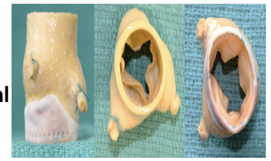
Successful Transcathether Treatment Of A Degenerated Stentless Valve Using An Self-expandable Acurate Neo Heart Valve

Jan Rychter[1], Ali Aidibi[2], Krystian Jakimowicz[2], Roch Pakuła[1], Tomasz Niklewski[2], Michał Hawranek[3], Mariusz Gąsior[3], Michał Zembala[2]

1. Department of Cardiac, Vascular and Endovascular Surgery and Transplantology, Medical University of Silesia in Katowice, Silesian Centre for Heart Diseases, Zabrze, Poland
2. Department of Cardiac Surgery, Heart and Lung Transplantation and Mechanical Circulatory Support, Silesian Centre for Heart Diseases, Zabrze, Poland
3. 3rd Department of Cardiology, Medical University of Silesia in Katowice, Silesian Centre for Heart Diseases, Zabrze, Poland

Introduction of the case

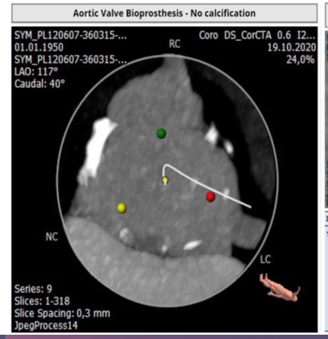
- 84-year-old female
- In 2003 implantation Medtronic Freestyle Full Root 25mm due severe aortic valve stenosis and aortic root aneurysm
- Chronic heart failure NYHA II->III
  PCI DES LAD 09.2020
  Paroxysmal atrial fibrillation
  Chronic kidney disease G3 GFR-40ml
  BMI 25

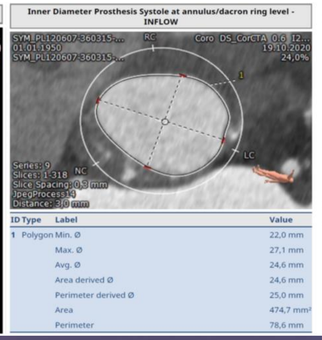


- Echocardiography: EF- 45%
  - severe aortic regurgitation (left leflet tear of Freestyle prosthesis)
  - moderate mitral valve regurgitation,
  - mild tricuspid valve regurgitation
- Euroscore 14.22%

Evaluation of the case

- Computed tomography showed no calcification on leflets of Freestyle prosthesis.
- Perimeter derived annulus was 25mm.





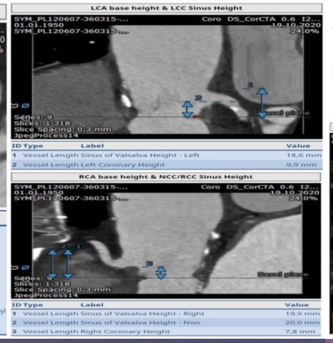
ID	Type	Label	Value
1	Polygon	Min. Ø	22,0 mm
		Max. Ø	27,1 mm
		Avg. Ø	24,6 mm
		Area derived Ø	24,6 mm
		Perimeter derived Ø	25,0 mm
		Area	474,7 mm²
		Perimeter	78,6 mm

Evaluation of the case

- LVOT was 25,4mm.
- Coronary height was 9.9mm for the left coronary artery and 7.8mm for right coronary artery.



ID	Type	Label	Value
1	Polygon	Min. Ø	22,3 mm
		Max. Ø	27,6 mm
		Avg. Ø	25,0 mm
		Area derived Ø	24,9 mm
		Perimeter derived Ø	25,4 mm
		Area	488,6 mm²
		Perimeter	79,7 mm



ID	Type	Label	Value
1	Vessel Length Sinus of Valsalva Height - Left		18,6 mm
2	Vessel Length Left Coronary Height		9,9 mm

ID	Type	Label	Value
1	Vessel Length Sinus of Valsalva Height - Right		19,9 mm
2	Vessel Length Sinus of Valsalva Height - Non		20,0 mm
3	Vessel Length Right Coronary Height		7,8 mm

Evaluation of the case

- Size selection was based on both computed tomography scan and the available information within the Valve-in-Valve Aortic App where sizing and positioning is based on ex vivo simulations and calculations.
- We decide to implant Boston Scientific Acurate Neo size M prosthesis from transfemoral access.
- The operation (October 2021) was performed in sedation and under local anesthesia, with standard hemodynamic monitoring and TEE.

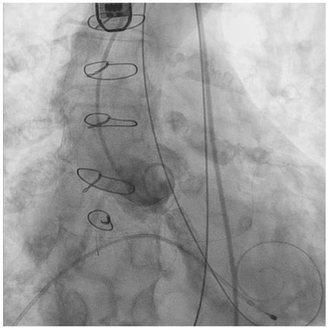




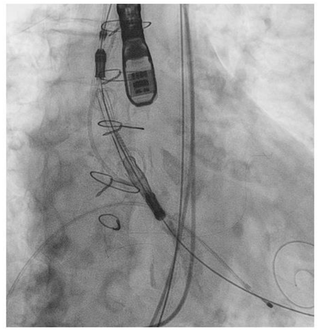
- The right femoral artery was used for valve access, due randomaized clinical trial we choose surgical access.
- The left femoral artery was used for pigtail access, from left femoral vein we implanted endocavitary electrode. We used AngioSeal to close puncture in artery. Due our center policy endocavitary electrode we leave for next 12-24h.

Valve implantation procedure

Step 1. Pigtail positioning and aortography

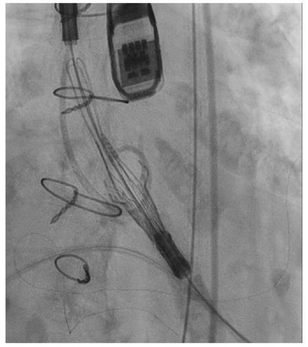


Step 2. Valve positioning

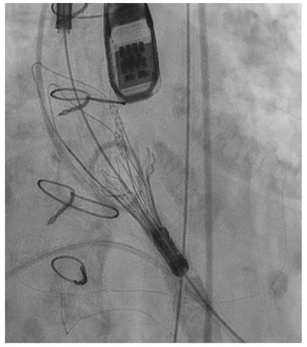


Valve implantation procedure

3. Upper crown deployment

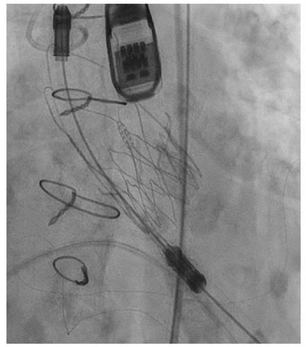


4. Stabilization arch deployment

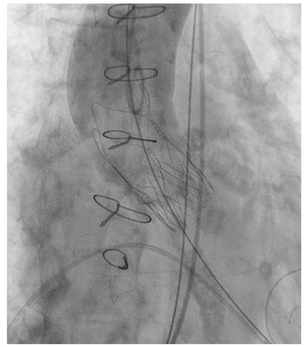


Valve implantation procedure

5. Final valve release



6. No paravalvular leak



Final result

- Post procedural echocardiography revealed good function of Acurate Neo prosthesis with gradient max 15 mmHg, mean 7 mmHg, and no PVL.
- Patient was transferred to the surgical ward for further treatment and rehabilitation.
- There were no vascular complications.
- She didn't require blood transfusions.
- No new conduction disturbances appeared.
- She was discharged home in overall good condition 4 days later.

