

# Mitral valve repair with Vivid™ Pioneer

Courtesy of Dr. Laura Sanchis\*, Hospital Clinic at the University of Barcelona

## Patient history/ pathology

- Male 64-year-old. Hypertension, diabetes, paroxysmal atrial fibrillation
- Patient complained of dyspnea and that was studied in a referral hospital
- A severe mitral regurgitation (MR) was diagnosed
- He was referred to our hospital to finish the study of the valve and evaluate mitral valve repair

## Challenges

The mechanism of the MR was not well visualized by transthoracic echocardiography. The anatomy of the valve and mechanism of the MR need to be evaluated before the intervention to plan the repair strategy.

## System, probe & device used

Vivid Pioneer system, 4Vc-D and 6VT-D probes

## Step-by-step procedure

The TEE identified a deep indentation in segment P2 contributing to MR, after identification of MR mechanism patient underwent surgical mitral valve repair. The direct visualization of the valve during surgery confirmed the echocardiographic findings. The valve was repaired with posterior annuloplasty and neochords implantation at the level of P2.

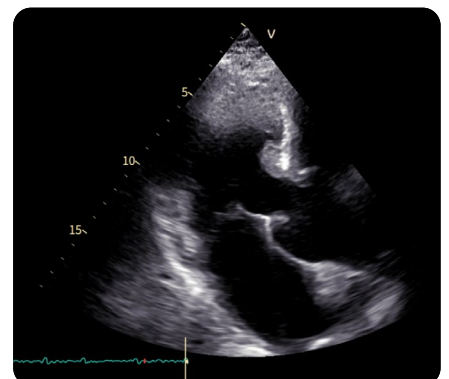
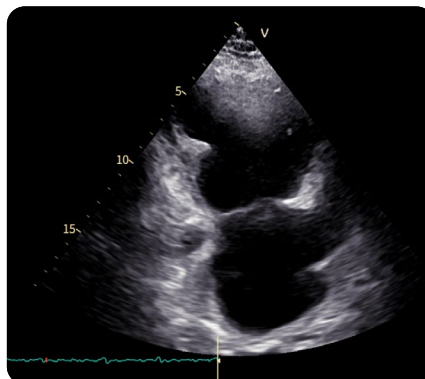
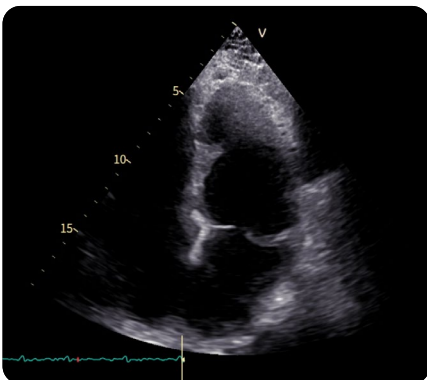
## Conclusion

A correct evaluation of the anatomy of the mitral valve and MR mechanism was crucial for mitral valve repair planification.

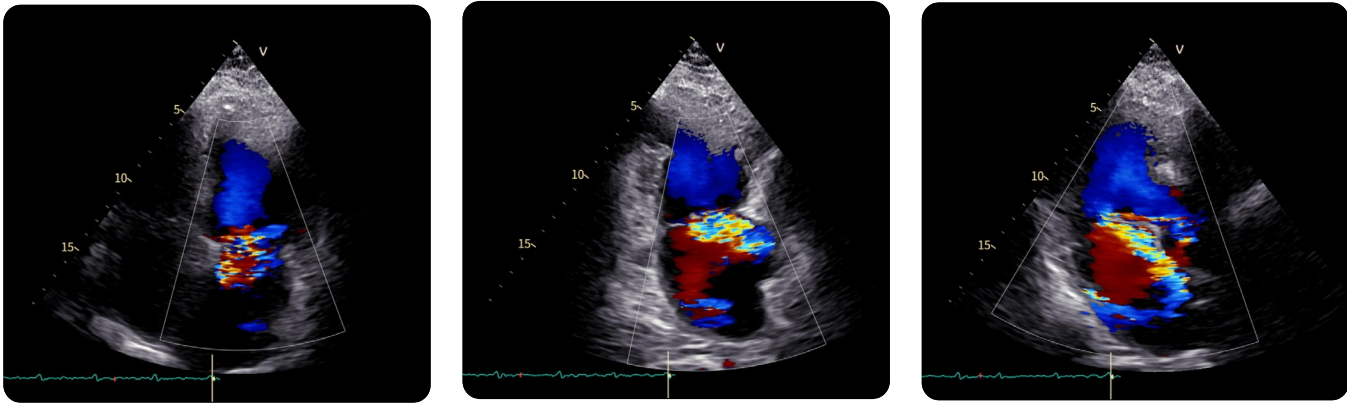
## Follow-up

The TTE performed before discharge showed a successful mitral valve repair with no residual MR.

