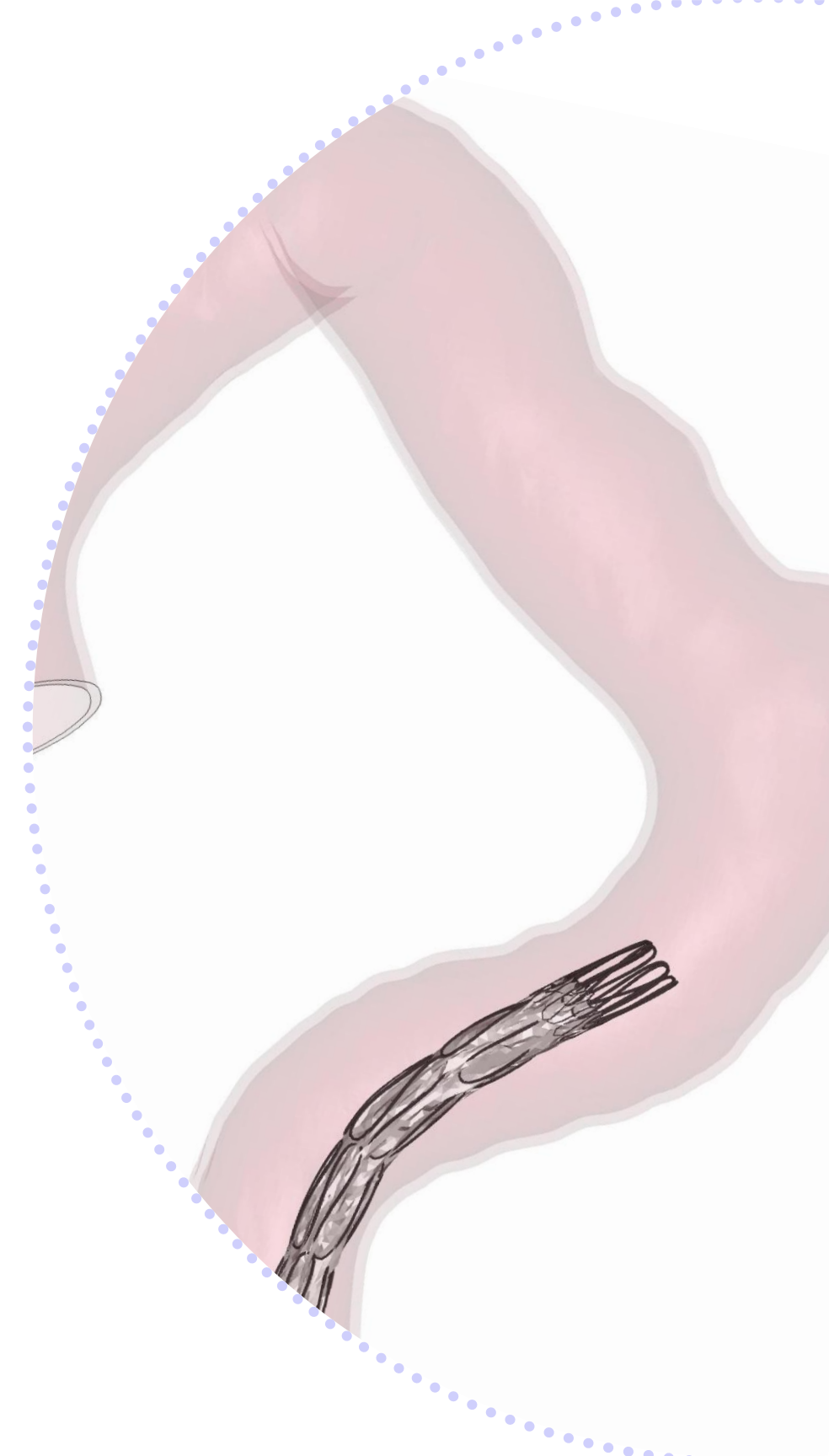


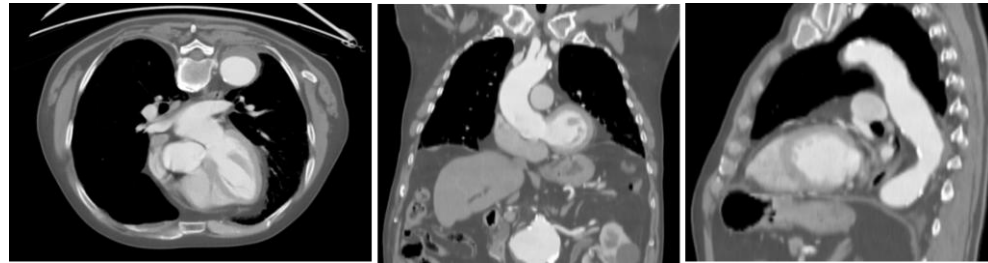
Expert Exchange Digital twins in Thoracic Simulated case analysis

Dr. Kerzmann, CHU de Liège, Liège, Belgium
January the 15th, 2026, Milano, Italy



Patient specifications

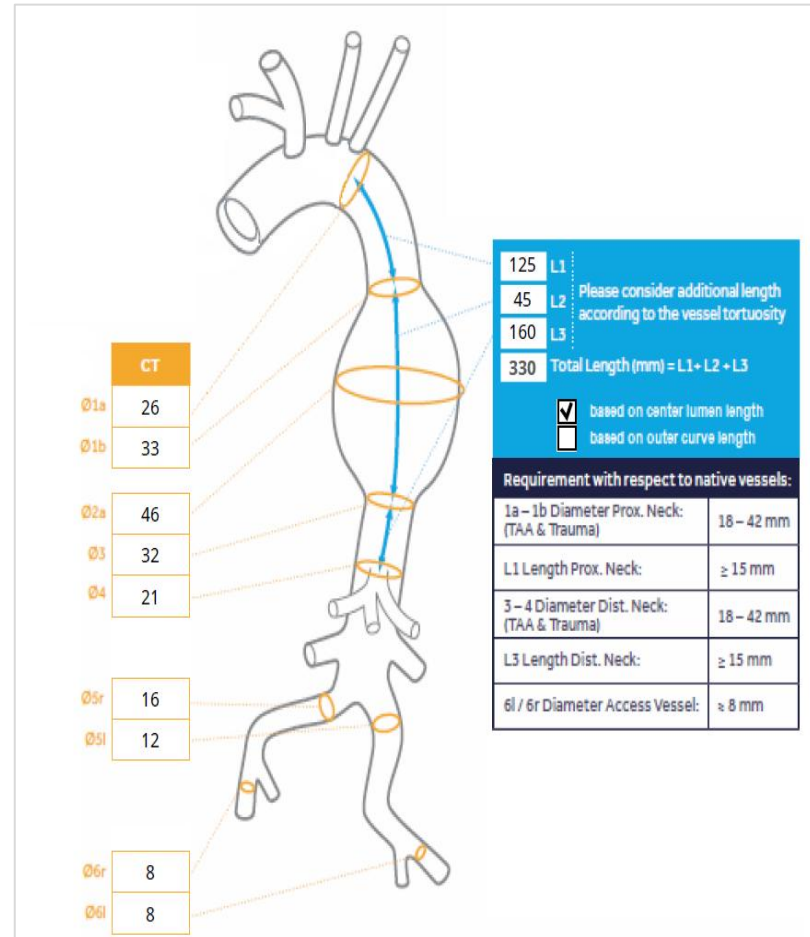
Pre - CT scan



Case details

Hospital	CHU de Liège, Liège, Belgium
Pathology	57 mm saccular TAA
Aortic Arch Type	III
Selected Landing zone	4
Landing Zone Diameter	34 mm

