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**Dr. Won-Keun Kim –
Kerckhoff Heart Center, Bad Nauheim, Germany**

Dr. Won-Keun Kim holds the position of staff interventional cardiologist of the TAVI program at the Kerckhoff heart center, Bad Nauheim, Germany. Dr Kim was graduated in 1999 from the University of Frankfurt, Germany and has completed numerous residencies and fellowships. He is author and co-author of more than 50 scientific publications and has delivered many lectures at international conferences.

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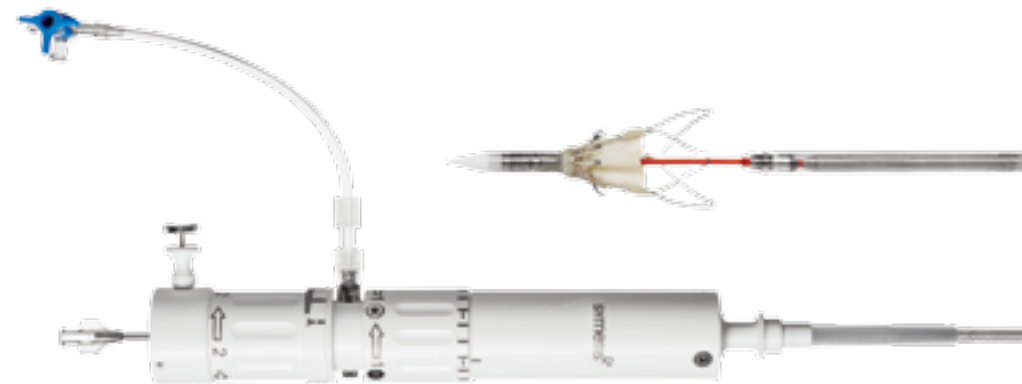
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ACURATE neo™ transfemoral transcatheter aortic valve
implantation in a patient with horizontal aortic root.

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TF Case Report



With the courtesy of:
Dr. Won-Keun Kim – Kerckhoff Heart Center, Bad Nauheim, Germany

INTRODUCTION

During the recent years, Transcatheter Aortic Valve Implantation (TAVI) has emerged as a viable treatment option for patients affected by severe aortic valve stenosis at high risk for conventional surgery. The transfemoral (TF) access is nowadays the most commonly used route in TAVI procedures because of its minimally invasive access and favorable clinical outcomes. However, in the case of an unfavorable anatomical configuration of the aortic root and ascending aorta, TF approach may prove to be technically challenging. If the angulation between the plane of the annulus and a horizontal reference line exceeds 30

PATIENT DATA MEDICAL HISTORY

- 89 Year-Old Male
- Nyha Class II
- BMI: 30
- Lvef: 65 %
- Mean Gradient: 61 mmHg
- Ava: 0.7 cm²
- Log. Euroscore: 10.04 %
- STS: 4.3 %
- Prior Syncope
- CAD with 2 Vessel Disease
- Horizontal Aortic Root

CASE PRESENTATION

This 89 year-old male patient was admitted for the treatment of severe aortic stenosis with functional NYHA class II and prior syncope. Due to the patient age and frailty, TAVI was selected as the treatment of choice. Medical history includes coronary artery disease (CAD) and peripheral vessel disease. Echocardiography showed a normal left ventricular function, an aortic valve area of 0.7cm² and a mean gradient of 61 mmHg, while MSCT revealed an aortic annulus of 23.5mm x 28.4mm, with a perimeter-derived effective diameter of 26.0mm (Fig. 1). The iliac-femoral & abdominal arteries allowed for a safe transfemoral TAVI approach.

degrees, it is suggestive of a horizontal aorta or vertical annulus plane. In this subset of patients, there can be difficulties positioning the bioprosthesis correctly within the patients native anatomy.

The self-alignment technology of the ACURATE *neo*[™] valve facilitates correct anatomical positioning and alignment¹. The ACURATE *neo* has a unique design, featuring stabilization arches and an aortic to ventricular deployment. The following case report demonstrates the ease of use of the ACURATE *neo* valve even in the presence of a challenging anatomical situation.

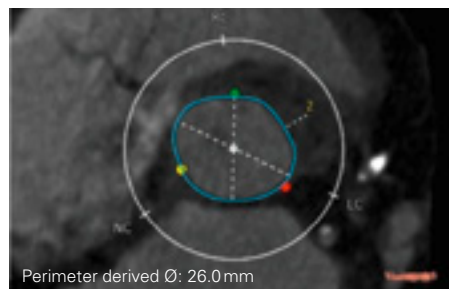


Fig 1: Measurement of the aortic annulus with the CT scan

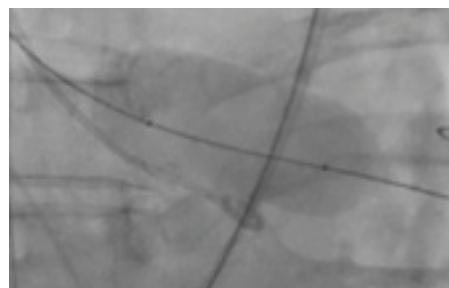


Fig 2: Angiography showing a 25mm valvuloplasty balloon and an horizontal aortic root.

CASE STRATEGY & EXECUTION

Due to the horizontal anatomical configuration of the aortic root and ascending aorta (Fig 2), the choice of a TAVI bioprosthesis with high stability and ease of deployment was favorable. The calcification pattern of the native aortic valve was eccentric, with moderate calcification concentrated mostly on the free edges of the leaflets (see Fig 3 & 4).

A pre-dilatation with a 25mm valvuloplasty balloon was performed using effective rapid pacing. To ensure stability, the delivery system followed the outer curvature of the aortic arch and ascending aorta. The ACURATE *neo*[™] size L was positioned perfectly within the native aortic annulus with only trace paravalvular leak (Fig 6).

RESULTS

At discharge, echocardiography showed no relevant aortic regurgitation, a mean gradient of 12 mmHg and a normal left ventricular function. No post-procedural complications occurred.

KEY TAKE AWAYS

The choice of ACURATE *neo* was crucial for procedural success in this patient with a horizontal aortic root

- Ease of use with the Symetis transfemoral TAVI system
- Stable and reliable self-alignment of the ACURATE *neo*, thanks to its unique stabilization arches & top-down deployment technology



Fig 3 & 4: Moderate calcification

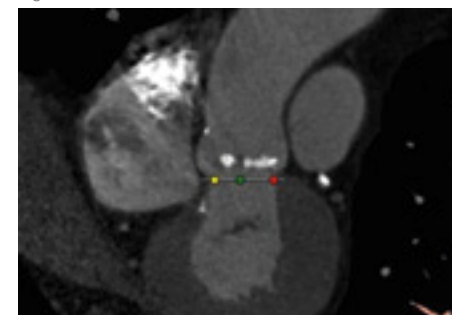


Fig 5: The Stabilization arches hinge the ACURATE *neo* in an anatomically correct position by touching the aortic wall

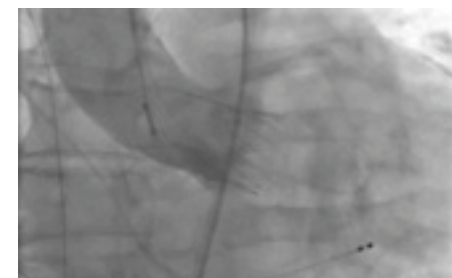


Fig 6: Complete and successful top-down deployment