

## REFERENCES

- 1. Device landing zone calcification and its impact on residual regurgitation after transcatheter aortic valve implantation with different devices.** Seiffert M, Fujita B, Avanesov M, Lunau C, Schön G, Conradi L, Prashovikj E, Scholtz S, Börgermann J, Scholtz W, Schäfer U, Lund G, Ensminger S, Treede H. – Eur Heart J Cardiovasc Imaging. 2015 Jul 9. pii: jev174. [Epub ahead of print]
- 2. ACURATE TA in a patient with extreme calcifications.** PD Dr. Christoph Huber and the Inselspital Bern TAVI team
- 3. Symetis ACURATE TAVI: Review of the technology, developments and current data with this self-expanding transcatheter heart valve.** Schaefer U, Conradi L, Diemert P, Deuschl F, Schofer N, Seiffert M, Lubos E, Shirmer J, Reichenspurner H, Blankenberg S, and Treede H. – Minerva Cardioangiolog 2015;63:1-2 [Epub ahead of print]



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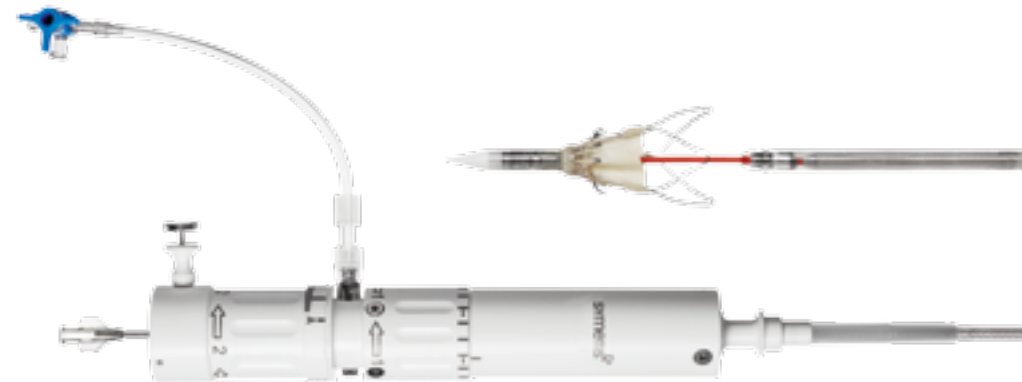
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Patient with severe calcification of the aortic root  
implanted with an ACURATE *neo*™ transfemoral TAVI.

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## TF Case Report



**Deutsches Herzzentrum München**  
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With the courtesy of:  
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## INTRODUCTION

Transcatheter Aortic Valve Implantation (TAVI) is an established therapy option for patients affected by severe aortic valve stenosis at high risk for conventional surgery.

However, calcification of the device landing zone and its extension into the Left Ventricular Outflow Tract (LVOT) is still a major concern due to the high risk of annulus rupture during TAVI as well as its link to paravalvular regurgitation. Self-expanding valves are more favorable in patients with severely calcified annulus as they allow a more progressive expansion and compliant

adaptation to the native annulus by being less sensitive to oversizing and generating less stress on the calcified annulus.

This case presents a patient with massive calcification, successfully treated with the ACURATE *neo*<sup>™</sup>, a self-expanding valve featuring an hourglass shape, which allows for optimal positioning with the waist lodging the calcified leaflets.

## PATIENT DATA MEDICAL HISTORY

- 81 Year-Old Male
  - NYHA Class II
  - BMI: 32.8
  - LVEF: 60%
  - Mean Gradient: 56 mmHg
  - AVA: 0.77 cm<sup>2</sup>
  - EuroSCORE I: 6.21 %
  - EuroSCORE II: 1.36 %
- Severe Calcification of Aortic Root

## CASE PRESENTATION

A 81 year-old male patient with severe aortic stenosis was referred to our institution with functional NYHA class II. Due to the patient age and frailty, TAVI was selected as the treatment of choice. Echocardiography showed a normal left ventricular function, an aortic valve area of 0.77cm<sup>2</sup> and a mean gradient of 56 mmHg, while MSCT revealed an aortic annulus of 20.9mm x 28.4mm, with a perimeter-derived effective diameter of 24.7mm. The iliac-femoral & abdominal arteries allowed for a safe transfemoral TAVI approach.