Sizing



3D reconstructed anatomy

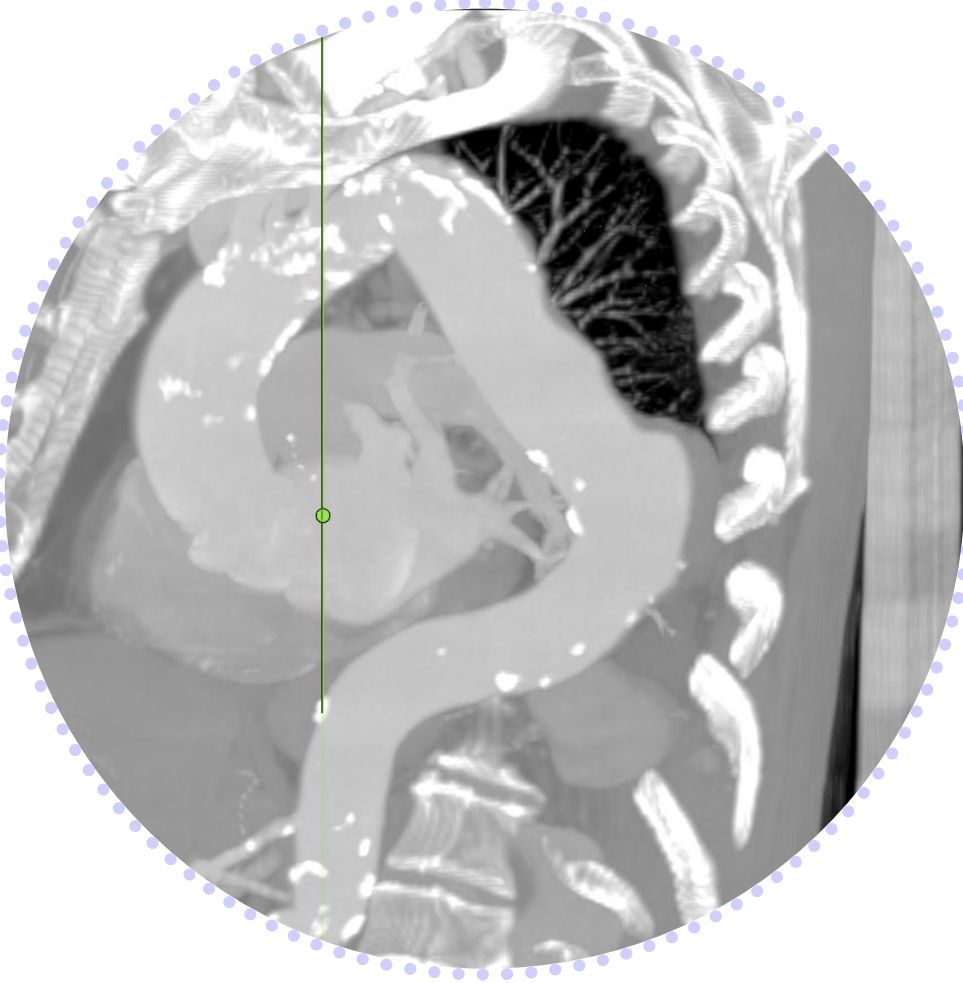


Patient's past history and comorbidities

- 88-year-old man
- Chronic kidney disease (stage 3a)
- Right nephrectomy
- Former smoker (till 1973)
- Dyslipidemia

