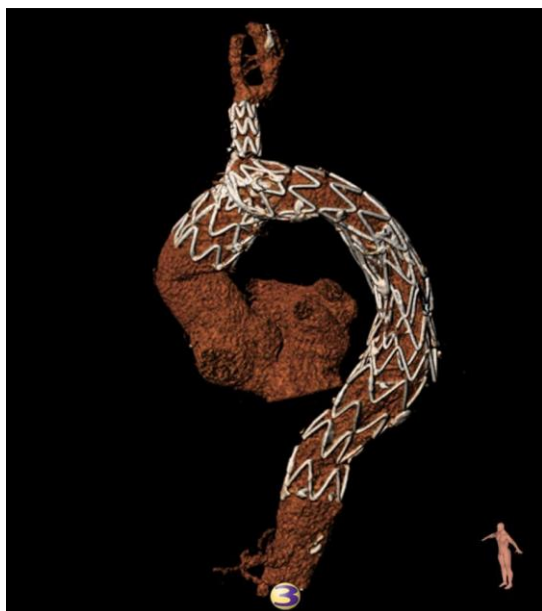


THE 26TH INTERNATIONAL EXPERTS SYMPOSIUM
CRITICAL ISSUES
IN AORTIC ENDOGRAFTING

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

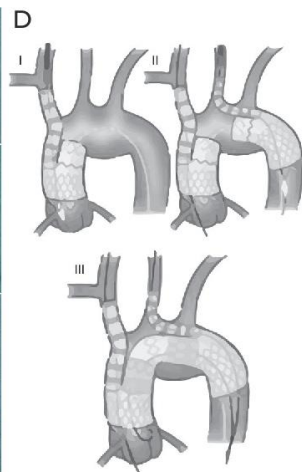
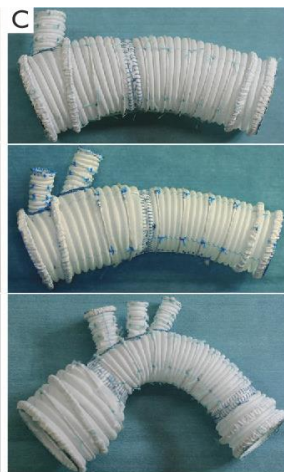
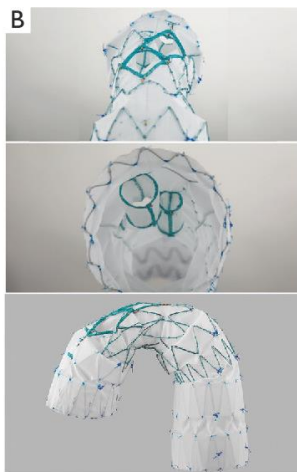
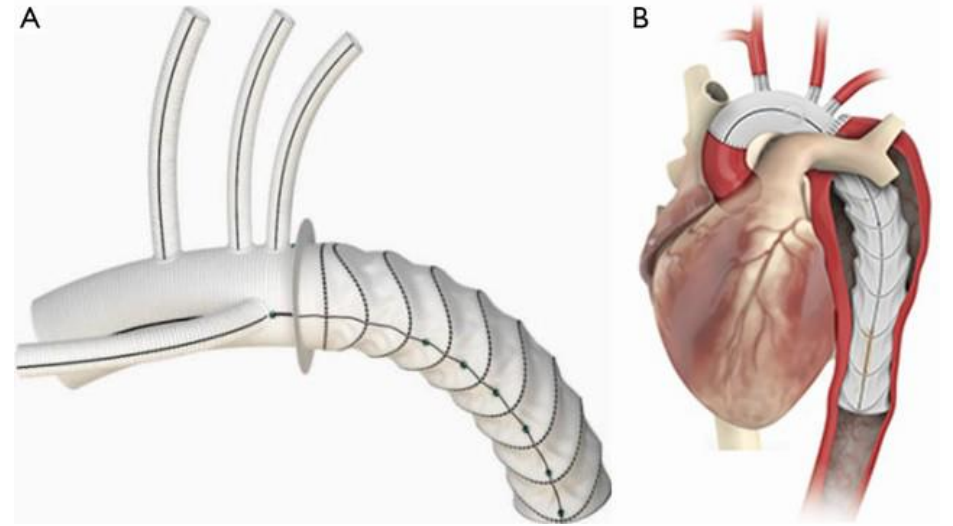
OUTCOMES ON THE USE OF THE DIFFERENT ARCH DEVICES



Enrique M. San Norberto.
Angiology and Vascular Surgery.
Valladolid University Hospital. Valladolid. Spain.

