

## **How To Use 3D Imaging To Decrease Complications of TAVI with the Edwards “Sapien” Balloon Expandable Aortic Valve**

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One of the most frequent not solved complications at TF-, and TA-TAVI with the balloon expandable Edwards “Sapien” Valve is the paravalvular leakage causing aortic valve regurgitation. It can cause, if relevant, aortic valve malposition, migration during the implantation and by the time serious left or right heart failure and even death.

The reason of the leakage is mostly the different stiffness, morphology, and the size of the aortic valve annulus, and the leaflet-plaques and the different grad of resistance to the balloon and to the stented valve during the valve insertion.

We want to demonstrate here by our precisely and detailed valvular and subvalvular TEE and multi-sliced CT measurement and methods for effective positioning, how to avoid valve embolisation, relevant paravalvular aortic regurgitation and valve oversizing and malpositioning. We operated transapical successfully in the last 2 years 81 patients /EUROSCORE: 30,7 +/-12,7; STS Score . 15,4 +/- 7,8 /.

By these method we reduced significantly our perioperative morbidity and mortality:

Coronary Occlusion : 0,0 %

AV Annulus Rupture : 0,0 %

Permanent Arrhythmia : 0,0 %

AV Block : 0,0 %

Postop. Pacemaker : 0,0 %

Periop. Heart Insuff. : 0,0%

AR Grad I. : 3,6 %

AR-Grad II. : 9,6%

AR-GRAD III. : 0,0 %

Perioperative Mortality: in 3days : 3.6 % (81 Patients)

30 days : 9,6 % (81 Patients)

1 Y. Mortality:14,8 % (81 Patients)

Aortic valve regurgitation after TAVI is still an important issue that must be solved. By our precise annulus, leaflet and subvalvular detailed anatomical measurements and slightly different, deeper positioning and the reduced sizing of the valve, we could partly compensate the protective isolating function of the missing “Outer-coat” of these balloon expandable stented valve and reach a reasonable survival rate.