GE HealthCare

Percutaneous tricuspid annuloplasty with Vivid™ Pioneer

Courtesy of Dr. Marta Sitges, Hospital Clinic at the University of Barcelona

Patient history/ pathology

This 84-year-old male has a medical history significant for Chronic Obstructive Pulmonary Disease, Type 2 Diabetes Mellitus, and persistent atrial fibrillation for the past 10 years. He has experienced multiple hospital admissions for heart failure despite ongoing medical therapy. Recent evaluations have revealed torrential Tricuspid Regurgitation (TR).

Challenges

The patient presents with severe TR, characterized by torrential flow, significant annular dilation, and a large coaptation defect. These anatomical features render the patient unsuitable for transcatheter edge-to-edge repair (TEER). Precise annular visualization is crucial for the success of percutaneous annuloplasty interventions.

System, probe & device used

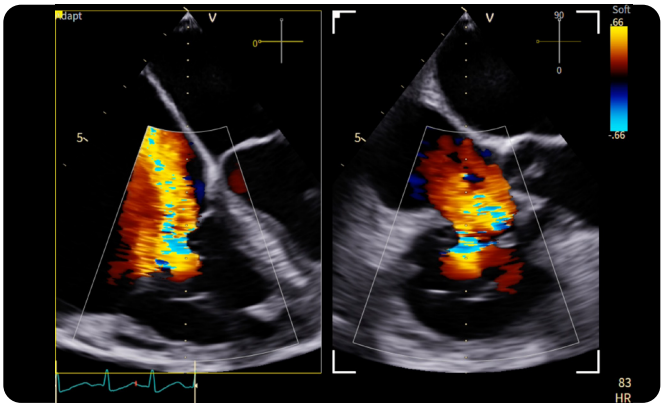
Imaging was performed using the Vivid Pioneer system with a 6VT-D probe.
A transcatheter annuloplasty device was anchored along the tricuspid annulus.

Step-by-step procedure

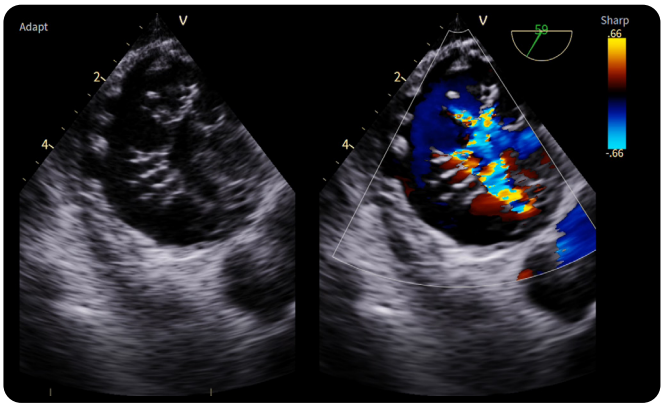
- Quantification of baseline TR
- Sizing of TV annulus using FlexiSlice
- Verification of measurements vs. CT scan
- Guiding of anchor implantation sequentially – starting anteriorly and progressing posteriorly
- Cinching of the band
- Assessment of residual TR

Conclusion

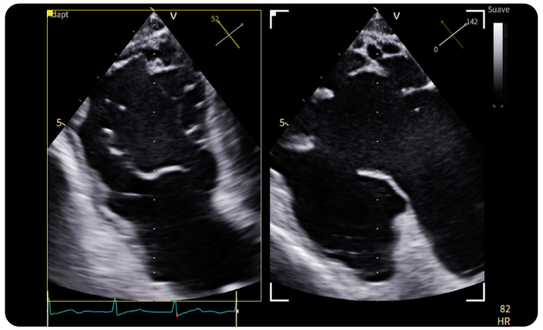
- Excellent visualization of the system with clear differentiation of the different parts
- 2-click align significantly facilitated the alignment with the device at every step, thereby decreasing procedural time
- A significant reduction of TR was achieved
- Awaiting follow-up to assess reverse remodeling of the tricuspid valve annulus and right ventricle
- The patient transitioned from being non-adequate to a potential candidate for TEER. If TR-related symptoms persist, TEER can now be considered as a viable therapeutic option



