

Artis zee - Study Protocol

# Transcatheter Aortic Valve Implantation

Structural Heart Disease

## Supported by

- *syngo* DynaCT Cardiac
- *syngo* iPilot
- *syngo* InSpace3D
- *syngo* Aortic Valve Guide

## Courtesy of

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## System & Software

Artis zee with 30 x 40 FD  
*syngo* X Workplace

## Case Description

### Patient History

81-year-old female patient with high grade aortic stenosis and increased operative risk.

### Diagnosis

The patient suffers from aortic valve stenosis, pulmonary hypertension and respiratory dysfunction. In addition she was affected by arterial hypertension, chronic atrial fibrillation and diabetes mellitus.

### Treatment

The procedure was performed under general anesthesia to ensure stable hemodynamics and prevent patient movement during valve implantation.

*syngo* DynaCT Cardiac images were acquired during rapid pacing.

## Tips and Tricks

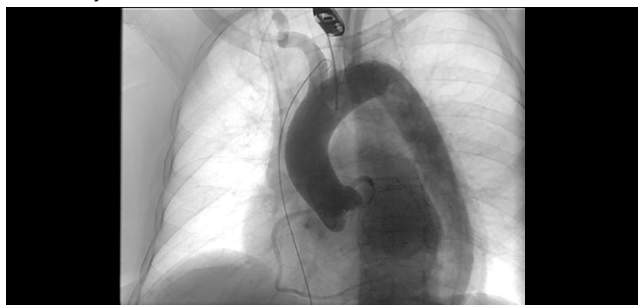
- Remove objects with huge X-ray attenuation from field of view: TEE, surgical tool, spreader, cables, etc.
- Use breathhold
- Arms can be kept in normal position at the sides of the body
- Choose rapid pacing
- Select 1 second scan delay time
- It is not required to place the aortic valve exactly in the iso-center. Therefore: Adjust field-of-view by table movement such that direct radiation onto the detector is almost avoided.

“The *syngo* Aortic Valve Guide facilitates transcatheter valve positioning and deployment through exact C-arm adjustment orthogonally to the aortic valve plane.”

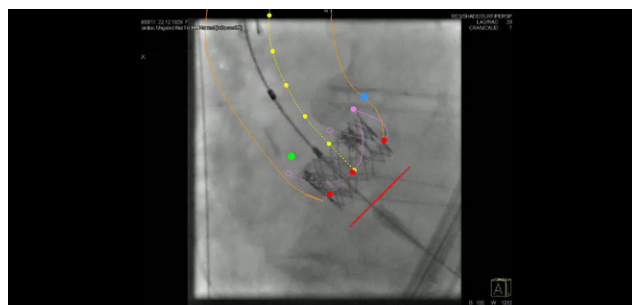
## Transcatheter Aortic Valve Implantation

Acquisition Protocol	5sDCT Card
Number of Projections:	248
System Dose:	0.36 $\mu$ Gy/f
Increment in Degrees:	0.8 f/s
Injection Protocol	
Catheter Position:	Aortic root 5F or 6F pigtail with side holes
Contrast Medium (CM):	350 mg Iodine/ml
Test Bolus:	w/o
Dilution:	25 %
Injection Volume:	75 ml (20 ml CM/ 55 ml Saline)
Injection Rate:	15 ml/s
X-ray Delay:	1 s
Duration of Injection:	5 s
Power Injector Used:	Yes

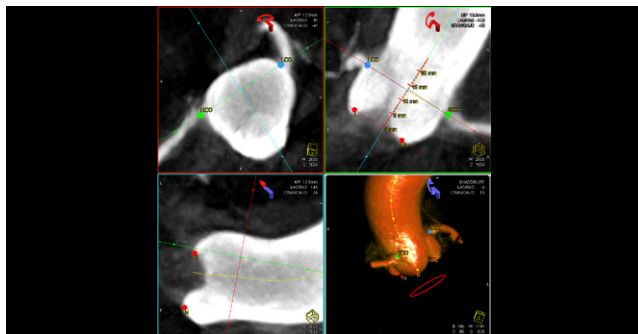
Reconstruction	
VOI Size:	Full
Slice Matrix:	512 x 512
Kernel Type:	HU
Image Characteristics:	Normal
Reconstruction Mode:	Nat Fill
Viewing Preset:	Golden
Secondary Recon	No



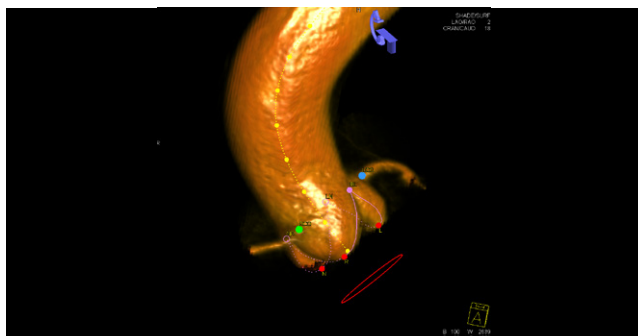
AP projection from rotational angiography.



syngo iPilot functionality with syngo Aortic Valve Guide.



syngo InSpace reconstruction of the aortic root with syngo Aortic Valve Guide software.



Automated detection of anatomical landmarks, lowest cusps points and perpendicular view supported by syngo Aortic Valve Guide.

The statements by Siemens' customers presented here are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.

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