

The background of the slide is a photograph of a large conference hall. In the foreground, the backs of many audience members' heads are visible as they sit in rows of chairs. In the background, a stage is lit up with blue and white lights. Several large video screens are positioned across the stage, displaying the TCT logo and other information. The ceiling of the hall is high and features a complex network of metal trusses and stage lighting equipment.

TAVI Through the Curve:

Managing Graft Kinking and Arch Tortuosity

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Disclosure of Relevant Financial Relationships

Within the prior 24 months, I have had a financial relationship with a company producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients:

Nature of Financial Relationship

Grant/Research Support

Grant/Research Support

Grant/Research Support

Consultant Fees/Honoraria

Ineligible Company

Abbott

Edwards Lifesciences

Boston Scientific

Jenscare Scientific

Clinical History

85y, male, dyspnea, NYHA IV

Past History

- Aortic stenosis, AVA=0.5 cm², Gradient=35mmHg, LVEF=67%
- Type-A aortic dissection, **aortic ascending + hemi-arch replacement**, 2013
- Atrial fibrillation, 2024
- Pacemaker implantation, 2018
- **COPD**, GOLD stage 2-3
- Pulmonary segment embolization

Medication

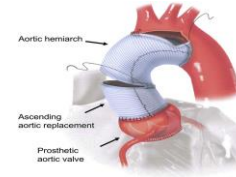
Bilol, 2.5 mg, 1-0-1-0

Eliquis, 2.5 mg, 1-0-1-0

Magnesiocard, 5 mmol, 1-0-0-0

Torasemid, 20 mg, 1-1/2-0-0

2013

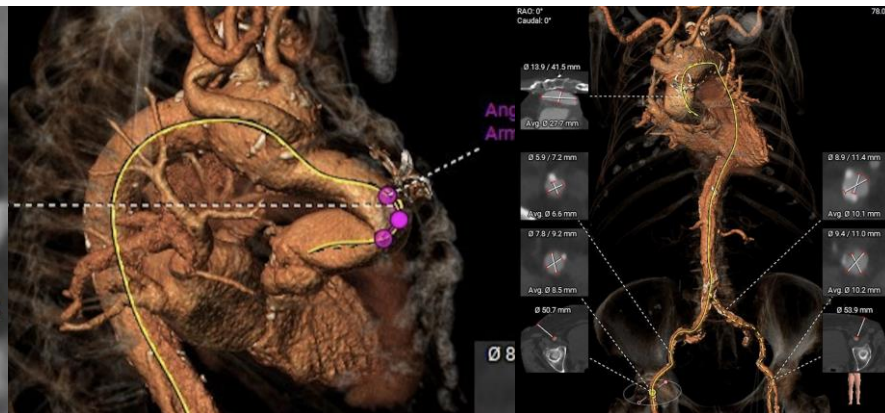
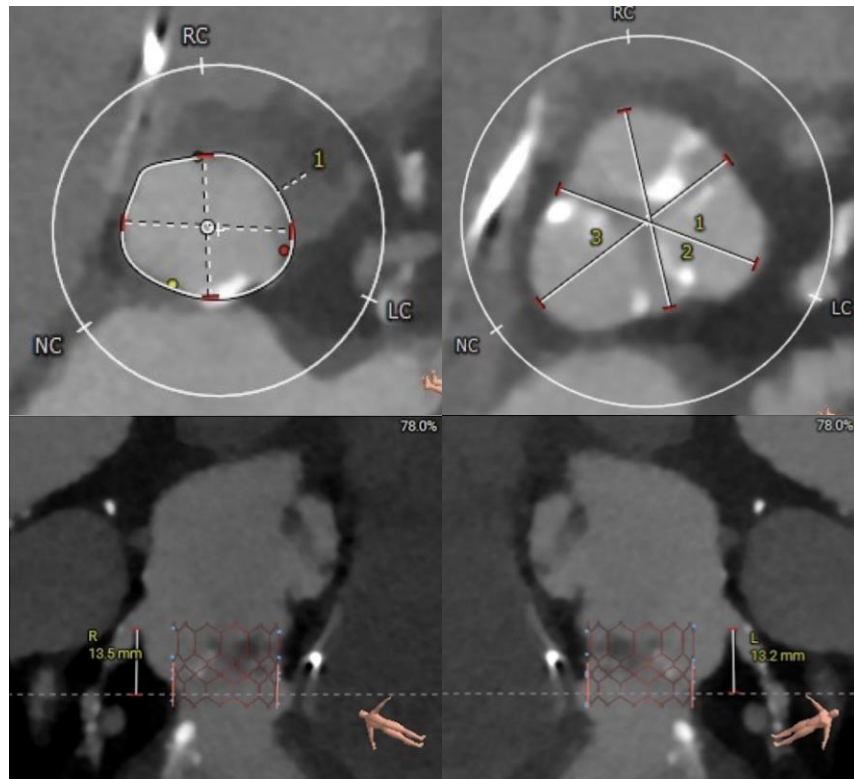