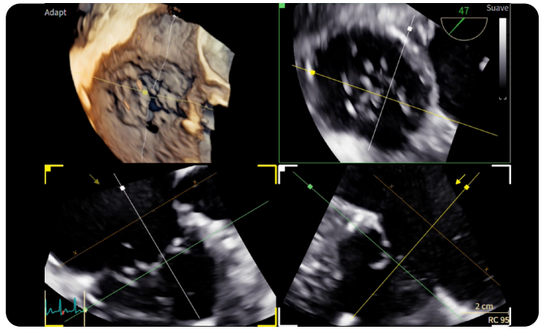
Baseline TR



Baseline TR

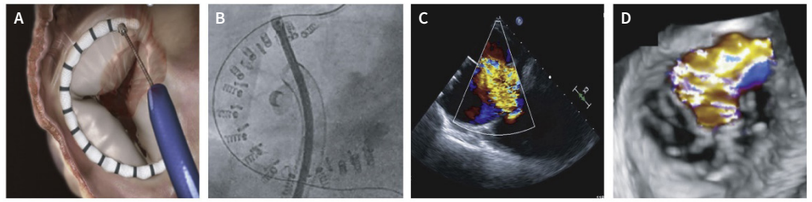


Baseline TR

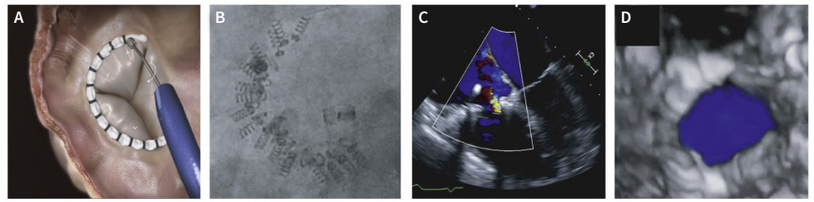


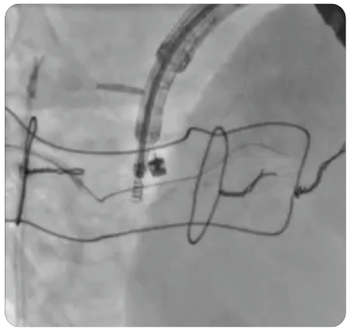
4D assessment of Tricuspid Valve using FlexiSlice

Pre-contraction[1]

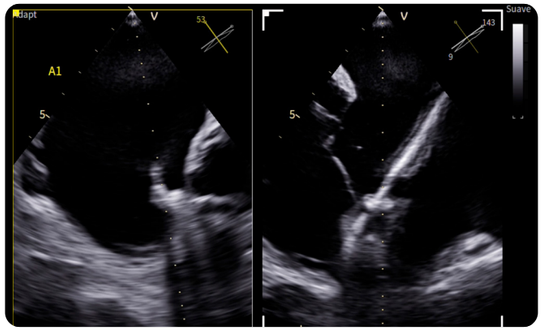


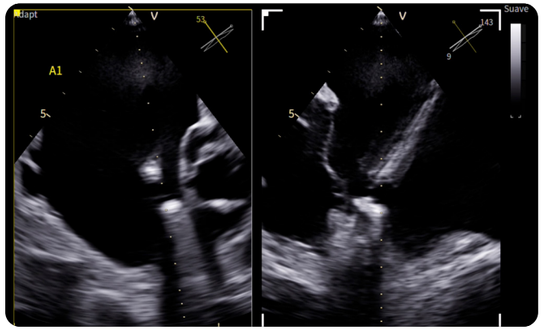
Post-contraction[1]