Pre-operative CTA

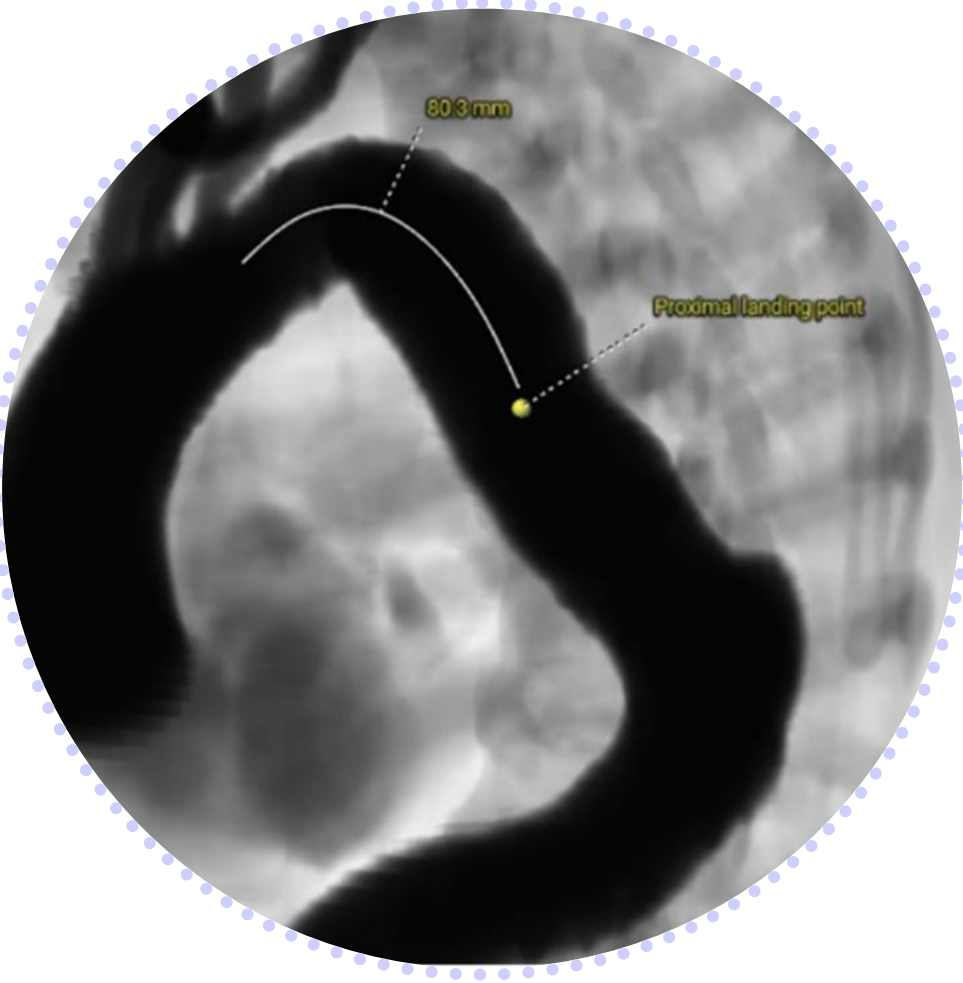
Sagittal View - MIP



3D segmentation

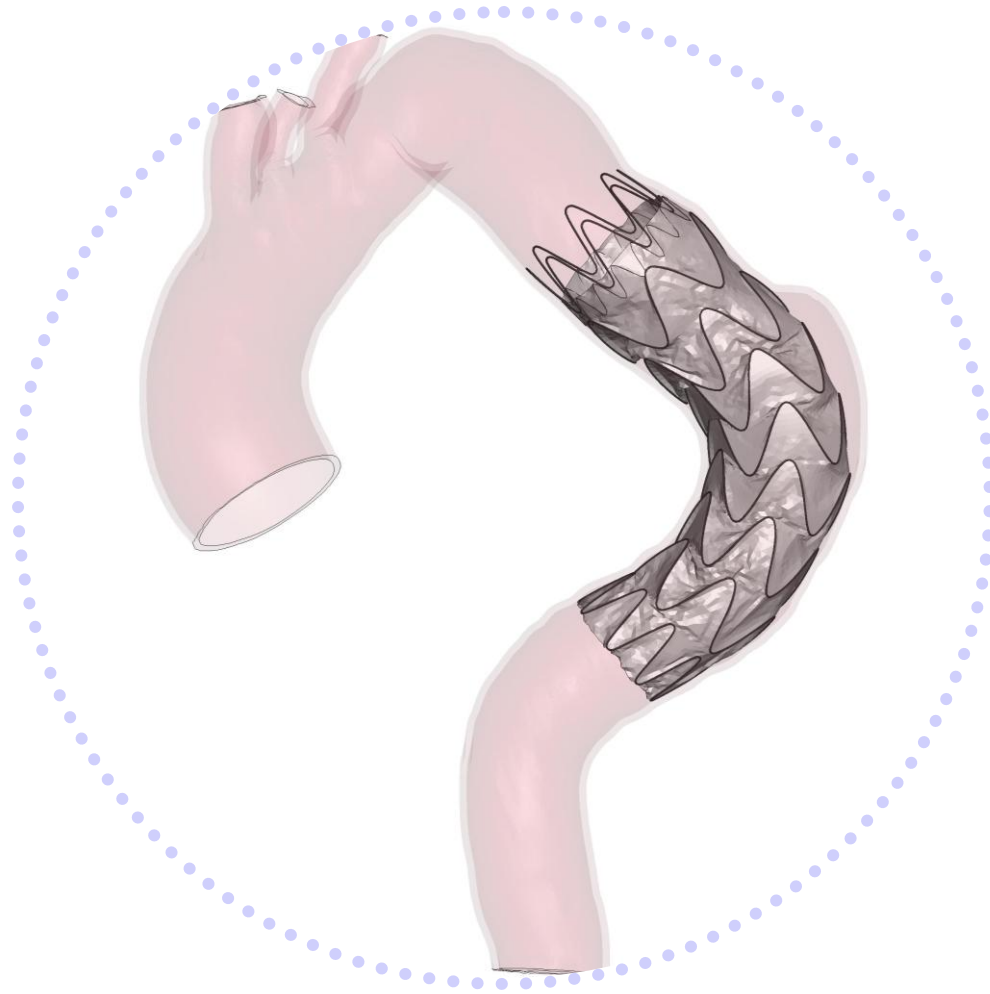


Angio View

