending Relay
- Next generation
- Summary

4



Potential role of endografting in Ascending Aorta pathology

- Pseudoaneurysms
- **Type A dissections**
- Penetrating ulcers
- Isolated aneurysms
- .../...



5

de Kort JF, et al. Eur J Vasc Endovasc Surg. 2024 Nov



Technical considerations and challenges



Challenges	Technical considerations
Proximal fixation near to sinotubular junction (coronary ostia, aortic valve)	TEE, accurate delivery system, short nose cone
Distal fixation near to brachiocephalic trunk	Short devices (60-80 mm)
Displacement forces in ascending	Cardiac arrest, rapid PM or cava balloon occlusion
Tortuous anatomy (access site)	Supra-aortic access, trans-apical access

6




Index

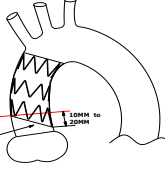
- Background
- Ascending Relay features
- Clinical experience with Ascending Relay
- Next generation
- Summary



7



Ascending Technology with Relay® NBS



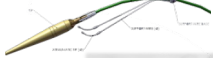


1st Generation NBS for ascending exhibited oblique deployment





8



Ascending Technology with Relay® NBS

- Improved conformation and prevention of retroflex deployment
- Self-orienting pre-curved NITI guidewire lumen
- Dual sheath design facilitates advancement into Zone 0

9



Ascending RELAY: device description

- Diameters from 28 to 48 mm
- Total covered length to 65-80mm
- Further customizable features: Tapering and reverse tapering




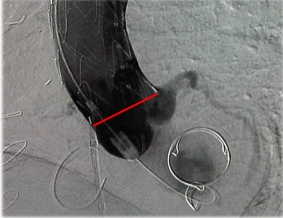
RELAY PRO Delivery system






10





Relay® NBS Plus Technology

11



Index

- Background
- Ascending Relay features
- Clinical experience with Ascending Relay
- Next generation
- Summary

12



Ascending Relay Experience

- 9 patients considered unfit for open surgery received elective total endovascular repair of the ascending aorta with a Relay (Terumo Aortic, Sunrise; FL, USA)
 - n=5 pseudoaneurysm
 - n=3 localized dissection
 - n=1 contained rupture

Demographics	
M:F, n	7:2
Age, mean±SD	71±10
Comorbidities, n (%)	
Hypertension	8 (89)
Valve disease	7 (78)
Coronary artery disease	6 (67)
Previous cerebrovascular accident	2 (25)
Diabetes	3 (33)
Atrial fibrillation	2 (22)
Left heart insufficiency	1 (11)
Chronic kidney disease (eGFR < 30 ml/min)	1 (11)
Risk factors	
Previous cardiovascular surgery (patients), n (%)	8 (89)
Bentall, n	3
Biological valve, n	2
Mechanical valve, n	1
CABG, n	3
AVR (biological), n	2
MVR, n	1
Descending TEVAR, n (%)	1 (11)
Slippery aorta, n (%)	1 (11)
Porcelain aorta, n (%)	1 (11)
Relay (n=9)	15 ± 13
EuroSCORE-II, mean ± SD*	

13 Piffaretti G, Czerny M, Rimbau V, et al. Eur J Cardio-Thorac Surg. 2021

Clinic Barcelona UNIVERSITAT DE BARCELONA

Hospital Clinic's experience 2008

61 yo man Postop: Bentall Pseudoaneurysm Relay, Bolton Medical, Custom LSA Early success

15 Clinic Barcelona UNIVERSITAT DE BARCELONA

Hospital Clinic's experience 2008

16 Clinic Barcelona UNIVERSITAT DE BARCELONA

Hospital Clinic's experience 1 year follow-up

17 Clinic Barcelona UNIVERSITAT DE BARCELONA

Custom Ascending Relay® Case

"Courtesy of Prof. Stefano Genail, Santi Agostino Estense hospital, Baggiovara (MO) - Italy"

20 Clinic Barcelona UNIVERSITAT DE BARCELONA

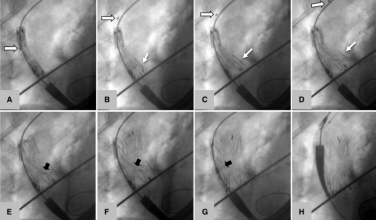
Index

- Background
- Ascending Relay features
- Clinical experience with Ascending Relay
- Next generation
- Summary

21 Clinic Barcelona UNIVERSITAT DE BARCELONA

- New delivery design for Ascending RELAY

- **Two apices facing the outer curvature** are connected to the tip capture system and are only released after the stent-graft is fully deployed



- **Two apices facing the inner curvature** are not connected to the tip capture system

Exact perpendicular deployment to the aortic axis

Hauck SR, et al. Cardiovasc Intervent Radiol. June 27, 2021.

Clínica Barcelona | UNIVERSITAT DE BARCELONA

Index

- Background
- Ascending Relay features
- Clinical experience with Ascending Relay
- Next generation
- Summary

23

Clínica Barcelona | UNIVERSITAT DE BARCELONA

Summary

- Patient selection and highly experienced team are crucial for a successful outcome
- Endovascular repair should be considered for unfit patients only
- Ascending thoracic endografting with Terumo CMD is feasible and safe
- New technical developments will improve endograft conformability
- Multicentre Clinical experience should be collected and reported.

24

Clínica Barcelona | UNIVERSITAT DE BARCELONA



25th Anniversary International Symposium ENDOVASCULAR THERAPEUTICS 2025

SAVE THE DATE

ENDO VASCULAR FOUNDATION

Current Status And Results With Terumo Ascending Aorta Endograft: What Makes It Different And What Lesions Can It Treat

V. Rimbau, MD, PhD, RAMC
Professor and Chief of Vascular Surgery Department
and Teaching Vascular Unit
Cardiovascular Institute, Hospital Clinic
University of Barcelona, SPAIN

Clínica Barcelona | UNIVERSITAT DE BARCELONA