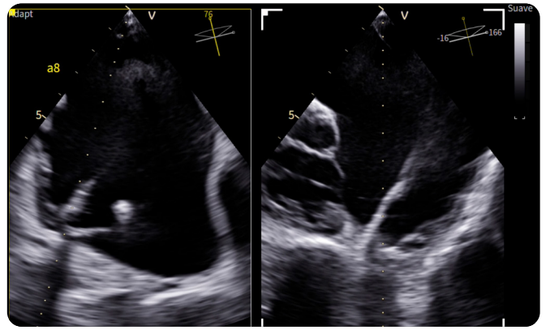


Clear definition of the different parts of the device



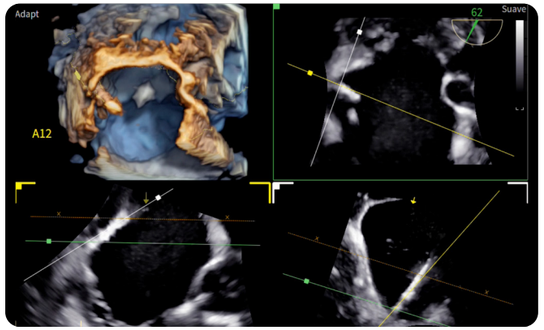


Push & pull

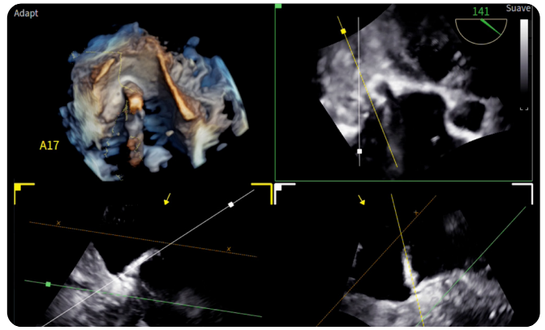


Anterolateral – A8

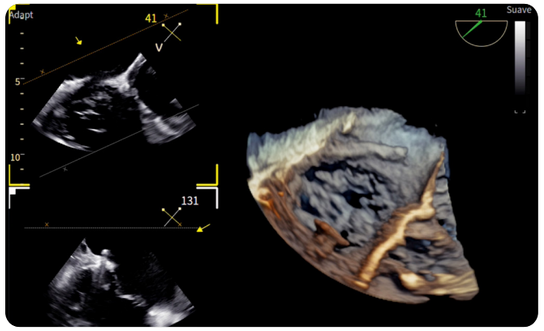
Lateral & posterior anchors



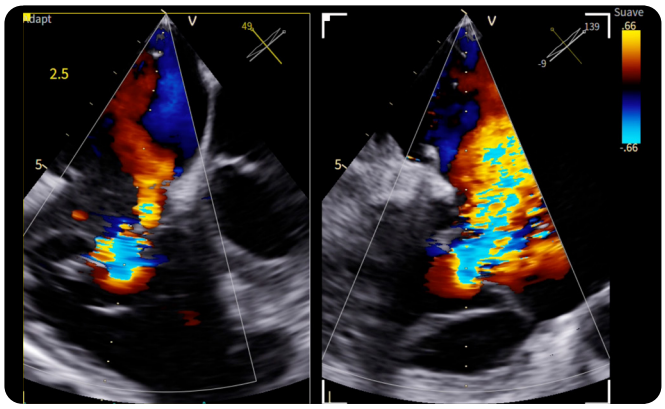
Anchor number 12 easily visualized using 2-click align feature