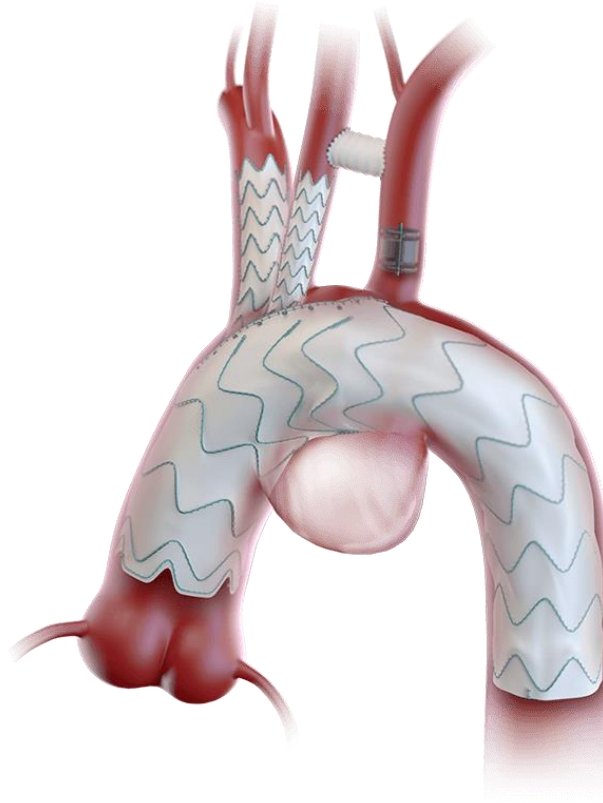
AORTIC ARCH ENDOVASCULAR TREATMENT

- High and prohibitive risk for open repair.
- Patient selection: comorbidities.
- Unfit for open repair.

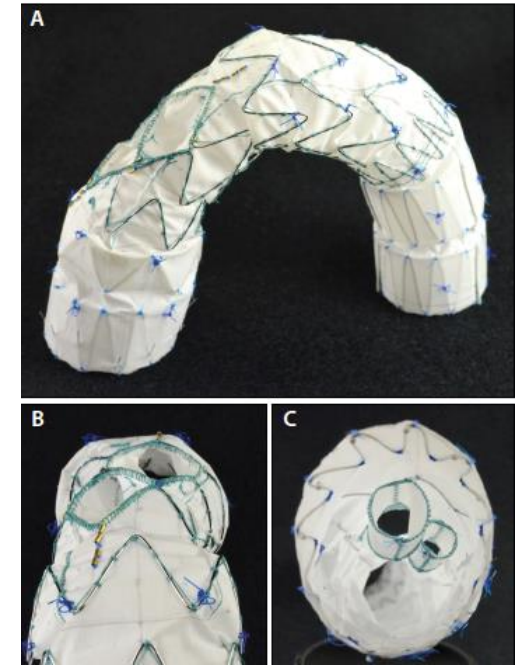




- Nexus stent-graft system®.



- Relay Branch®.



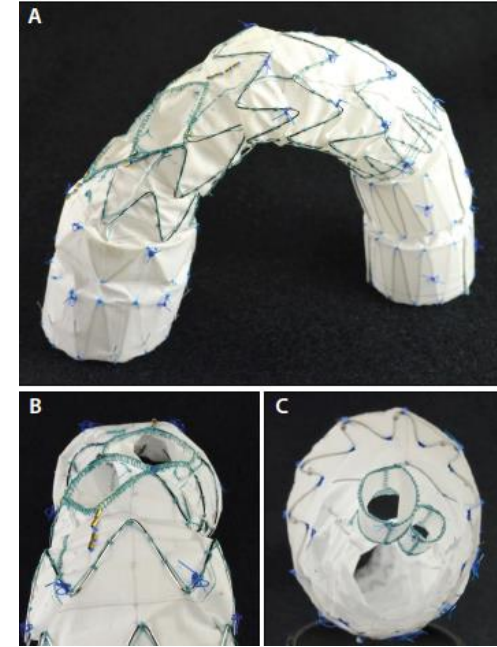
- Zenith arch branch graft®.



