REFERENCES


TF Case Report

ACURATE neo™ transfemoral transcatheter aortic valve implantation in a patient with an elliptical annulus.

Prof. Dr. Christian Hengstenberg – Deutsches Herzzentrum, Munich, Germany

Prof. Dr. Christian Hengstenberg holds the position of associate director and head of the cardiology TAVI program at the German Heart Center, Munich, Germany. His previous professional experience includes the University Hospitals in Marburg and Regensburg. Prof. Hengstenberg is author and co-author of more than 250 scientific publications and he is a valued presenter at international conferences.
INTRODUCTION
Severe aortic valve stenosis patients at high risk for conventional surgery are increasingly treated by Transcatheter Aortic Valve Implantation (TAVI).

Patient anatomy is key to determine the most appropriate TAVI bioprosthesis to be implanted. The relevance of a non-circular geometry of the aortic annulus for the long-term outcome of TAVI is still unknown.

However, comparison of balloon-expandable and self-expanding heart valves have shown that balloon expandable valves are more likely to demonstrate a circular shape after implantation while self-expanding valves conform more to the natural anatomy of the annulus.

This case report demonstrates the benefits of the self-expanding technology and the great performance of the Symetis ACURATE neo™ in a patient with an elliptical annulus.

CASE STRATEGY & EXECUTION
Given the diameter and shape of the aortic annulus of the patient, it was decided to use the self-expanding ACURATE neo™ bioprosthesis in size S.

After pre-dilatation with a 20 mm valvuloplasty balloon, the ACURATE neo was positioned (Fig. 3) and released with its usual 2 steps/top-down deployment.

First, the upper crown and the stabilization arches opened in the aorta (Fig. 4), to avoid the obstruction of anterograde blood flow during positioning.

Then, full release with self-deployment of the lower crown in the left ventricle followed, thereby protecting from uncontrolled device movements and/or embolization (Fig. 5).

RESULTS
Final angiography confirmed perfect position of the valve with no trace of paravalvular leak (grade 0), after a post-dilation with a 20mm balloon (Fig. 6).

KEY TAKE AWAYS
The implantation of the Symetis ACURATE neo bioprosthesis in this patient with an elliptical annulus was successful due to its ease of use and self-expanding deployment design. Unlike other self-expanding devices, the “top-down” release concept of ACURATE neo, from the aortic side rather than from the LVOT, with subsequent deployment of the sub-annular portion:

- provides a significant improvement in stability during valve positioning
- minimizes hemodynamic compromise during deployment