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Image of the Issue

A Novel Approach of Clipping the Mitral Valve☆,☆☆,★

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73-year-old male with past medical history of coronary artery disease status post coronary artery bypass surgery (CABG), severe mitral regurgitation status postsurgical mitral valve repair with 28 mm Medtronic Future ring, was seen in our clinic for worsening heart failure symptoms and worsening of mitral regurgitation on echocardiogram. Physical exam revealed pansystolic murmur grade 3/6 best heard in the axilla and 2+ pitting edema. An echocardiogram was done which showed severe mitral regurgitation, ejection fraction (EF) of 20% and transvalvular gradient across the mitral valve of 5 mm Hg. Cardiac catheterization which showed stable coronary artery disease. Deemed to be a too high risk for a redo surgical repair of the mitral valve, transcatheter repair of the mitral valve was planned. Transesophageal echocardiogram showed severe mitral regurgitation (Figs. 1, 2). The anterior leaflet of the mitral valve was thickened and its mobility was restricted. The posterior leaflet was not well visualized and its motion was severely restricted. During the transcatheter procedure, A2 segment of the anterior leaflet and clipped it to the mitral annuloplasty ring more medially (Fig. 3). This decreased the mitral regurgitation significantly (Figs. 4, 5, 6, 7). Post-procedure transthoracic echocardiogram was done which revealed mild mitral regurgitation with a mean mitral transvalvular gradient of 4 mm Hg (Fig. 7).

☆ Uniqueness of the case report:We present a case of trans catheter mitral valve repair, where we clipped the anterior mitral leaflet to the mitral valve annuloplasty ring. We could not find any cases that had used this method for the treatment of severe mitral regurgitation or bear similarity to ours reported in literature so far.

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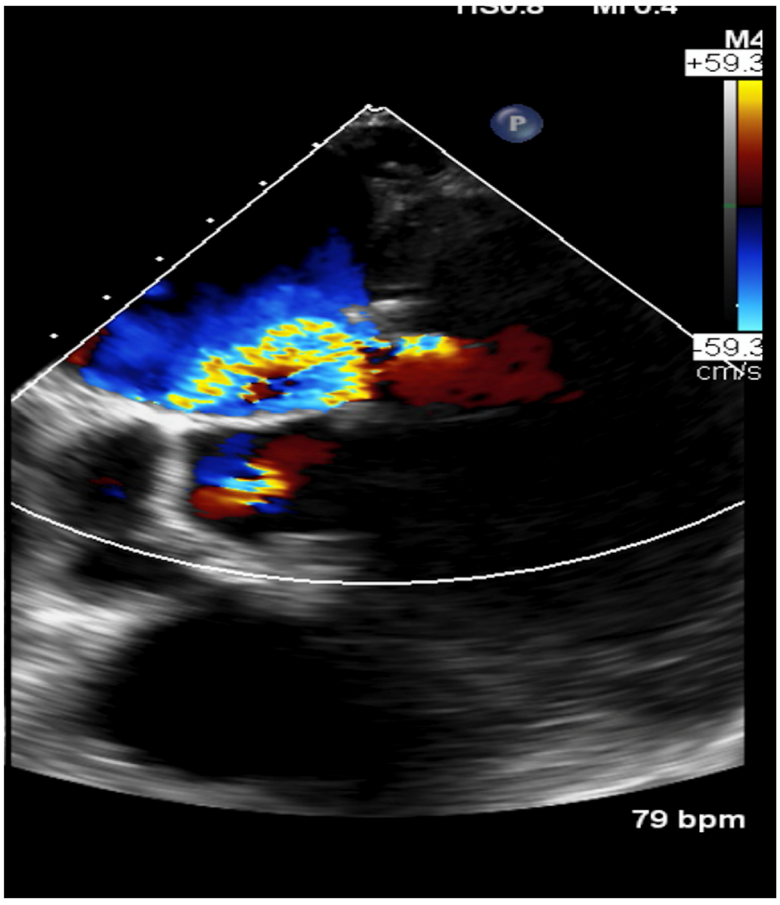

Fig. 1. Preoperative TEE showing severe eccentric mitral regurgitation jet directed towards anterior and medial wall of left atrium.