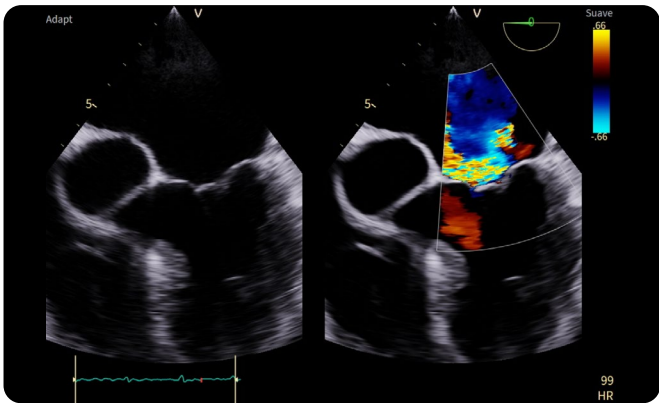
TTE shows severe MR, the mechanism is not well visualized



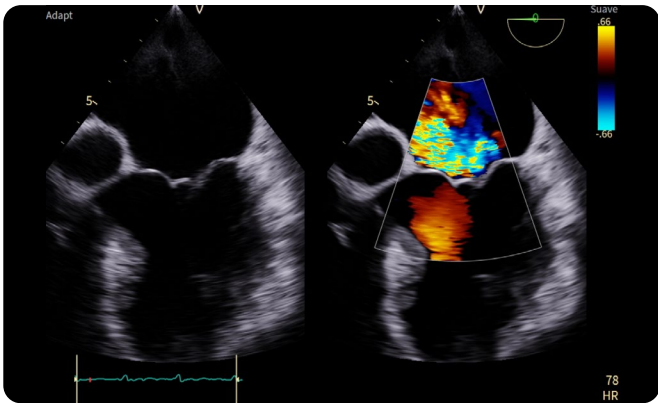
TTE shows severe MR, the mechanism is not well visualized (continued)



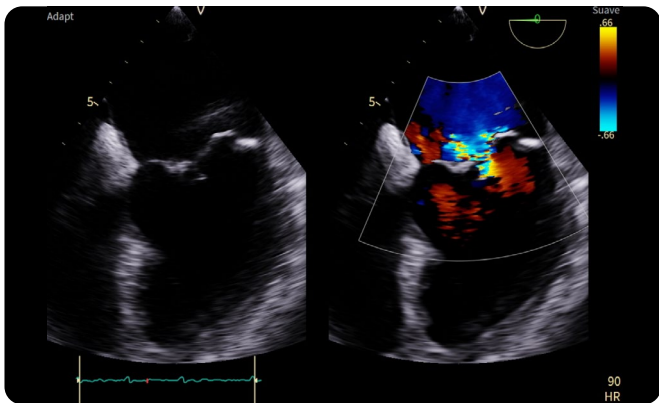
TTE showing the valve at 0°, the origin of the MR seems to be in the central part of the valve



P1-A1

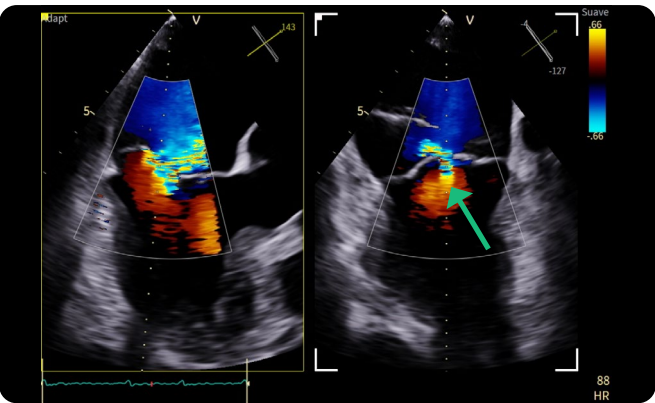
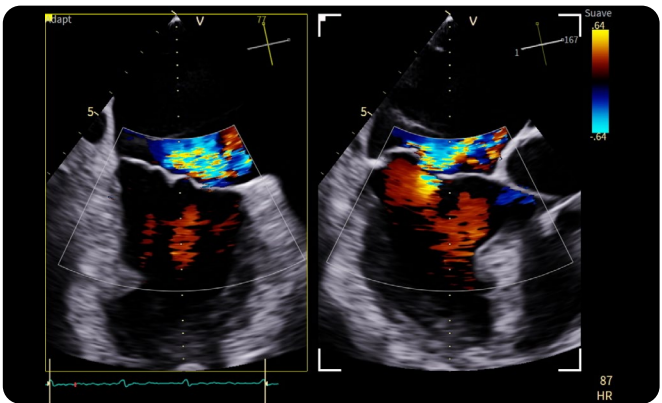
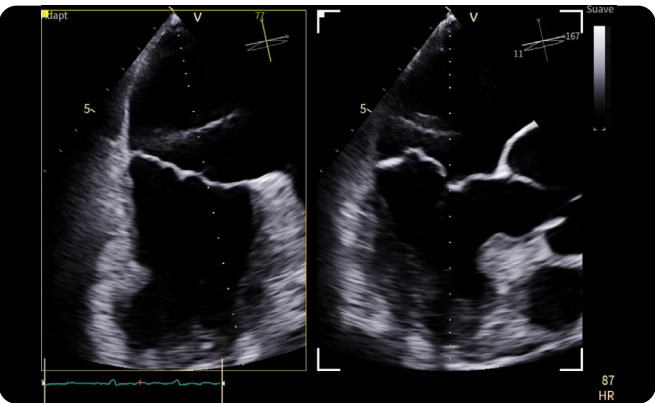


