

Options and optimal solutions for bridging stenting of the renal arteries

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

Consulting: Boston, Cook, Cordis, Gore, Medtronic

Employment in industry

Stockholder of a healthcare company

Owner of a healthcare company

Other(s)

I do not have any potential conflict of interest

Introduction

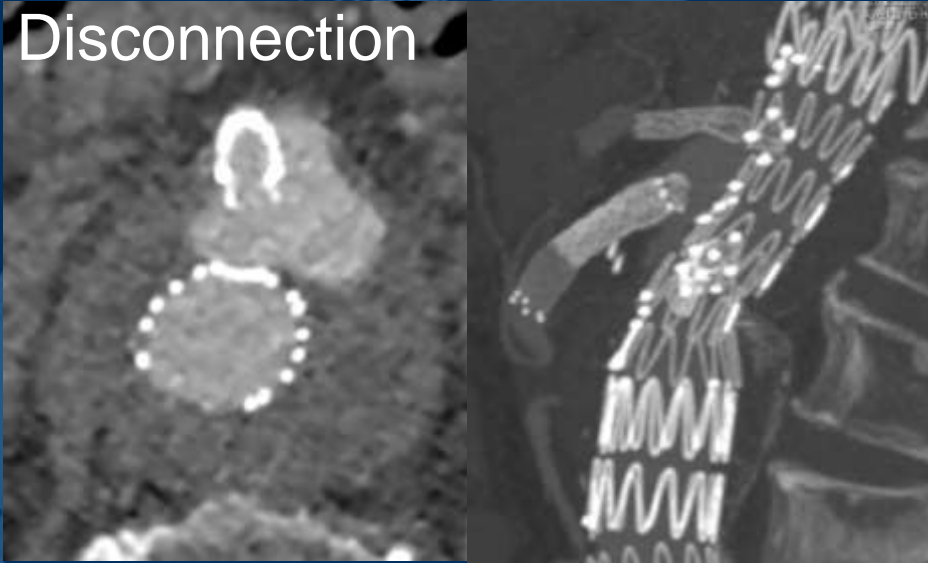
FEVAR and BEVAR have been demonstrated to be an alternative treatment option for pararenal and thoracoabdominal aneurysms

No dedicated bridging stents are on the market

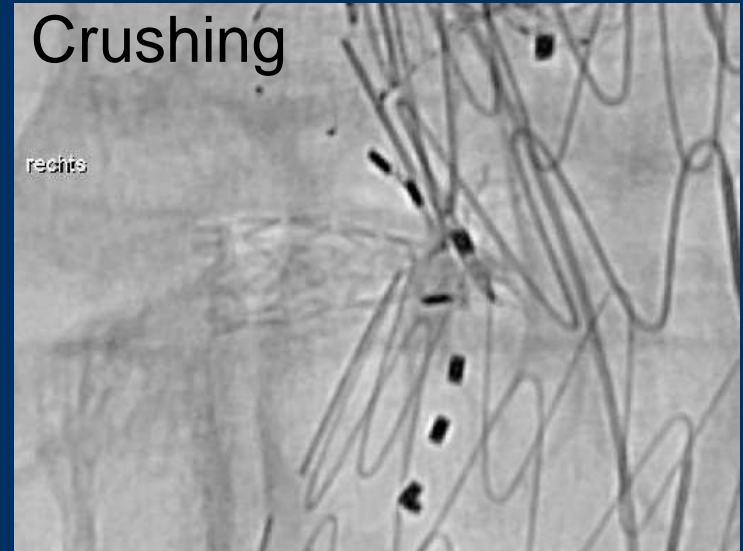
Several failures of fenestration device combinations have been reported