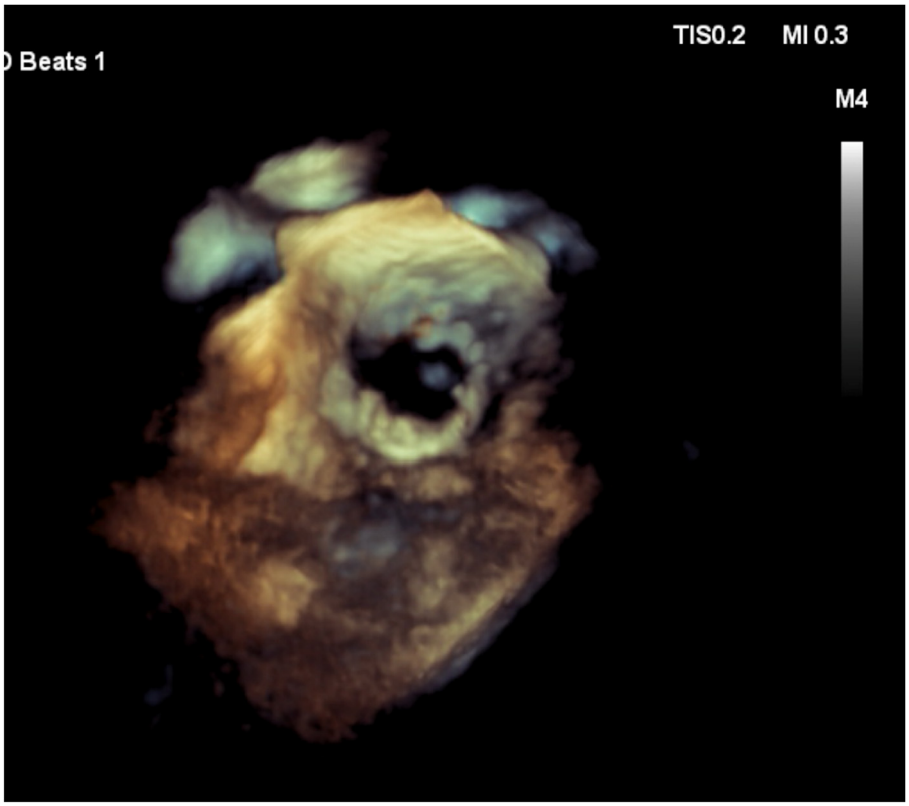

Fig. 2. Intraoperative TEE showing 3D structure of mitral valve annuloplasty ring—left atrium view.