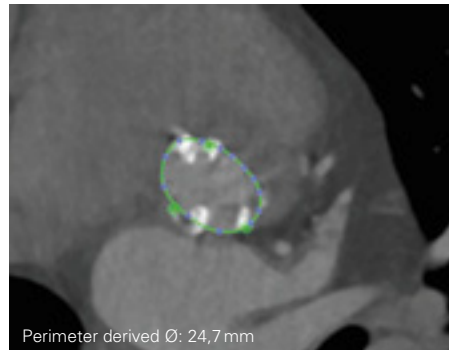


Fig 1: Measurement of the aortic annulus with the CT scan

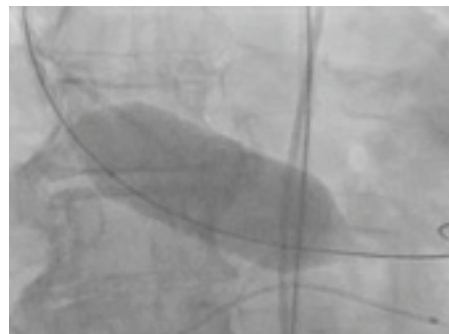


Fig 2: Angiography showing valvuloplasty with a 24mm balloon

## CASE STRATEGY & EXECUTION

The heavy calcification pattern of the native aortic valve was located mostly on the free edges of the leaflets with two extensions into the LVOT (see Fig 3 & 4).

Pre-dilatation with a 24mm valvuloplasty balloon was performed using effective rapid pacing. The ACURATE *neo*<sup>™</sup> size M was positioned perfectly within the native aortic annulus (Fig 5). After post-dilatation with a 24mm valvuloplasty balloon, the result showed only a trace paravalvular leak (Fig 6).

## RESULTS

At discharge, echocardiography showed no relevant aortic regurgitation and a normal left ventricular function. No post-procedural complications occurred.

## KEY TAKE AWAYS

The choice of ACURATE *neo* was crucial for the procedural success in this patient with severe calcification of the aortic root due to its:

- self-expanding deployment design
- unique hourglass shape

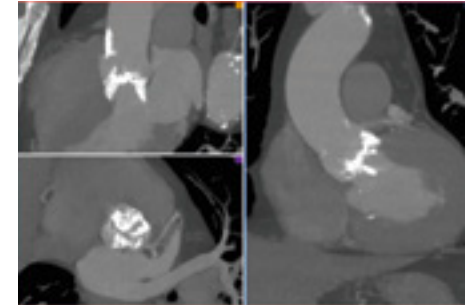


Fig 3: Heavy calcification

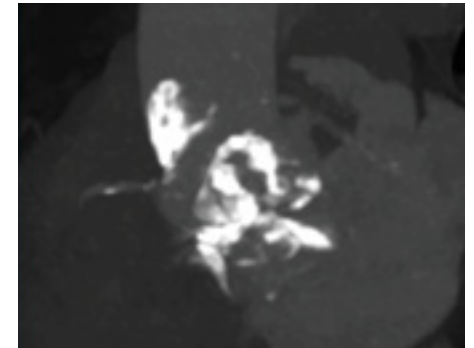


Fig 4: Heavy calcification

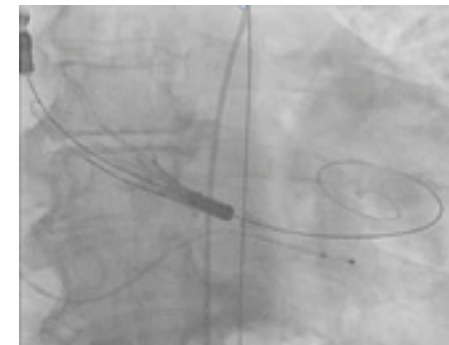


Fig 5: First step of the valve deployment



Fig 6: Final angiography shows only trace of aortic regurgitation