Aortic ascending + hemi-arch replacement

2025



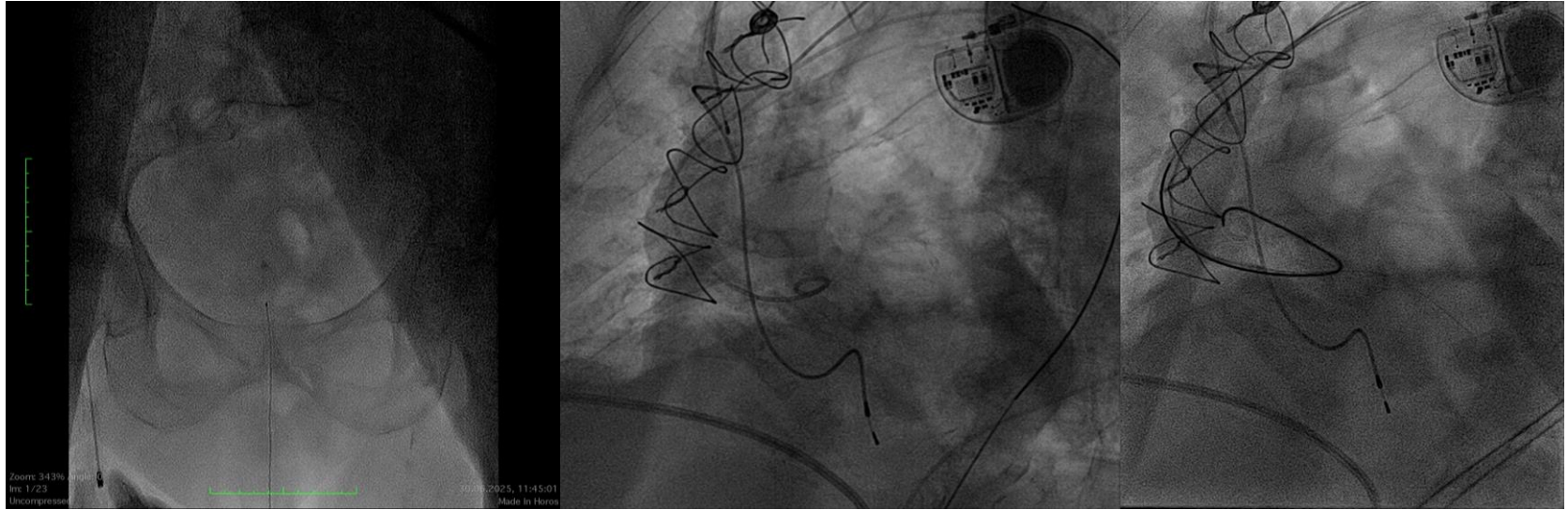
Pre-Procudural Imaging Analysis



Annulus area = 436 mm^2
Annulus diameter = 23.6 mm

SAPIEN 23 mm
Transfemoral vs. Transapical?