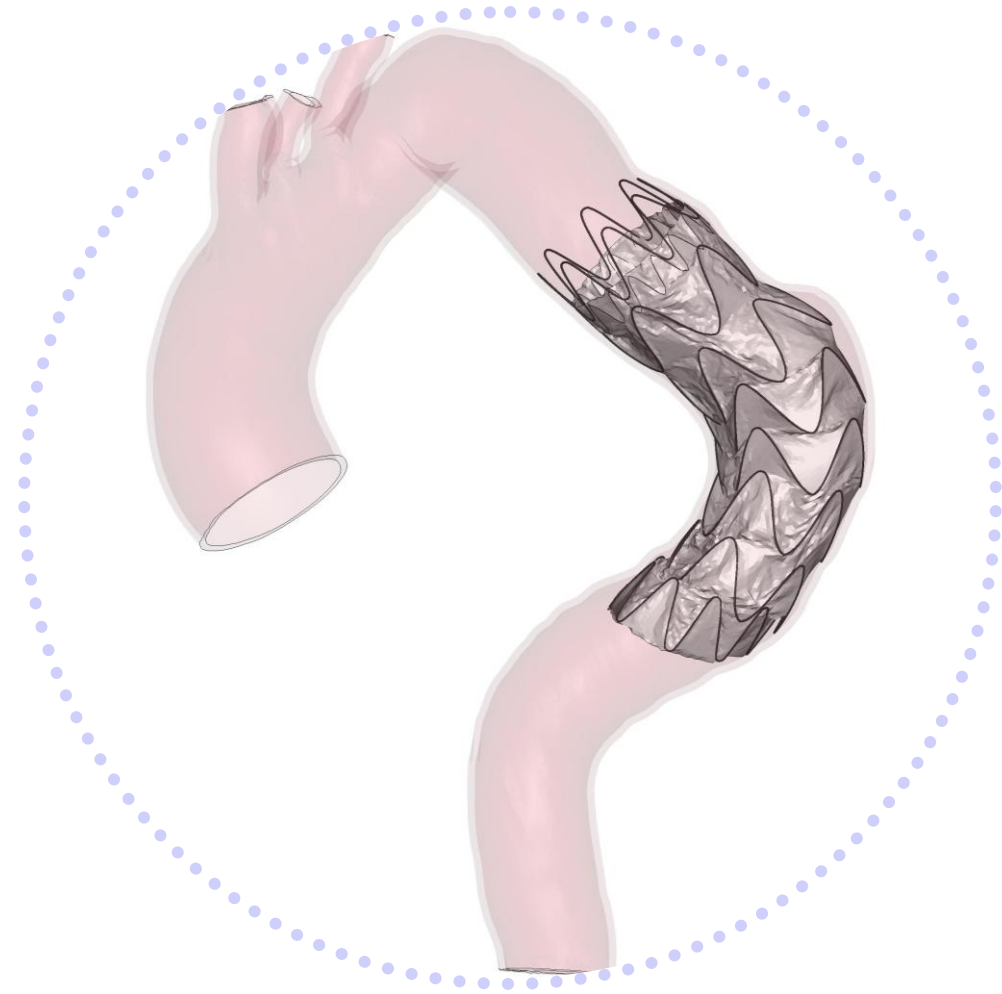


2 Options simulated

Option 1 | 38x34x150

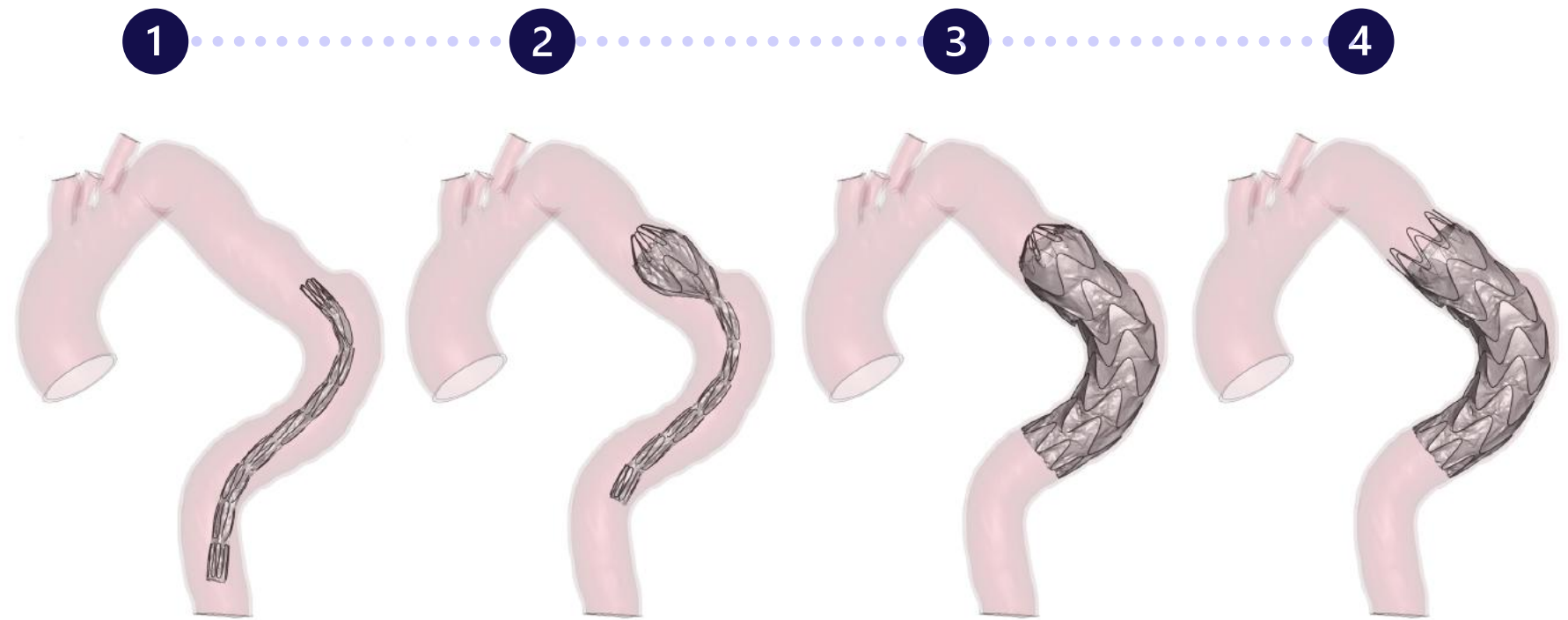
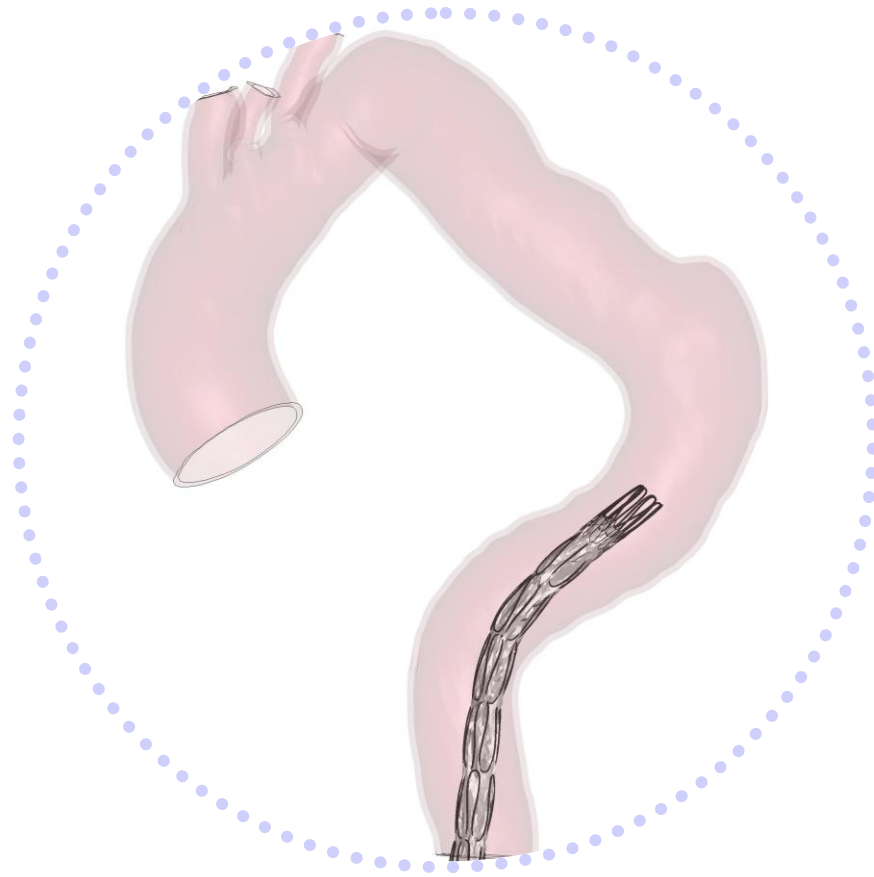