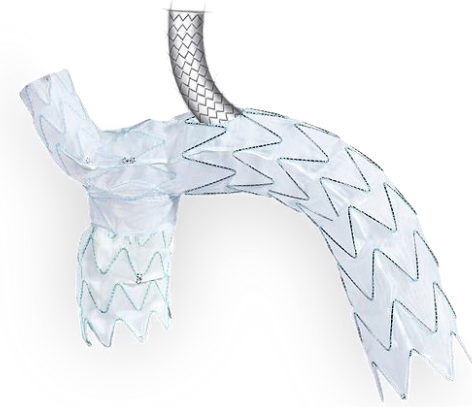
Nexus stent-graft system®

OFF THE SELF

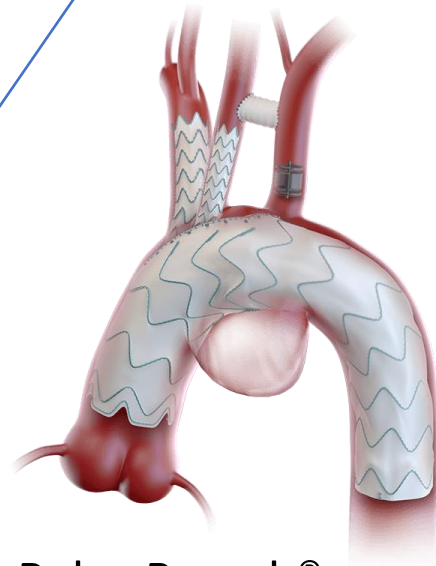
CE mark



Zenith arch branch graft®

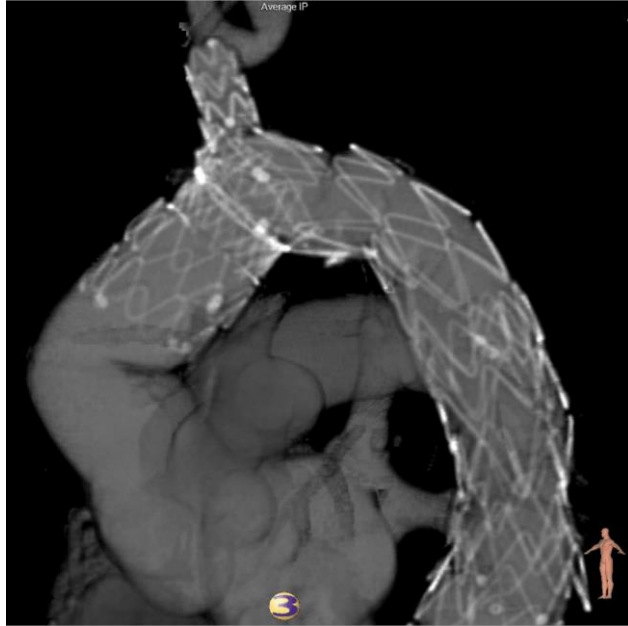


Nexus duo®

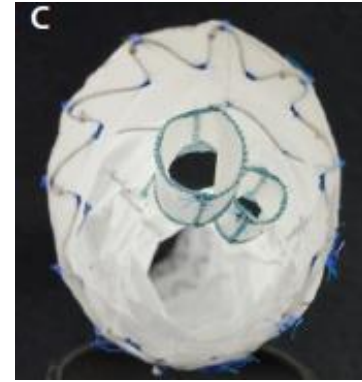


Relay Branch®

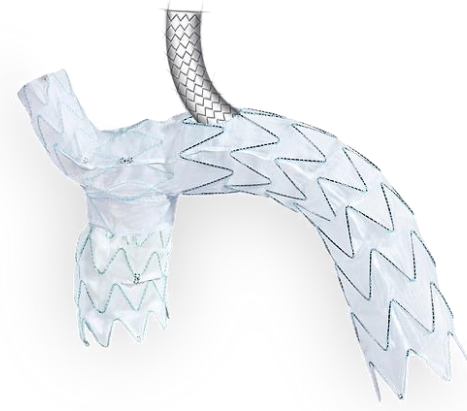
**CUSTOM
MADE**



Nexus stent-graft system®



Zenith arch branch graft®



Nexus duo®

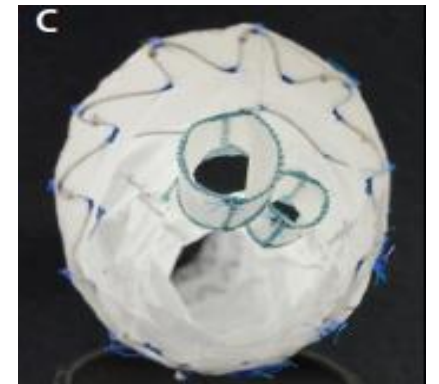
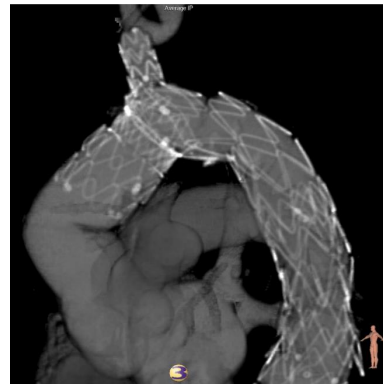


Relay Branch®

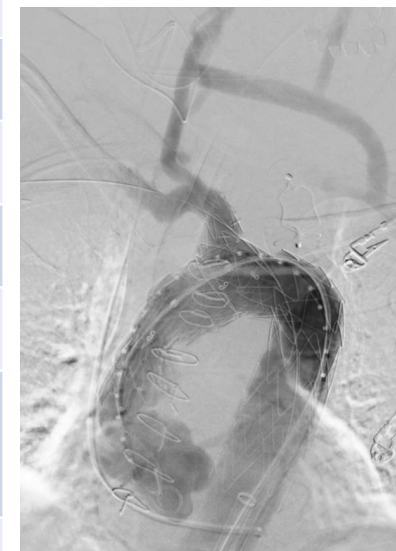
**HEMODYNAMIC
CHALLENGES
RISK OF STROKE**



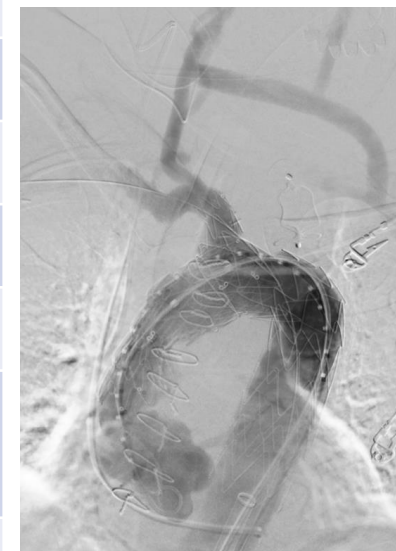
	NEXUS	RELAY-BRANCH	ZENITH ARCH-BRANCH
Author	Planer et al.	Jubouri et al.	Nana et al.
Year	2023	2023	2024
n	28	125	116
30-days follow-up			
Mortality	7.1%	3.1%	10.3%
Non-disabling strokes	3.6%	2.4%	3.9%
Disabling strokes	0.0%	3.2%	7.1%



	NEXUS / DUO	RELAY-BRANCH	ZENITH ARCH-BRANCH
Outer diameter	20 Fr	24-26 Fr	22-24 Fr
Ascending aorta			
diameter	29-39mm	29-43mm	29-38mm
length (outer)	50mm	40mm	50mm
Descending aorta			
diameter	26-40mm	19-43mm	20-42mm
Brachiocephalic artery			
diameter	11.5-18.5mm	7-20mm	7-20mm
length	≥20mm	≥25mm	≥20mm



	NEXUS / DUO	RELAY-BRANCH	ZENITH ARCH-BRANCH
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ENDOvascular Branching stent-grafts for aortic ARCh pathologies in Spain.

