

# Mitral Annuloplasty Ring Dehiscence: A Baffling Problem

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## BACKGROUND

- MV annuloplasty ring dehiscence is infrequent, occurring in 1.6% of patients and carries significant morbidity and mortality.

- Dehiscence is a serious complication localized more frequently to posterior annulus, and typically results in severe MR in up to 93% of patients.

- Clinical outcomes for failed MV repair re-operation has inadequately described and novel percutaneous strategies can be considered in high risk pts.

## CASE

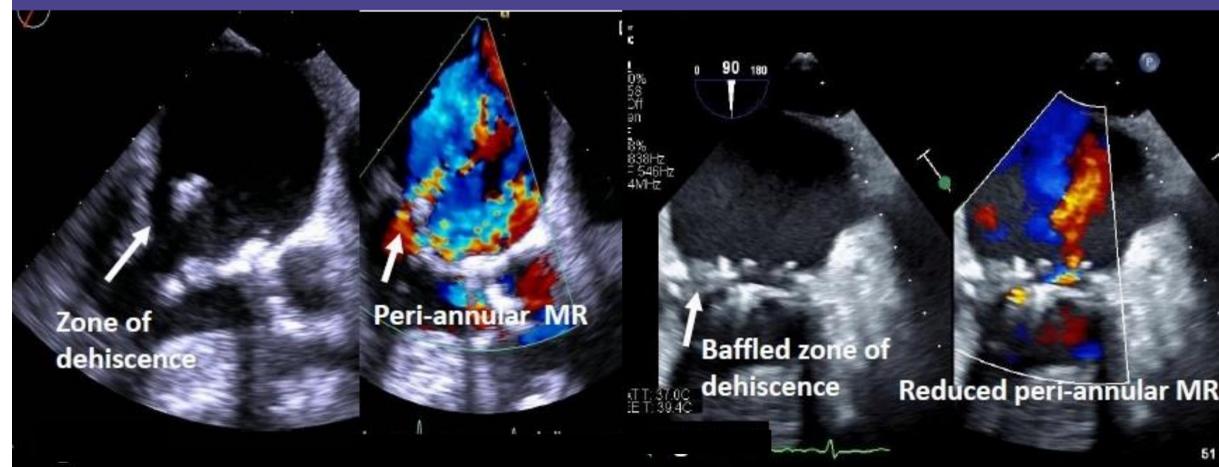
- 84 year old male history of CAD s/p CABG, severe MR s/p MV repair with 32 mm Carpentier-Edwards mitral annuloplasty ring insertion presenting with progressive NYHA class III heart failure symptoms.

- TEE demonstrated MV annuloplasty ring dehiscence extending across the posterior annulus with severe peri-annular and central mitral regurgitation (Fig. 1, 2).

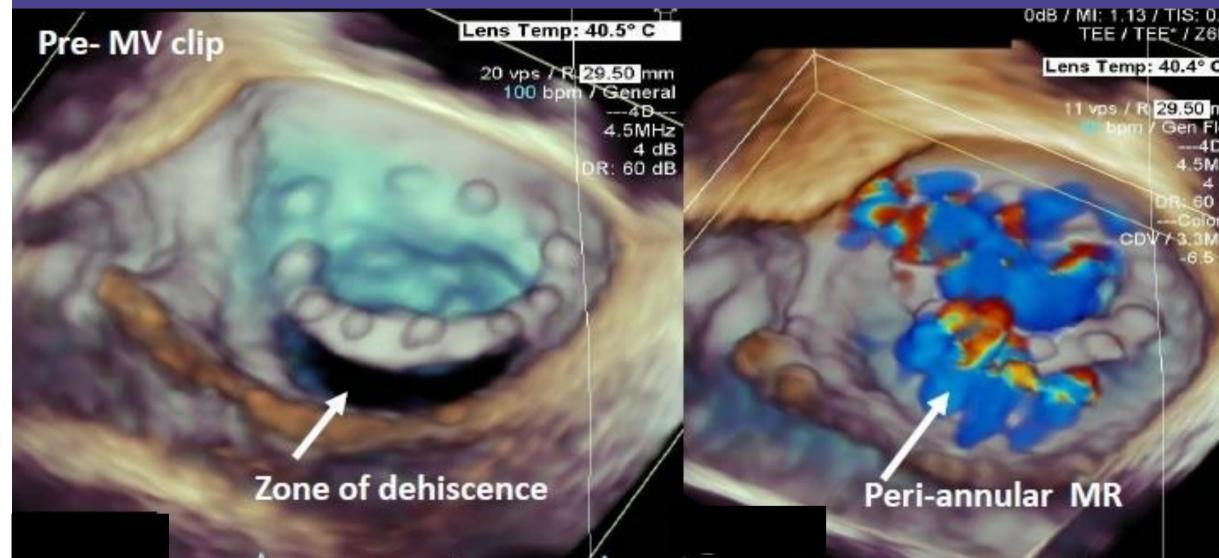
- Calculated STS Risk Score for mortality 14.3% and combined morbidity and mortality 30.4%. Referred for transcatheter edge-to-edge repair.

- Pre-clip TEE: severe MR (periannular and central jets) with a direct left atrial V wave pressure of 40mmHg. (Fig. 1, 2). MV PHT 69 ms, MV area PHT 3.14 cm<sup>2</sup>.