Option 2 | 42x38x150



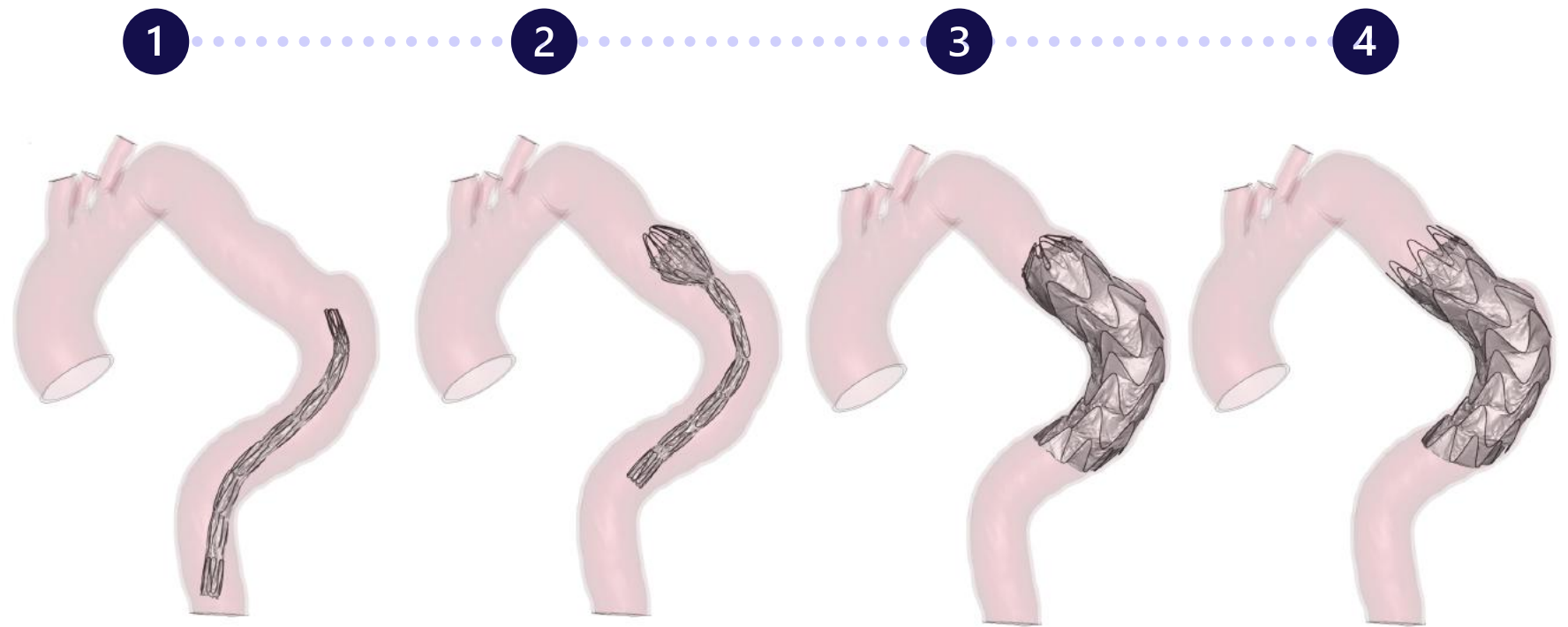
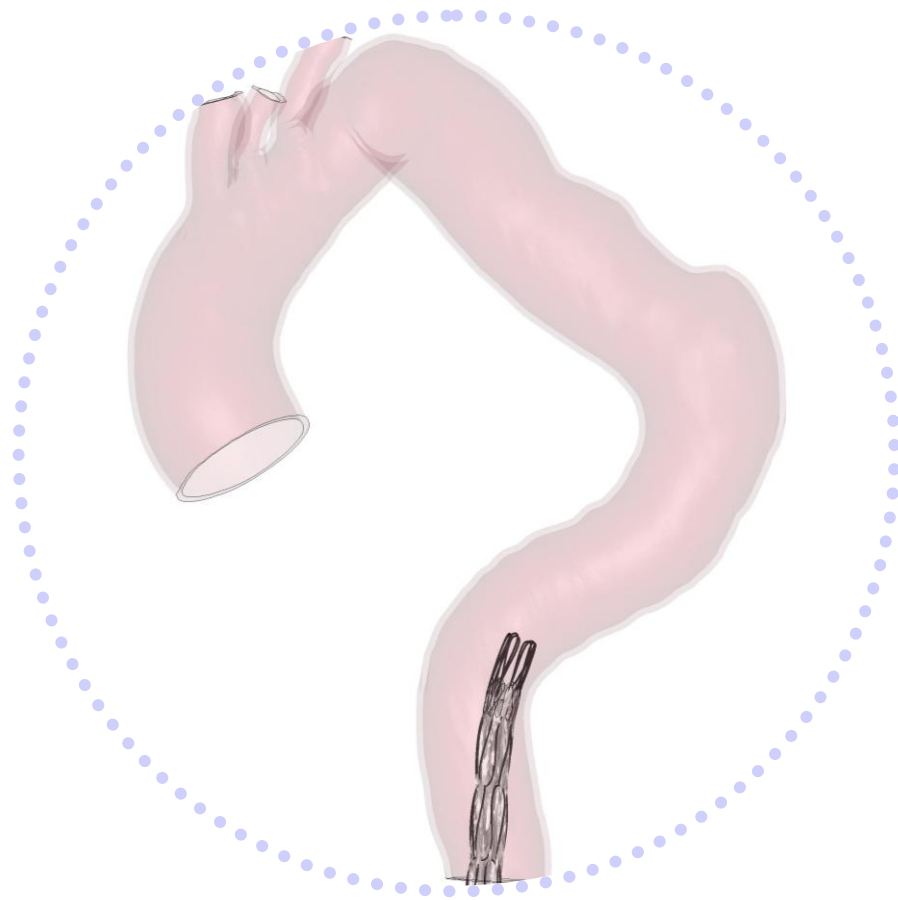
Deployment steps