- Nexus stent-graft system[®], Relay Branch[®] or Zenith arch branch graft[®].
- Proximal landing at zone 0.
- Devices implanted at the discretion of the treating physician.
- *Vascular Investigation Network of the Spanish Society for Angiology and Vascular Surgery.*
- January 1st, 2022.
- ClinicalTrials: NCT05309707.



seacv

Sociedad Española
de Angiología y
Cirugía Vascular



OVIEDO

- Central University Hospital Asturias

ZARAGOZA

- Miguel Servet University Hospital.
- Lozano Blesa University Hospital

BURGOS

- University Hospital

BARCELONA

- Santa Creu i Sant Pau Hospital.
- Vall d'Hebron University Hospital.

VALLADOLID

- University Hospital



VALENCIA

- University Clinic Hospital

MADRID

- Montepíncipe Hospital.
- Gregorio Marañón

ALICANTE

- General University Hospital

LAS PALMAS

- Dr. Negrin University
Hospital

CARTAGENA

- Santa Lucia General
University Hospital

GRANADA

- San Cecilio
University Hospital

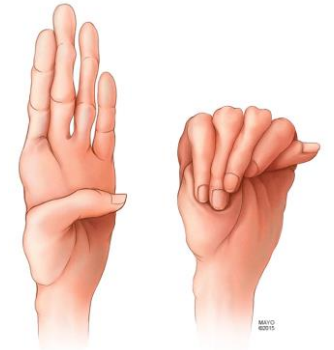
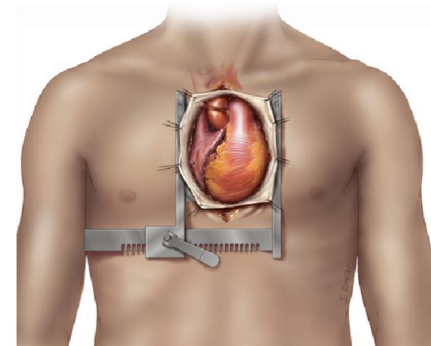
14
hospitals

	n=36	%
Age	72.5	59-84
Male	27	75%
ASA classification		
III	6	16.7%
IV	30	83.3%
History of smoking	10	27.8%
Hypertension	17	47.2%
Dyslipidemia	12	33.3%
Diabetes mellitus	2	5.6%
Peripheral arterial disease	6	16.7%
Cerebrovascular disease	2	5.6%
Cancer	3	8.3%
Renal insufficiency	7	19.4%
COPD	5	13.9%
Coronary artery disease	7	19.4%



Previous sternotomy: **33.3%**

Connective tissue disorder: **0%**



Aortic arch disease:

- **Aneurysm: 52.8%** (19 cases)
- **Dissection: 41.7%** (15 cases)
- **Intramural hematoma: 2.8%** (1 case)
- **Penetrating ulcer: 2.8%** (1 case)



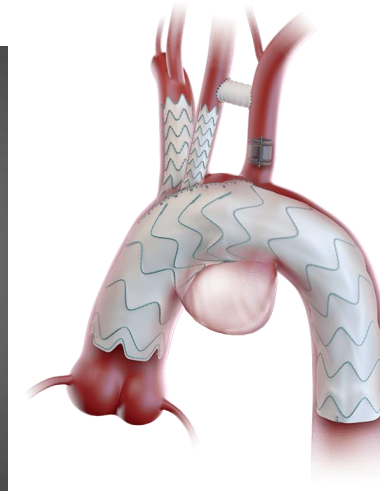


	n=36	% / range
Previous SAT revascularization	23	63.9%
Time since STA rev. untill implantation	41.3 days	2-156
Surgery time (min)	285.7	140-540
Fluoroscopy time (min)	48.6	24-75
Contrast volume (ml)	183.9	115-300
Rapid pacing (number)	1.44	0-3
Rapid pacing time (sec)	36.0	0-123
NEXUS Standard	17	94.4%
Duo	1	5.6%
RELAY 2 branches	6	37.5%
3 branches	10	62.5%
NEXUS covered stent BCT	2	11.1%
RELAY		
TREO custom	8	19.0%
Excluder limb	10	23.8%
BeGraft Aortic	8	19.0%
Viabahn	14	33.3%
Covera	2	4.8%