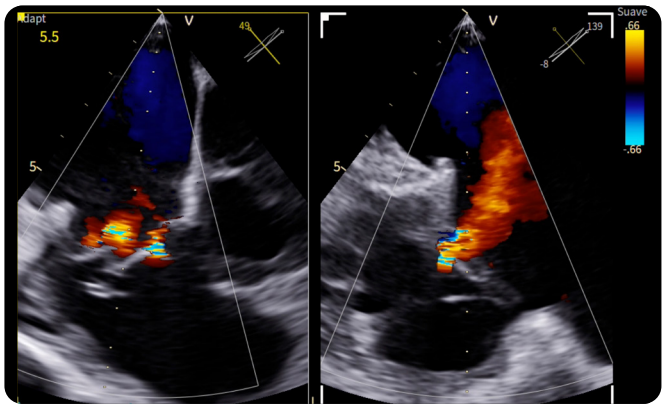
Band resolution



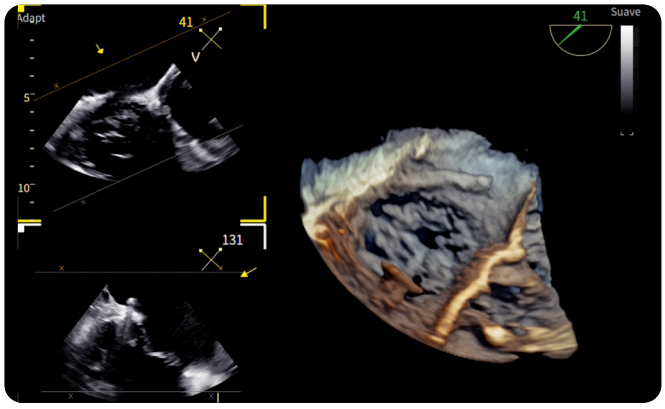
Band completed



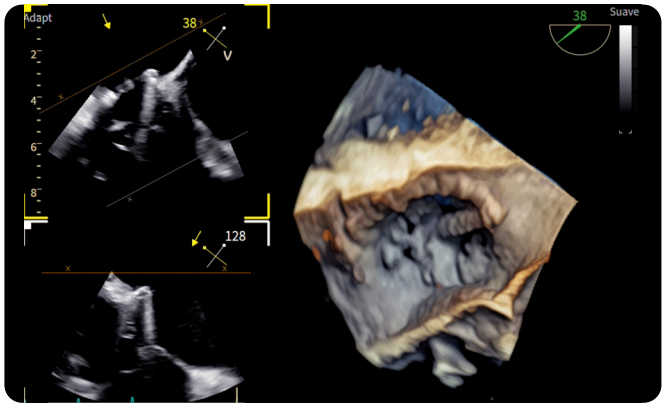
TR before cinching the band



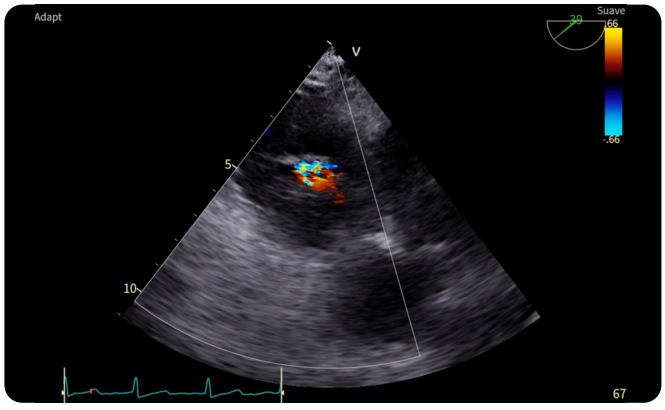
Residual TR after cinching the band



Before cinching the band



Cinching of the band visualized in 4D



Residual TR & gap

1. Davidson, C.J. et al. J Am Coll Cardiol Intv. 2021;14(1):41-50.

Dr. Marta Sitges is a paid consultant for GE HealthCare and was compensated for participation in this article. The statements by Dr. Marta Sitges described here are based on her own opinions and on results that were achieved in her unique setting. Since there is no “typical” hospital/clinical setting and many variables exist, i.e. hospital size, case mix, staff expertise, etc., there can be no guarantee that others will achieve the same results.

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September 2025 JB34625XX

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