Option 1 | 38x34x150



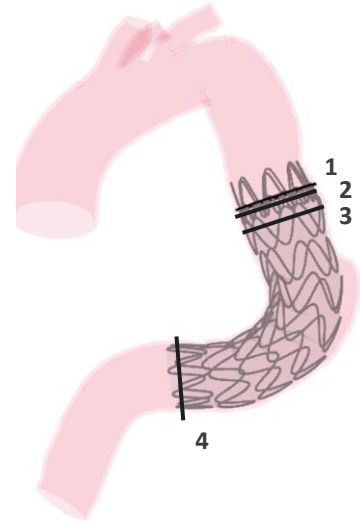
Deployment steps

Option 2 | 42x38x150

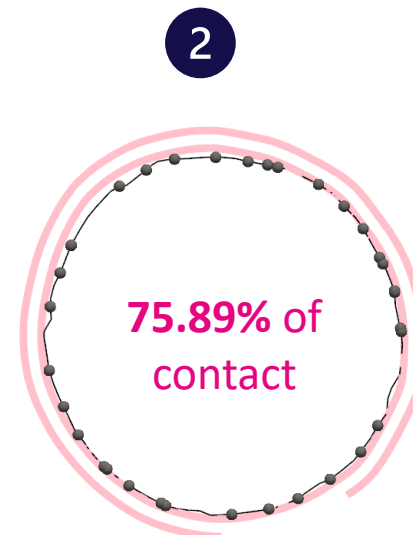


Cross sections

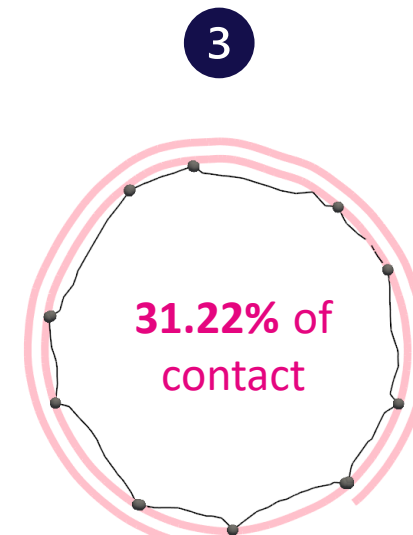
Option 1 | 38x34x150



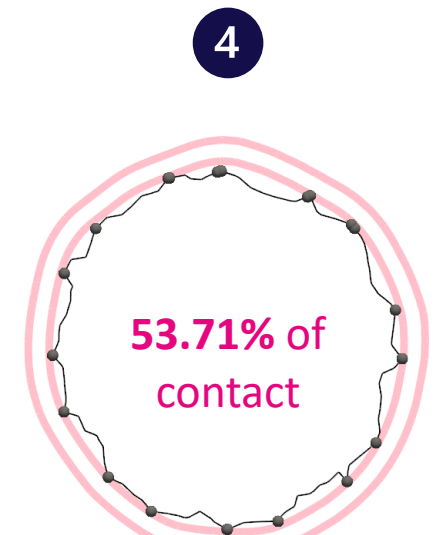
0 mm



4 mm



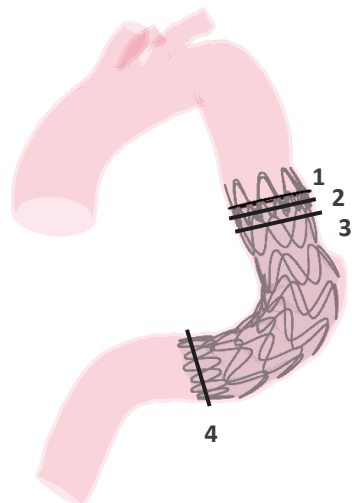
10 mm



141.18 mm

*Distance from the proximal graft edge

Option 2 | 42x38x150



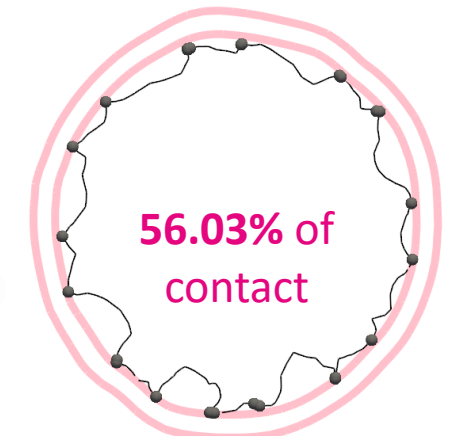
0 mm



4 mm



10 mm



124.43 mm

Distance contour between graft and the aortic wall

Proximal view

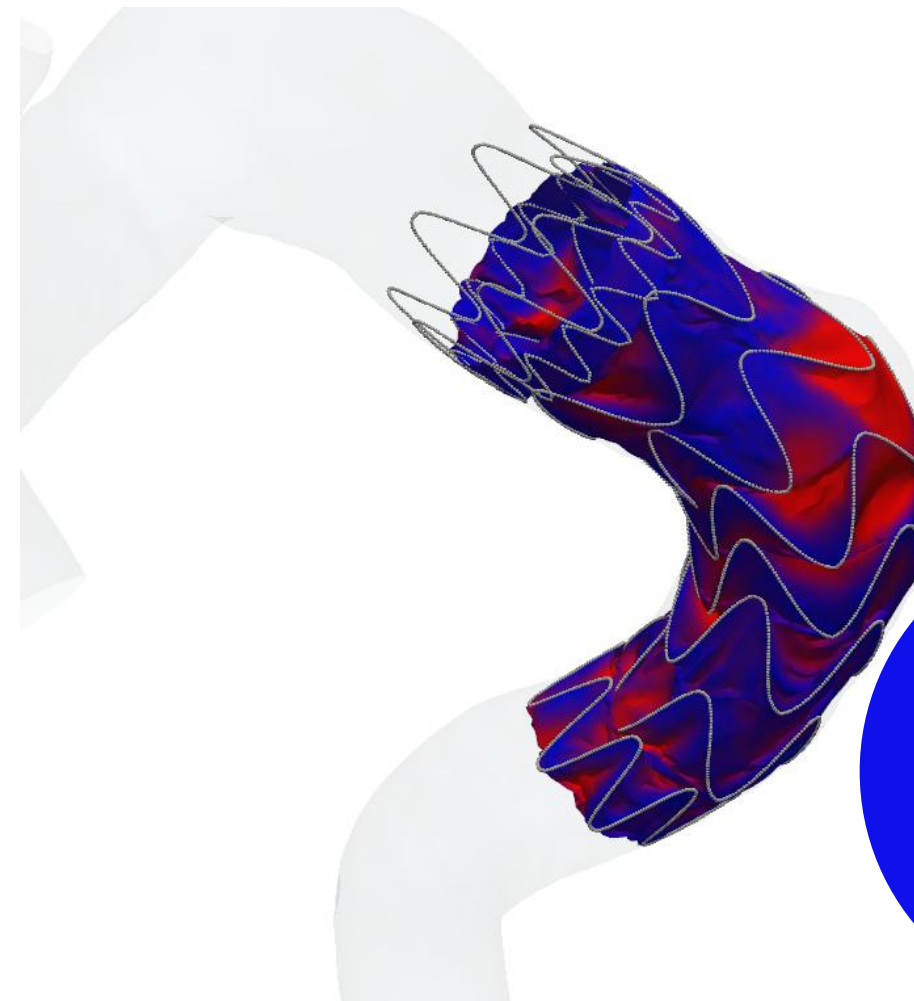
Option 1 | 38x34x150

Option 2 | 42x38x150

[0 mm]



[3 mm]



Blue areas are zones of full contact between the graft and the aorta.

CONTACT

NO CONTACT

Distance contour between graft and the aortic wall

Option 1 | 38x34x150

Option 2 | 42x38x150

Front view

Back view

Front view

Back view



[0 mm]

[3 mm]



CONTACT

NO CONTACT

Distance contour between graft and the aortic wall

Option 1 | 38x34x150

Option 2 | 42x38x150

Top view

Bottom view

Top view

Bottom view

[0 mm]



[3 mm]

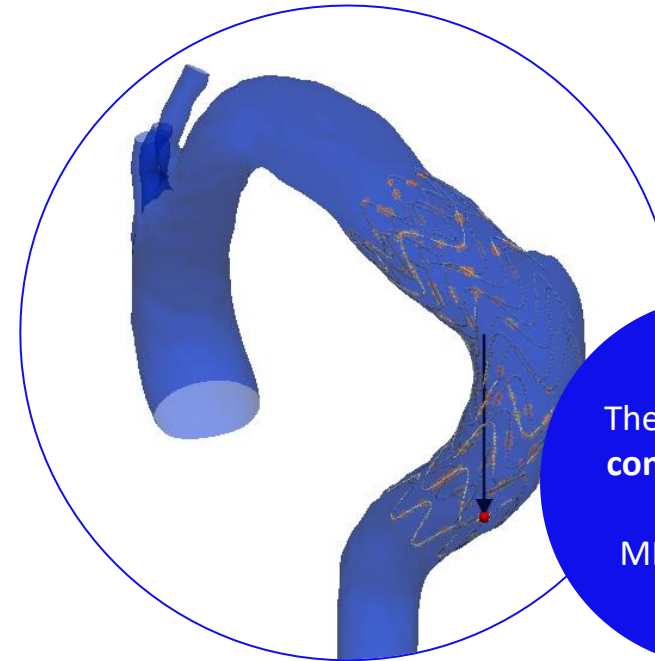
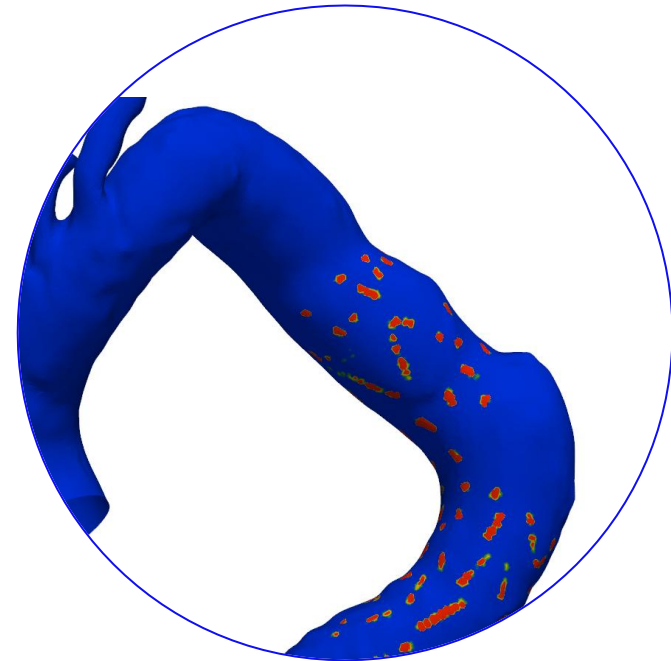