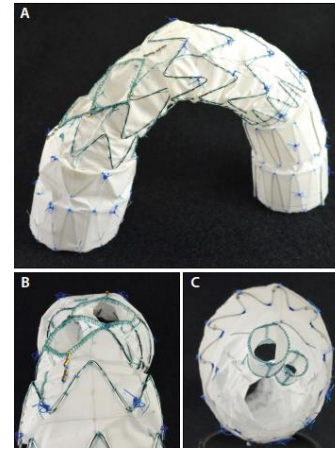
Nexus®

50% (18 cases)



Relay®

44.4% (16 cases)

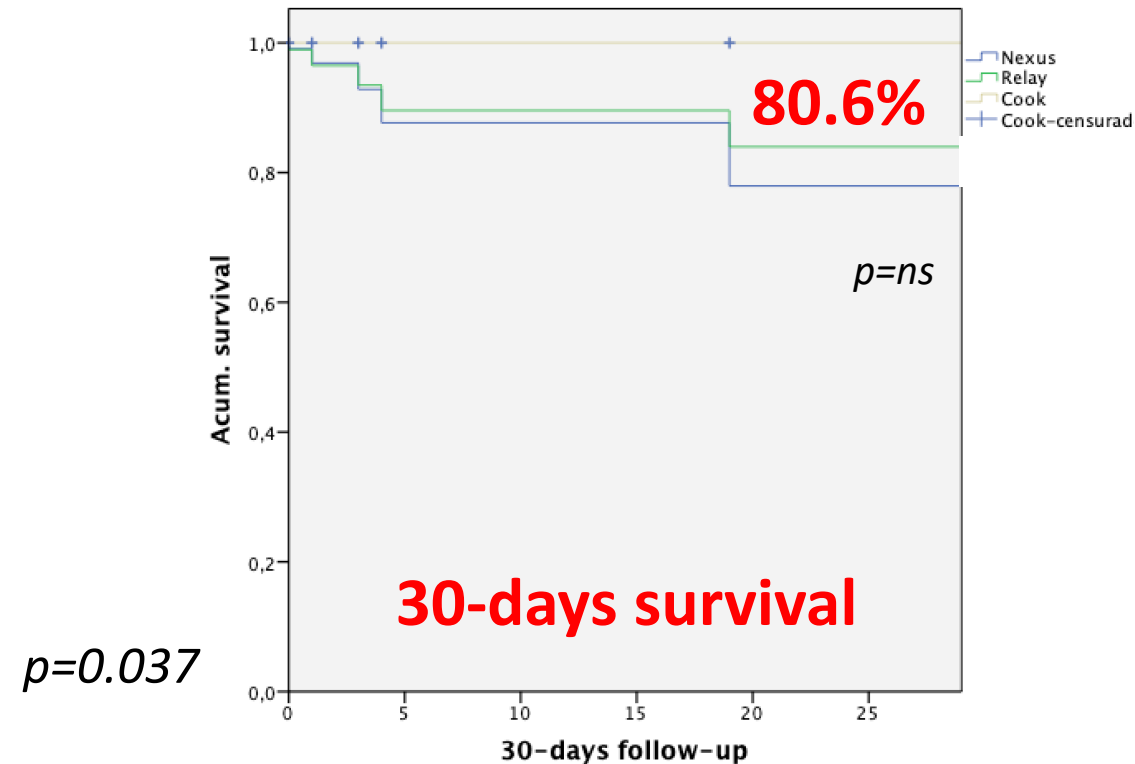


Zenith®

5.6% (2 cases)

Intraoperative endoleak Ib: **11.1%**

RESULTS 30-days	n=36	% / range
Mortality	7	19.4%
Intraprocedure mortality	2	5.6%
NEXUS	1	
RELAY	1	
7 days mortality	4	11.1%
NEXUS	2	
RELAY	2	
8-30 days mortality	1	2.8%
NEXUS	1	
Reoperation	4	11.1%
Endoleak Ib	2	
Endoleak III	2	
Stroke	0	0%
Minor stroke	9	25.0%
NEXUS	2	5.6%
RELAY	7	19.4%
Aortic rupture	1	2.8%
Arrythmia (Atrial fibrillation)	3	8,3%
Acute myocardial infarction	2	5.5%
Cardiac insufficiency	10	27.8%