Failure modes after FEVAR

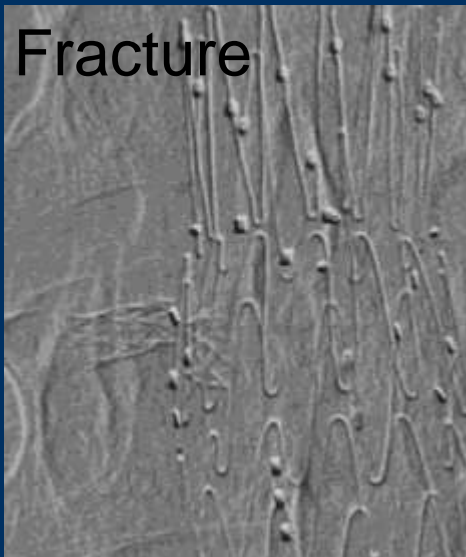
Disconnection



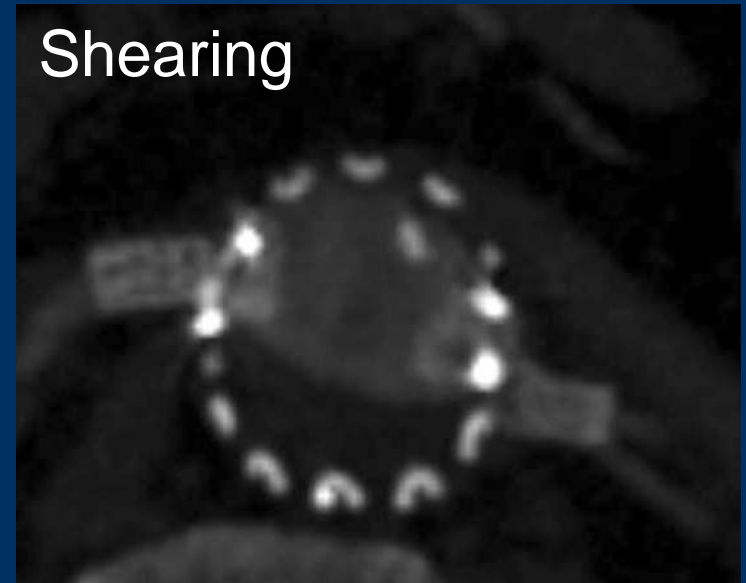
Crushing



Fracture



Shearing



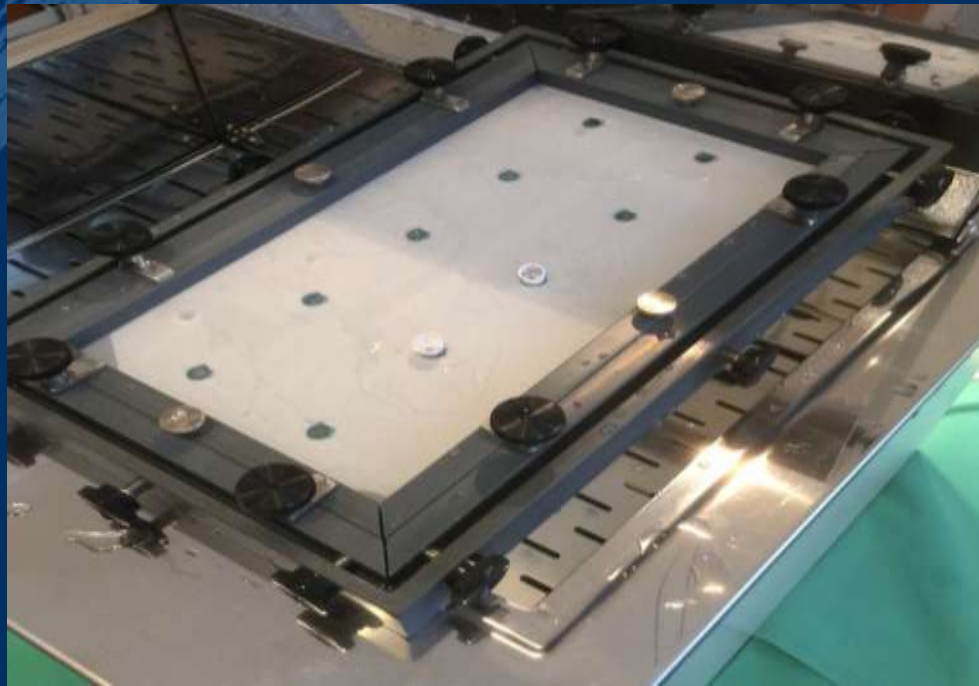
Features of VBX™



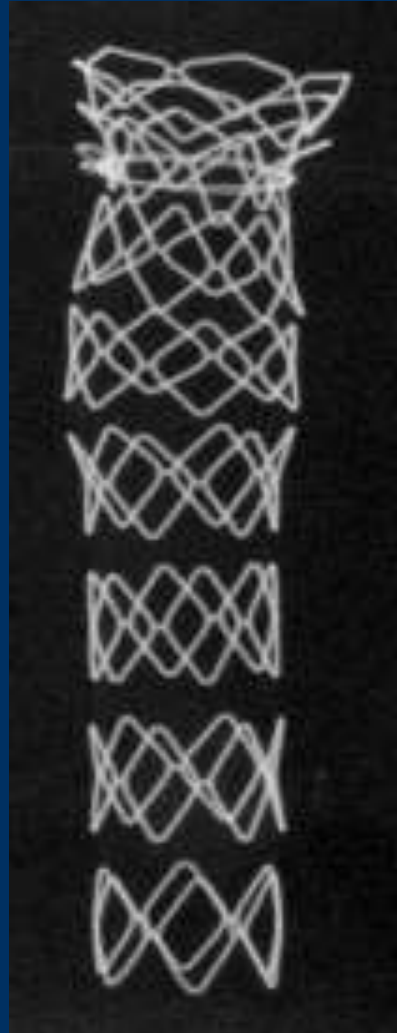
GORE® VIABAHN® VBX Balloon
Expandable Endoprosthesis

Good for FEVAR ?

Framed polyester test sheet with 10 reinforced fenestrations (6 and 8 mm)



No fractures after flaring



Integral water permeability (IWP) testing according to ISO 7198

-Purpose-

To measure the rate of water leakage
through the entire prosthesis under a
pressure of 16 kPa