Procedure



High puncture to save every centimeter

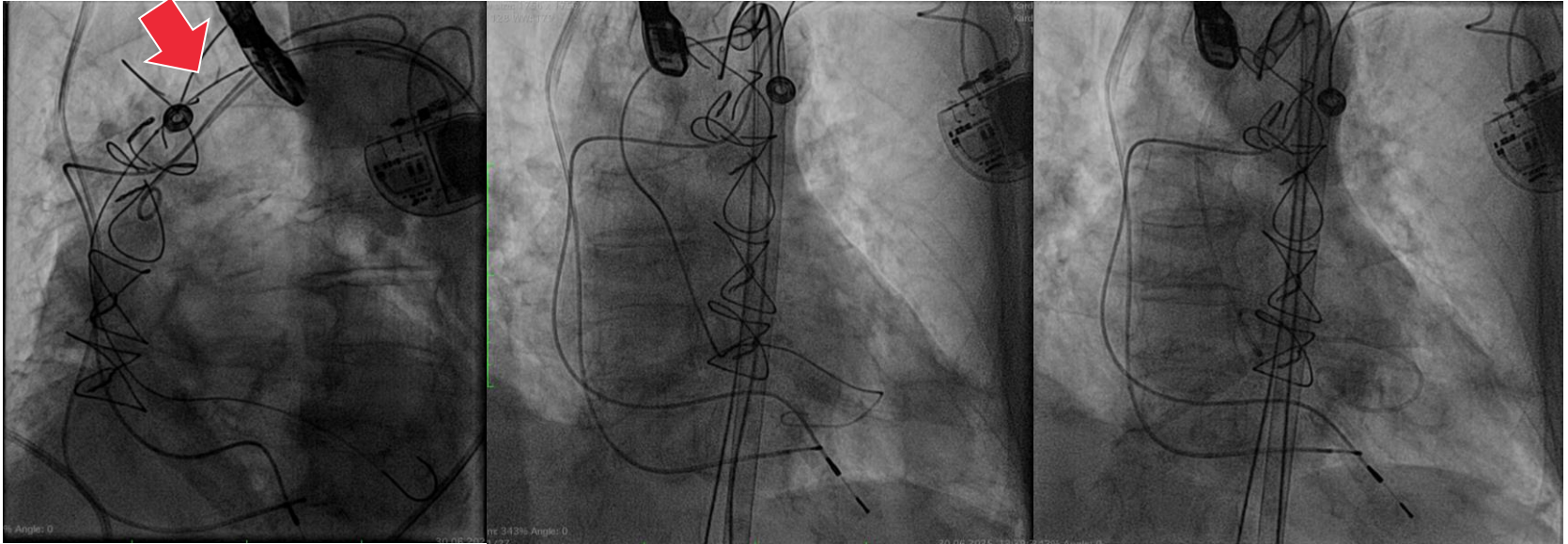


Aortic angiography showed **extreme kinking & dilated arch**



Double-Stiff-Wire Technique was employed to straighten the aorta

Procedure



Buddy balloon became **stuck** in the proximal aortic arch

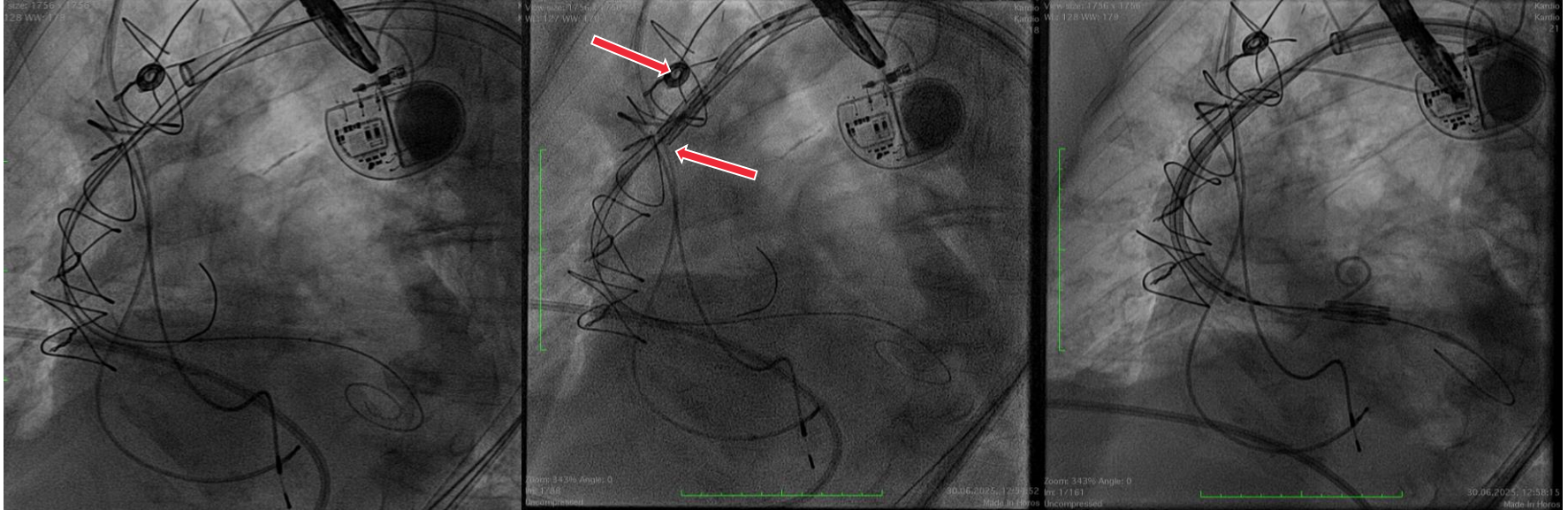


A **Gore 22-Fr 65-cm long sheath** was introduced. **RAO projection** revealed the second aortic curvature.



Stiff wire placement in the LV **straightened the second curve**, enabling sheath advancement to the ascending aorta and **confirming transfemoral feasibility**.

Procedure



Pre-dilatation with 8-mm balloon

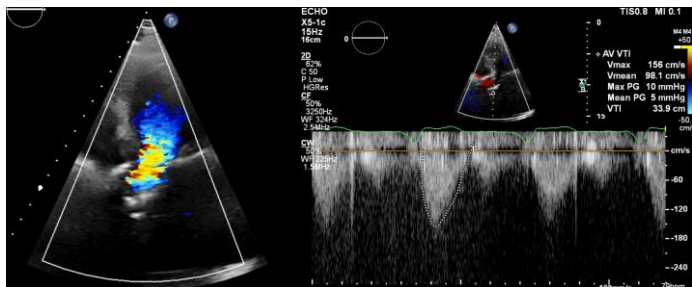