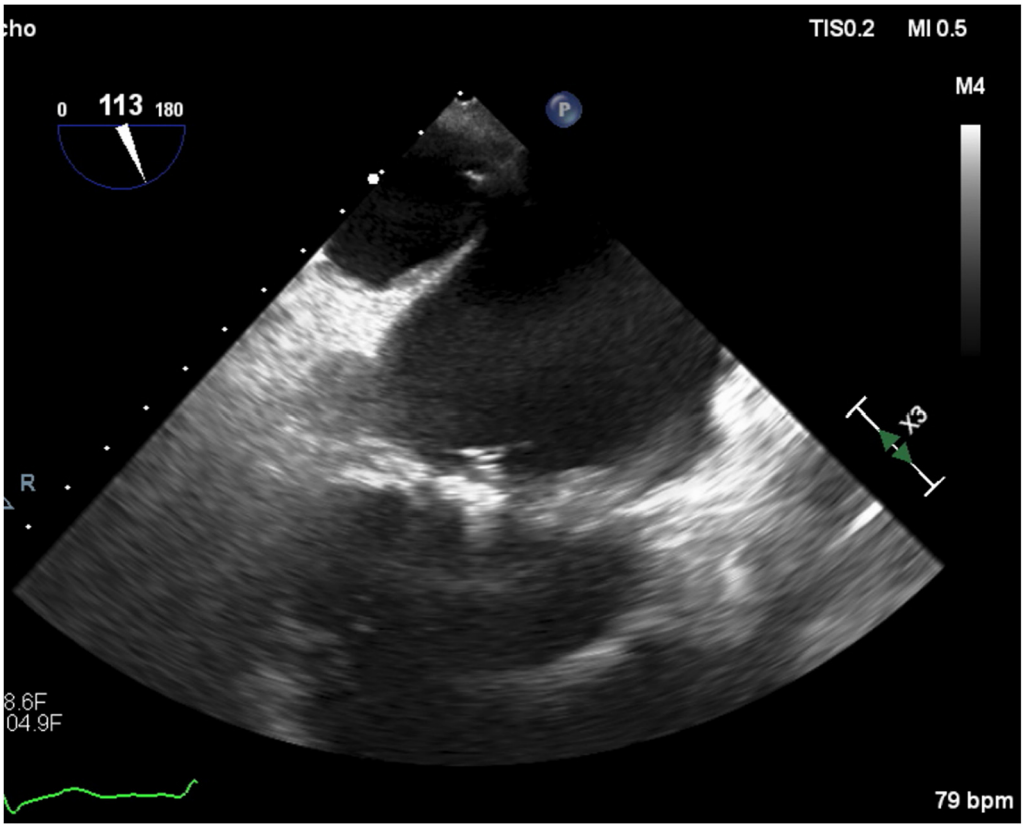

Fig. 3. Intraoperative TEE showing deployed MitraClip.