Water permeability test of VBX



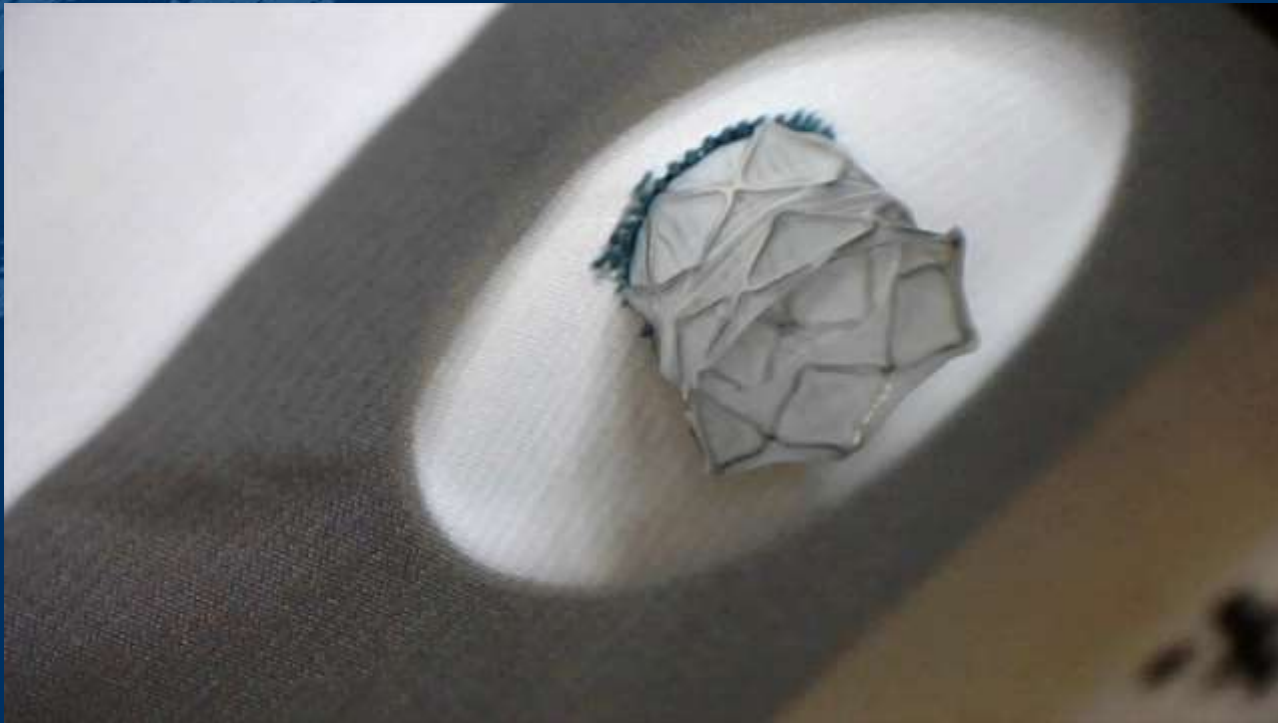
Water permeability test of competitor



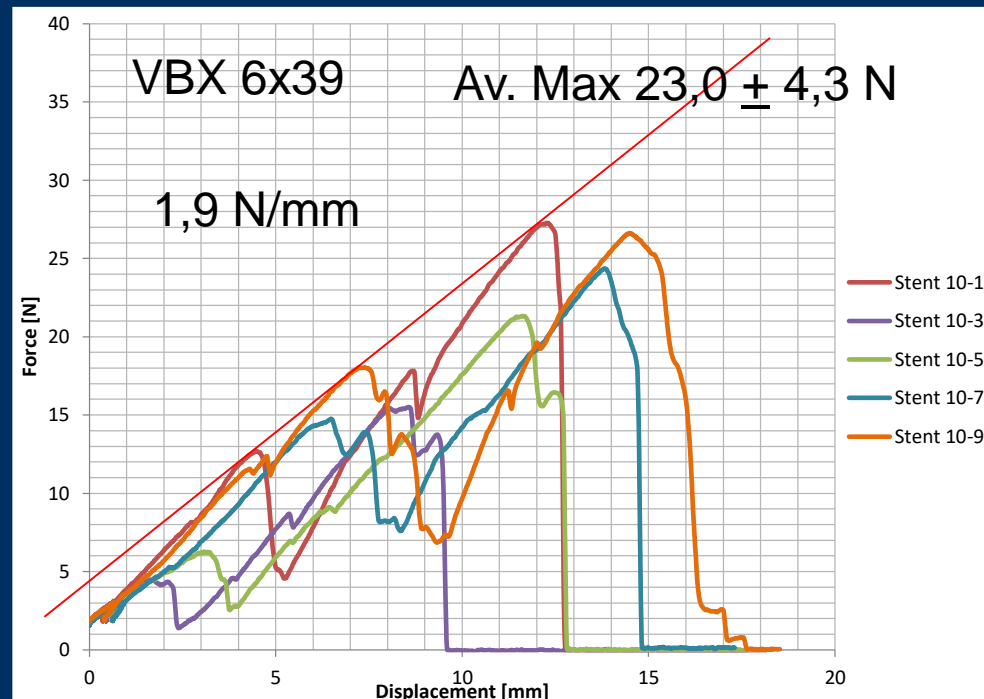
Biomechanical testing of the forces needed for **perpendicular** dislocation (90° direction, **pull-out force**) and **axial** dislocation (parallel, **shear-stress force**) of the bridging stent



Biomechanical testing of pull-out forces



Pull-out forces of 6 mm VBX



Fatigue-Test:



Pre

After 10 Mio

Advanta V12
6x38



BeGraft 6x38



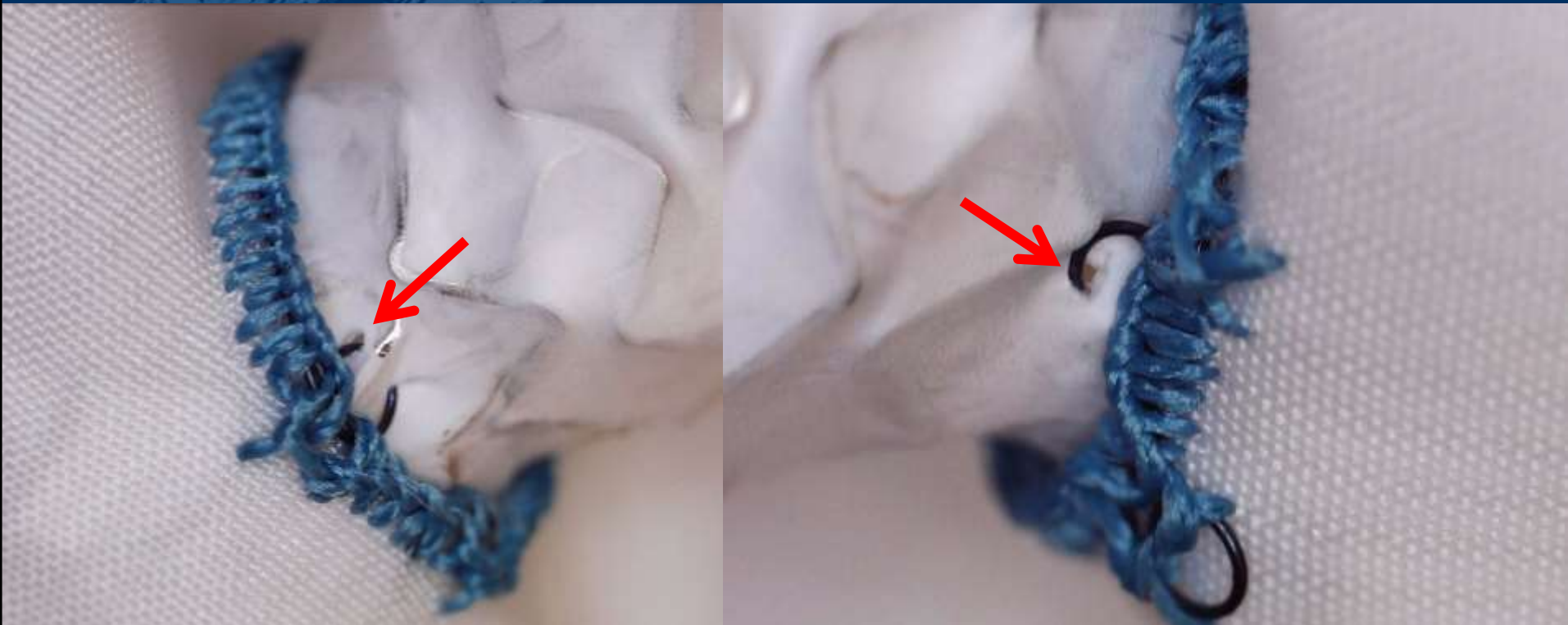
BeGraft+ 6x38



VBX 6x39



PTFE defect through erosion by the nitinol ring (competitor)