CONTACT

NO CONTACT

Contact pressure contour

Option 1 | 38x34x150

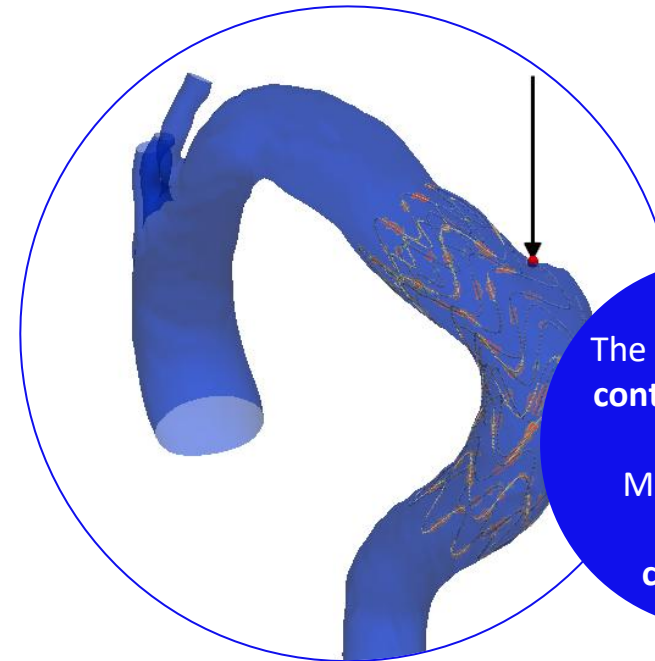
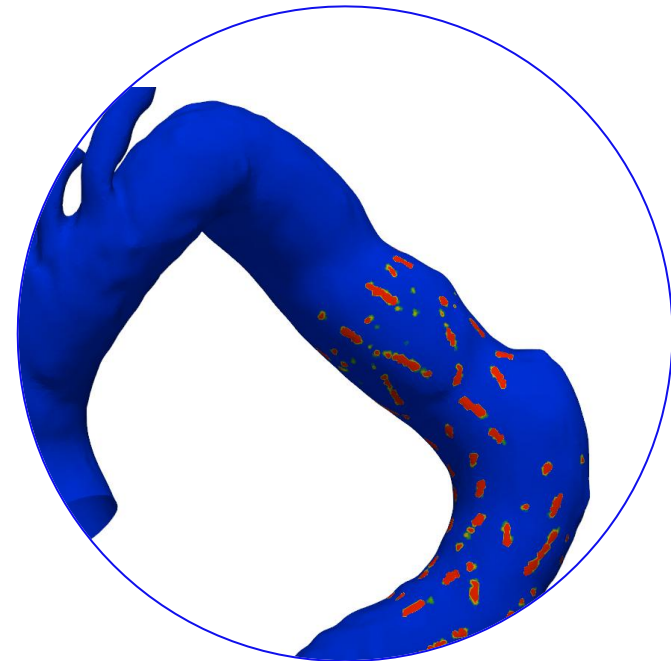


The max value of contact pressure (0.36 MPa) is located distally.

Contact pressure [MPa]



Option 2 | 42x38x150



The max value of contact pressure (0.37 MPa) is in the external curvature.

Pressure exerted by the stent-struts on the aortic wall after deployment.

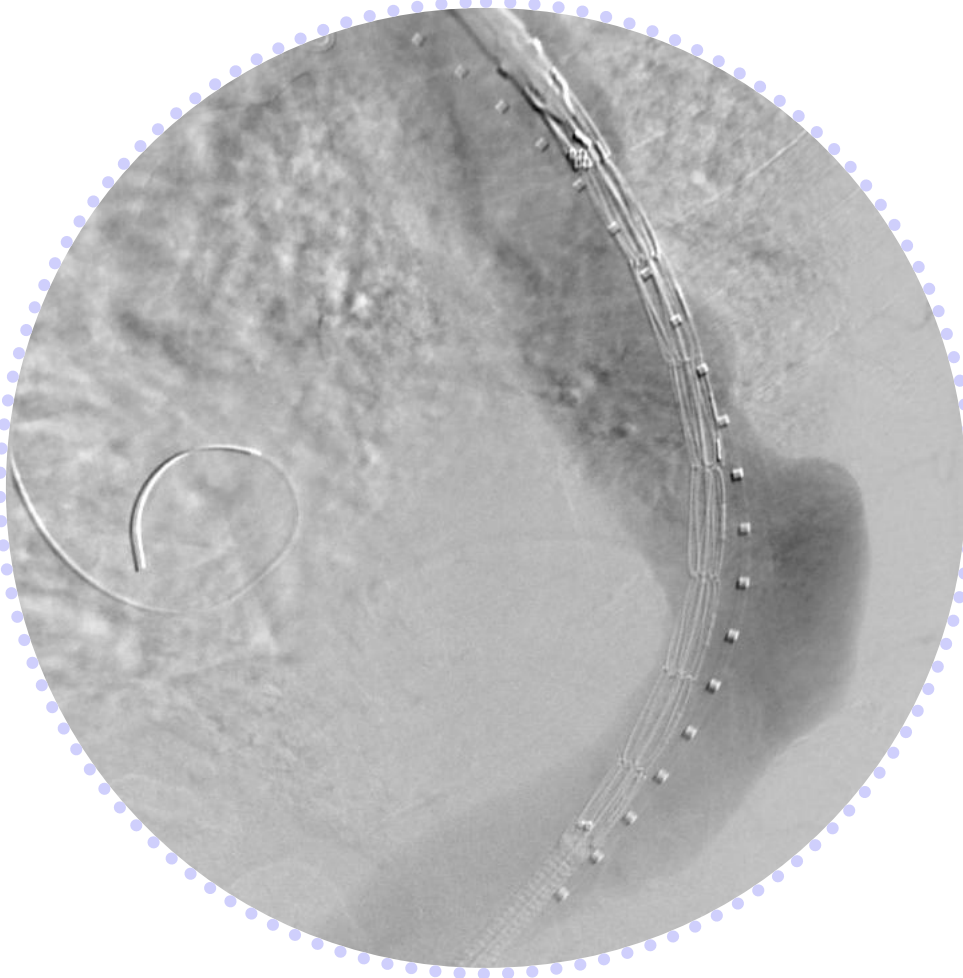
In the **Red areas** the stent struts exert the **greatest pressure**.