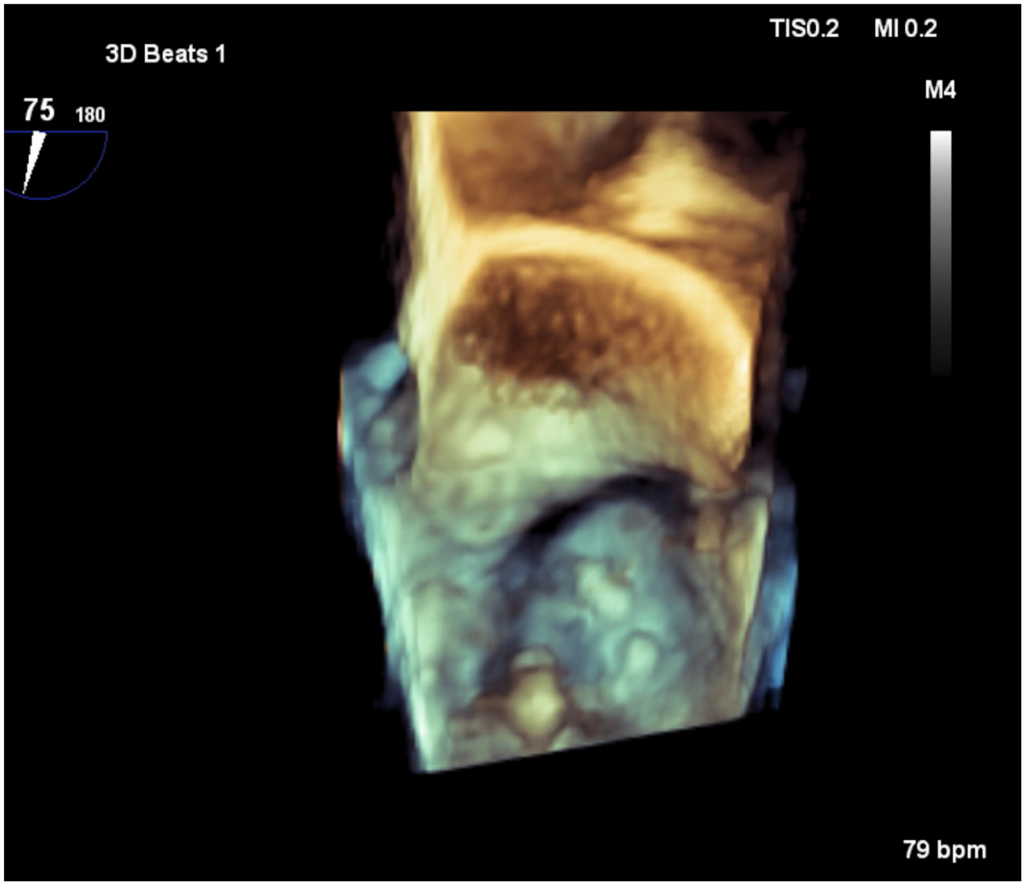

Fig. 4. Intraoperative 3D TEE showing deployed MitraClip—left atrium view.