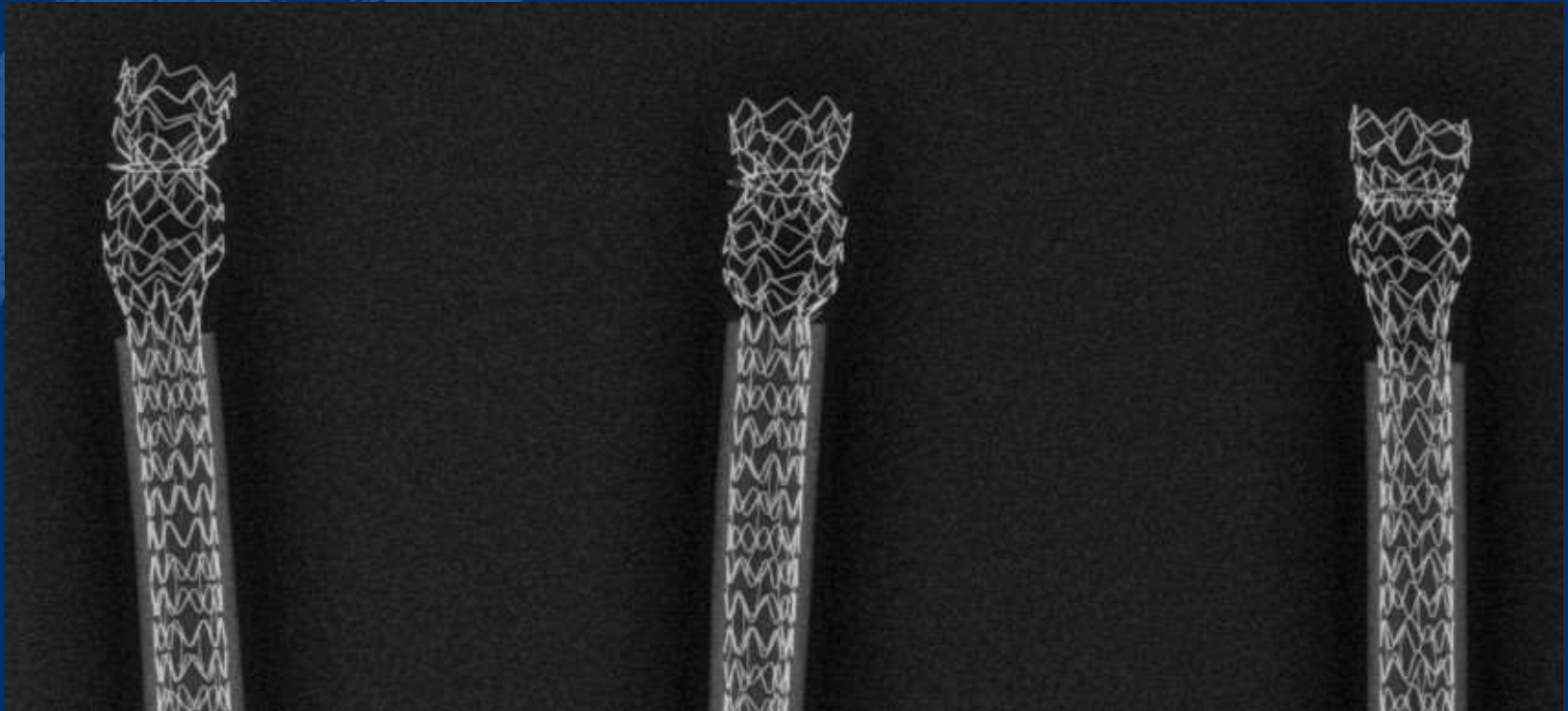




Keyence 4K Mikroskop



Digital radiography after 10 Mill. Cycles (VBX)



bEVAR and VBX: Munster Experience (2018-2019) > 126 cases

Parameter	Frequency
Mean age (SD)	72 ± 7
Male/Female gender	99/27 (3.6/1)
Symptomatic aneurysm	21%
ASA class	III: 12%; IV: 88%
Tobacco use	History: 17%; Active: 35%
Arterial hypertension	93%
Hyperlipidemia	45%
Coronary artery disease	38%
COPD	23%
Diabetes mellitus	17%

Parameter	Frequency
Carotid artery disease	30%
Peripheral artery disease	37%
Chronic kidney disease	34%
BMI	26 (17-35)
Type I TAAA	1%
Type II TAAA	33%
Type III TAAA	16%
Type IV TAAA	30%
Juxtarenal AAA	19%
PAU	2%

bEVAR and VBX: Munster Experience (2018-2019) > 126 cases

126
Aortic Main Body (AMB)

Overall	BEVAR	F-BEVAR	FEVAR
CMD*	88 (70%)	3	5
T-Branch	38 (30%)		
126	118	3	5
	93.7%	2.3%	4%

502
Bridging stentgrafts

TVs	BSGs	VBX+ Others	VBX Only
CT	114	86	76
SMA	125	89	72
RRA	120	103	90
LRA	123	98	83
Others	20	13	7
Tot	502	389	328

bEVAR and VBX: Munster Experience (2018-2019) > 126 cases

126
Aortic Main Body (AMB)

30-day mortality: 3 (2.3%)
Overall mortality: 8 (6.3%)

Type Ia EL: 1 (0.8%)
Type Ib EL: 3 (2.3%)

502
Bridging stentgrafts

- **Technical success: 498 (99.2%)**
- **BSG Instability: 17 (3.4%)**
- **No stent fracture**

TVs	Type 1c	Stenosis	Occlusion
CT	1	1	/
SMA	2	2	/
RRA	/	3	2 (1 reint)
LRA	5	/	2
Tot	8	5	4
	1.6%	1%	0.8%