The Commander delivery system became **stuck** again; advancement was achieved by pushing the long sheath and delivery system together.

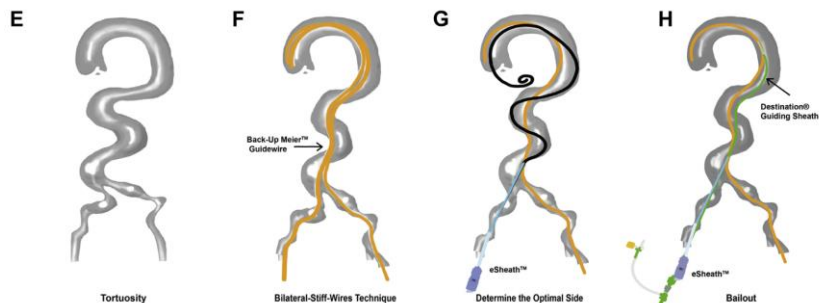


23-mm SAPIEN was deployed with good frame expansion

Take-home Message



Minimal paravalvular leak
Gradient = **5 mmHg**



- In tortuous arteries, **straightening the vessel and minimizing access distance** is key to delivering large systems with reduced friction and facilitating all maneuvers, including retrograde aortic valve crossing.
- The **Double-Stiff-Wire Technique** with a 22-Fr, **65-cm Gore sheath** is essential for navigating a tortuous ascending aorta and dilated arch.
- **RAO projection**, rather than LAO, helps identify the **second steepest curve** of the aorta and guides anterior vs. posterior manipulation for successful advancement.