P2-A2



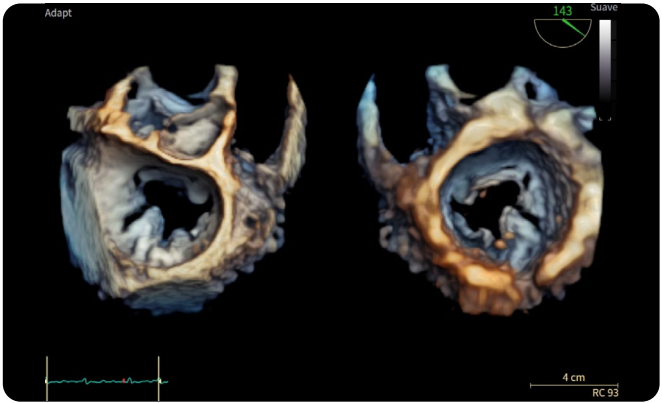
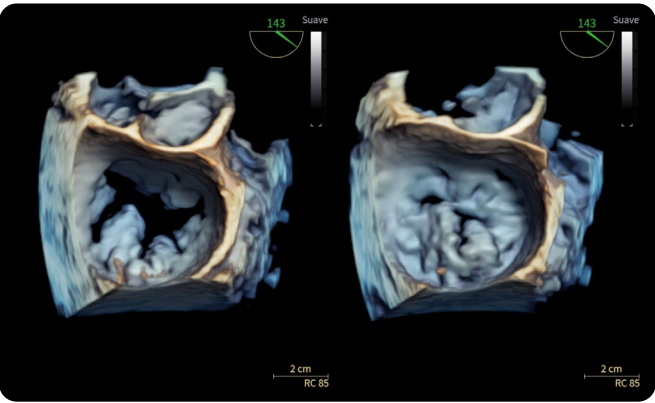
P3-A3

Bi-commissural view with Simultaneous Color and Biplane, despite the origin seems to be in the center of the valve, the mechanism is still not well visualized

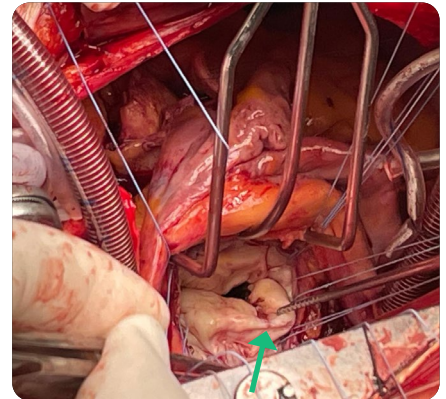
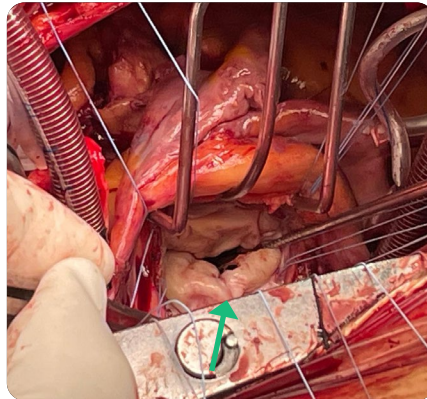
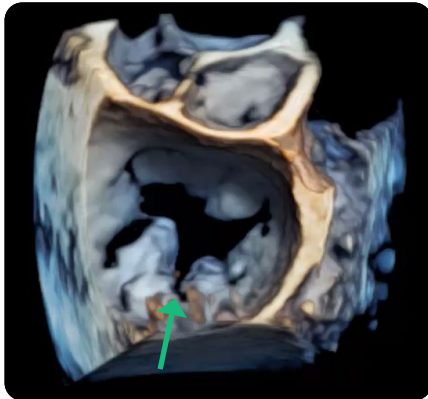


For a better evaluation of the mechanism of the MR jet, a Biplane view of the LVOT cutting the posterior leaflet in the area of the origin of the jet was acquired. The bi-plane image showed two well differentiated scallops in the posterior leaflet suggesting a pathological indentation in center of the posterior leaflet being the main origin of the MR

The pathological indentation was confirmed with 4D imaging



Picture of the mitral valve taken during open-heart surgery showed an excellent anatomical correlation with the 4D images obtained prior to surgery



\*Dr. Laura Sanchis is a paid consultant for GE HealthCare and was compensated for participation in this article. The statements by Dr. Laura Sanchis 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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