Performance of VBX in a fenestrated renal model - Conclusions

No damage of the fabric/stent struts after flaring

Excellent resistance to pull out and shear out forces

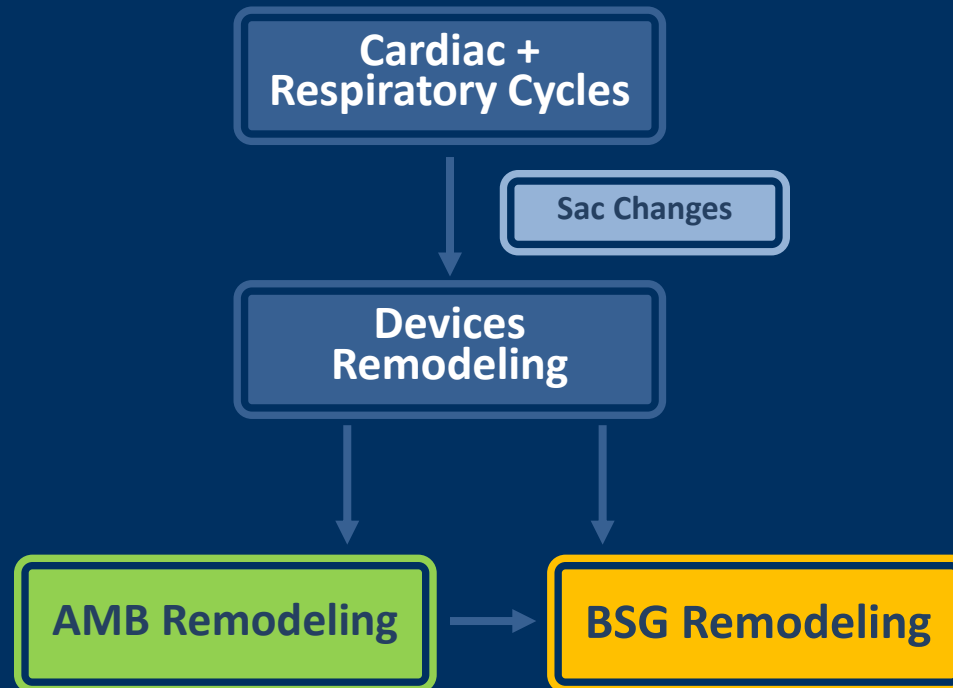
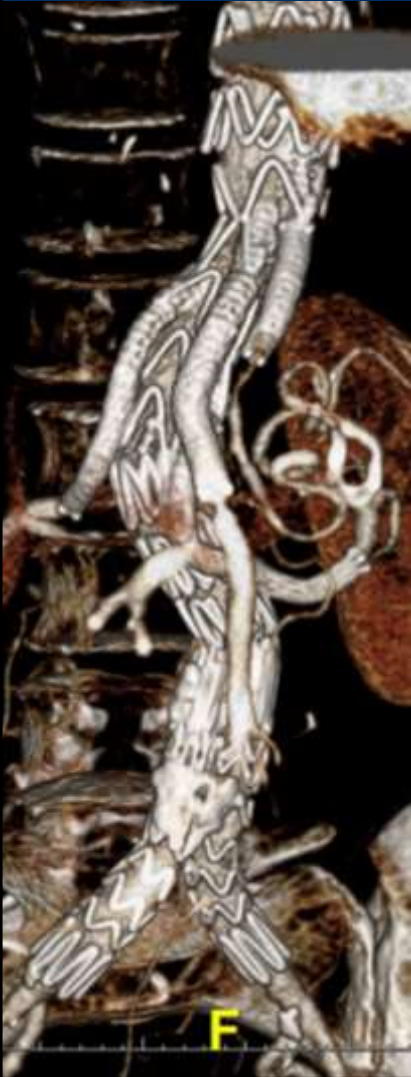
Fatigue-testings are on going to better understand what happens over the time

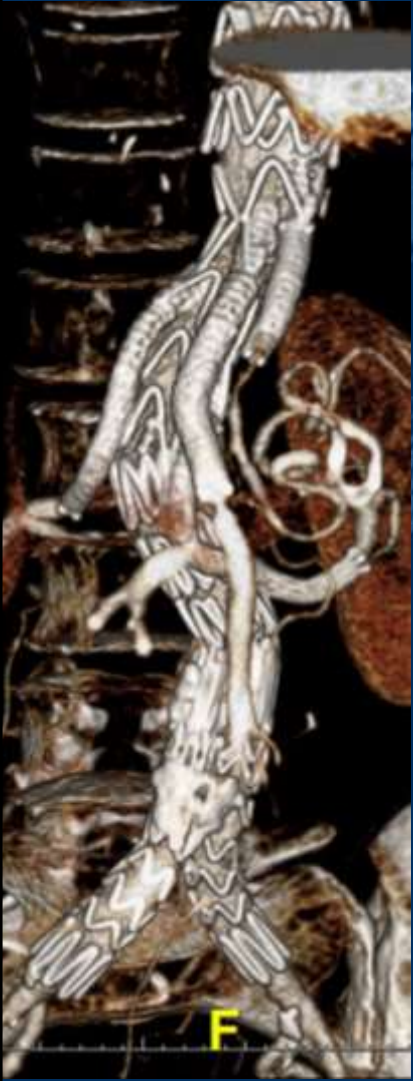
Thank you !



St. Franziskus Hospital Münster

Aortic graft and BSG changes after BEVAR





AMB movements

Cranial-Caudal



Lateral



Anterior-Posterior



Changes

Migration

Columnar Shortening

Scoliosis

Lordosis

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