Operation's details

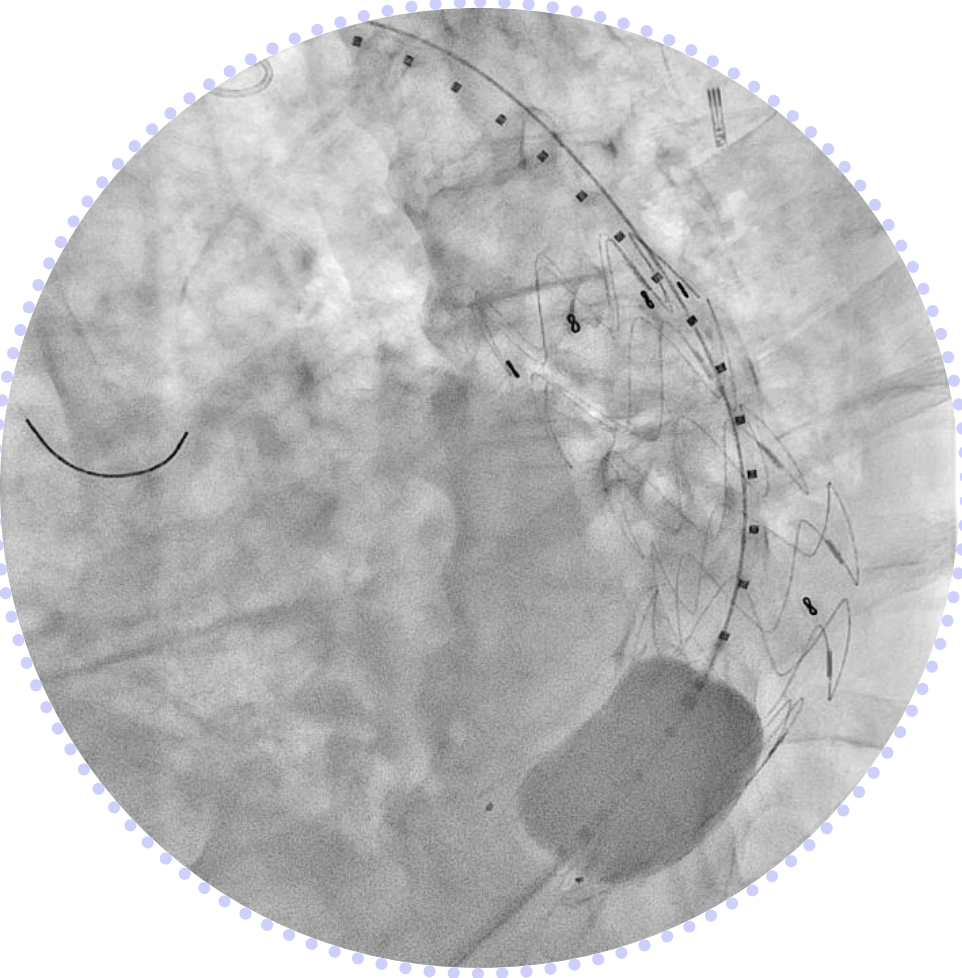
- General anesthesia
- Percutaneous procedure
- Angioplasty of the right iliac arteries with a 9 mm balloon
- 24 Fr Sentrant sheath in the right common femoral artery
- 6 Fr sheath in the left common femoral artery
- Heparine 100 IU/kg

Per-operative CTA

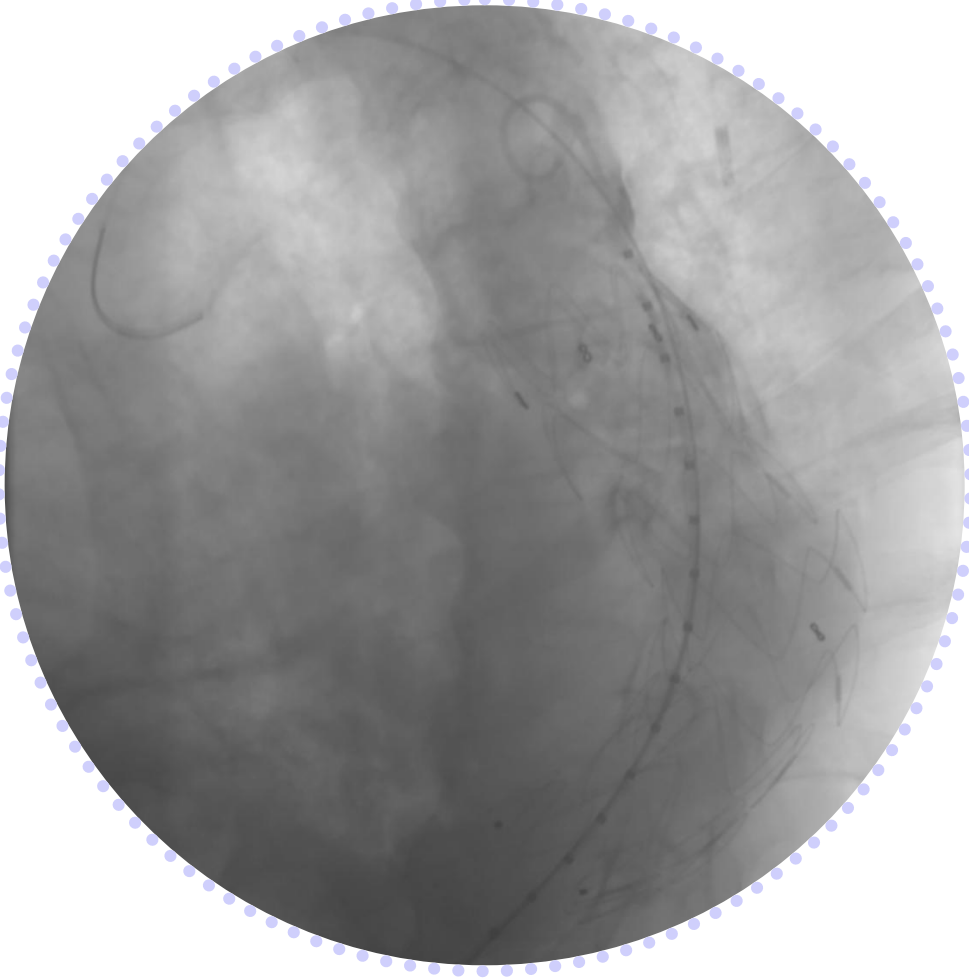
First Angio



Ballooning



Final Angio



Follow-up

- No post-operative complications
- BEVAR procedure – one month later
- Patient died three months after the TEVAR procedure
- The death was not TEVAR related