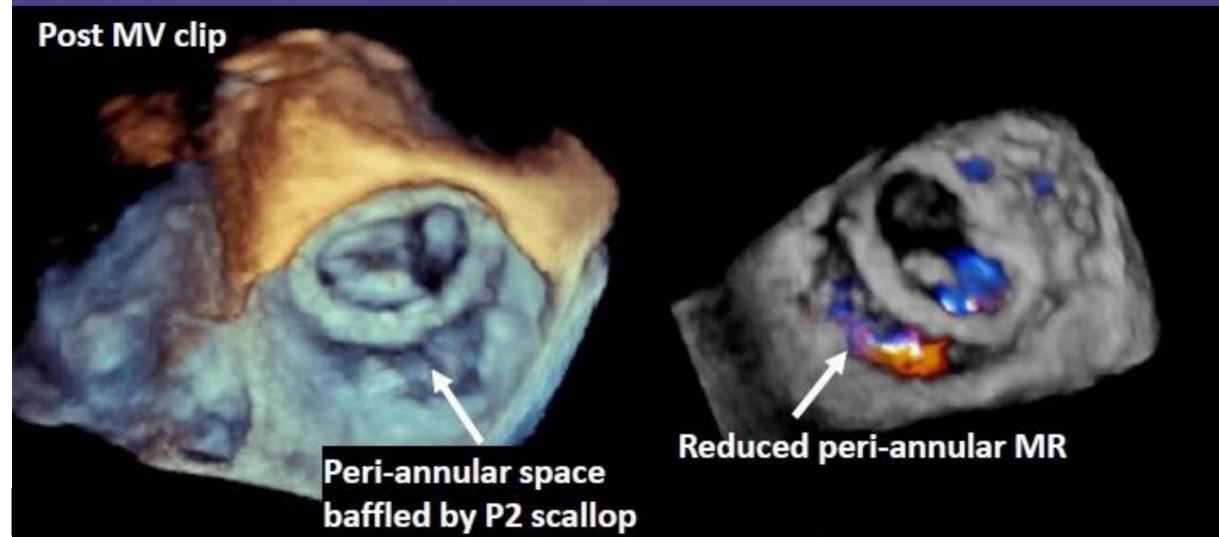
- Post-clip TEE: mild MR, reduction of periannular MR, and reduction of left atrial V wave pressure to 14 mmHg and mean gradient 8 mmHg. MV gradient 4 mmHg (Fig. 3).



**FIGURE 1:** Pre-clip and Post-clip TEE in 2 chamber, long axis views demonstrating zone of annular dehiscence, severe MR and reduction in MR with MitraClip.



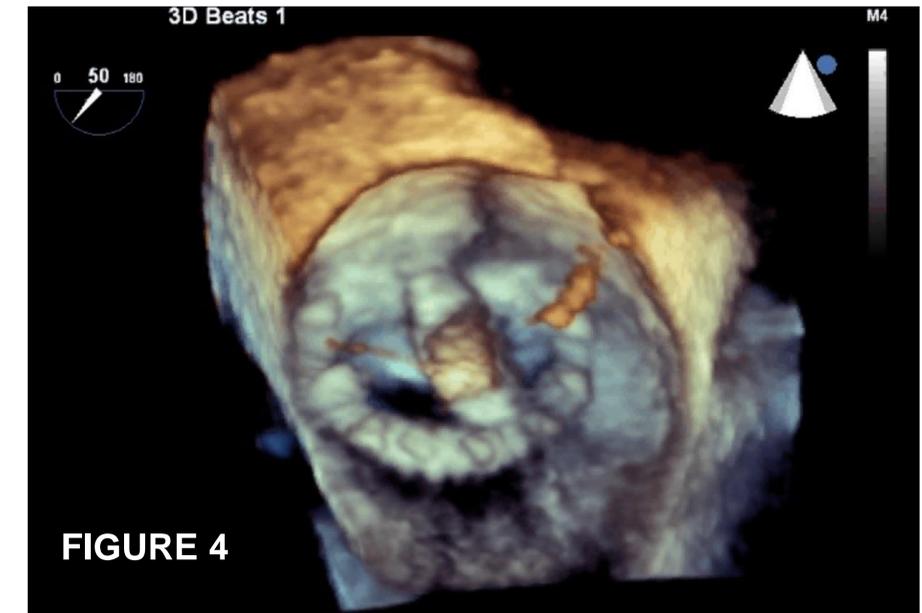
**FIGURE 2:** Pre-Clip 3D TEE images from left atrium with and without color Doppler demonstrating zone of annular dehiscence and peri-annular MR.



**FIGURE 3:** Post-Clip 3D TEE images from LA with color Doppler demonstrating clipped A2-P2 leaflets resulting in baffled flow away from MV zone of dehiscence.

## PROCEDURE

- Abbott MitraClip was used to oppose the P2 and A2 scallops. This pulled P2 scallop over the region of dehiscence, thus baffling flow away from the dehiscenced periannular space.



**FIGURE 4**

## CONCLUSION

- Occurrence of MV ring dehiscence can be characterized into acute (<30 days), early (<1 year), and late (>1 year) with relative incidence of 44%, 33%, and 23%, respectively.

- Annuloplasty ring dehiscence most frequently involves the posterior leaflet and is localized to the P3 segment (68%), P2 segment (51%), and P1 segment (47%).

- 30 day mortality estimated at 2%. Survival at 1 and 5 years was 89% and 74%, respectively.

- In the past 2 decades the incidence of annuloplasty ring dehiscence has decreased from 3.7% to 1%, which may represent ongoing improvement in surgical MV repair techniques and annuloplasty ring design.

- This case represents novel use of Abbott MitraClip to re-direct periannular regurgitation from a dehiscenced MV annuloplasty ring.

- Use of Mitraclip can be considered in select high risk patients to effectively reduce MR and improve heart failure symptoms.

## DISCLOSURE INFORMATION

The authors have no conflicts or disclosure to report.