30-days technical success: 69.5%



RESULTS	n=36	% / range
Length ICU stay (days)	1.9	(0-8)
Length hospital stay (days)	11.3	(1-90)
RESULTS 1-YEAR FOLLOW-UP		
Mortality 1-year follow-up	8	22.2%
30-days follow-up	7	19.4%
180-days follow-up	1*	2.8%
Aortic rupture	1	2.8%
Reoperations	4	11.1%
Endoleak	0	0%
Intercomponent separation >10mm	0	0%
Loss of device integrity	0	0%
Kinking	0	0%
Infection	0	0%
Increasing aneurysm size	0	0%

* Non-related dead: pancreatic cancer





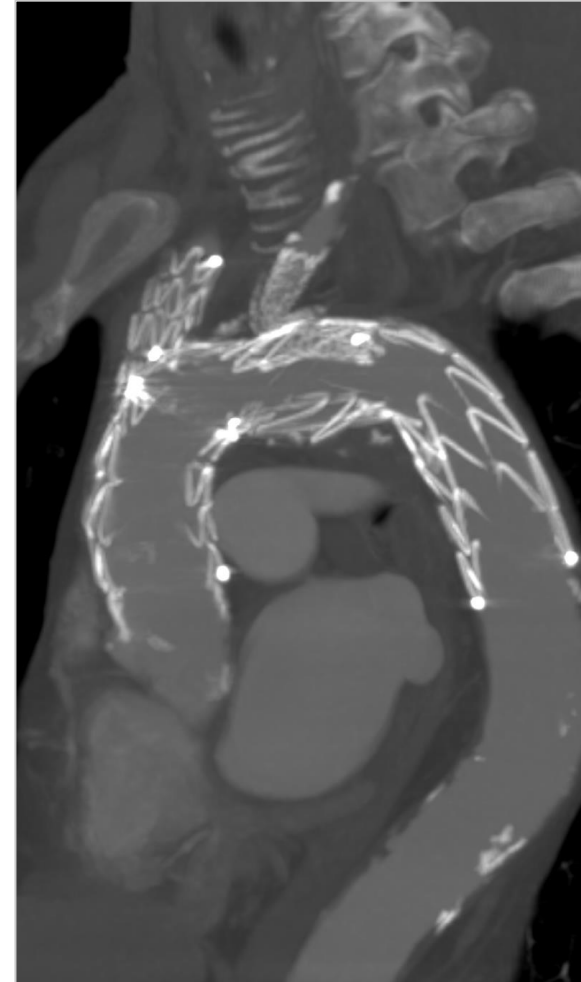
MORTALITY 30-days RISK FACTORS	Death n=7	Alive n=29	P
Age	77.9±12.3	71.5±9.1	0.062
Male	71.4%	51.7%	0.042
Dissection	85.7%	31.0%	0.023
NEXUS stent-graft	57.1%	48.3%	0.375
RELAY stent-graft	42.9%	44.8%	0.485
ASA classification IV	57.1%	65.5%	0.743
History of smoking	28.6%	27.6%	0.354
Hypertension	85.7%	37.9%	0.013
Dyslipidemia	28.6%	34.5%	0.453
Diabetes mellitus	0.0%	6.9%	0.234
Peripheral arterial disease	14.3%	17.2%	0.751
Cerebrovascular disease	0.0%	6.9%	0.835
Cancer	14.3%	6.9%	0.326
Renal insufficiency	28.6%	17.2%	0.124
COPD	14.3%	13.8%	0.536
Coronary artery disease	28.6%	17.2%	0.263




Dissection: OR 2.7 (95%CI 1.1-7.3)
Hypertension: OR 3.2 (95%CI 1.4-6.2)

CONCLUSIONS:

- The treatment of aortic arch pathologies with branched stent-graft systems are increasing.
- This endovascular technique offers a minimally invasive treatment for patients with prohibitive risk for open surgical repair.
- But they are not exempt from the occurrence of life-threatening complications and short-term mortality.
- Nevertheless, after 1-year of follow-up their results are very promising.






Branched
stent-grafts

Vascular
surgeons

Parallel, in situ fen,
physician-modified



Open surgery



THANK YOU!

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