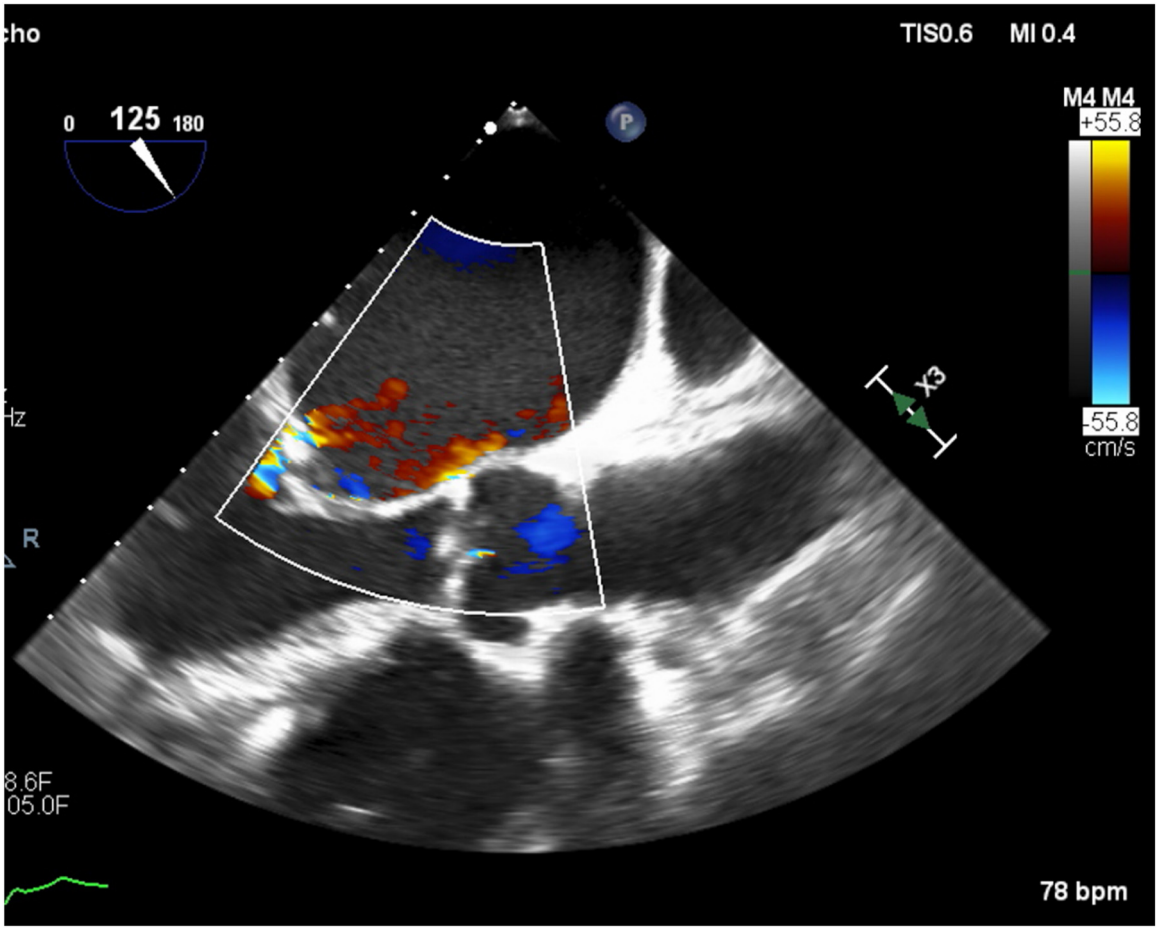

Fig. 5. Intraoperative TEE showing mild MR after deployment of MitraClip.

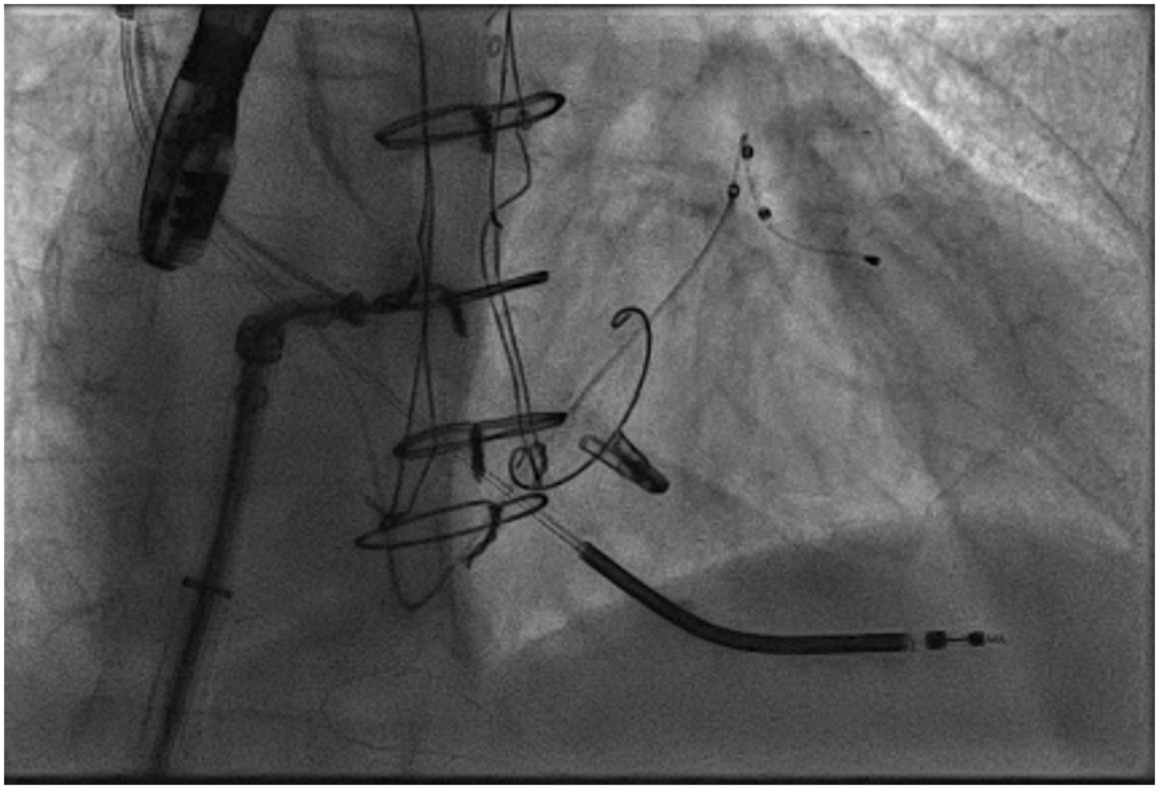

Fig. 6. Intraoperative fluoroscopic image in RAO projection showing deployed MitraClip anchoring onto the annuloplasty ring.

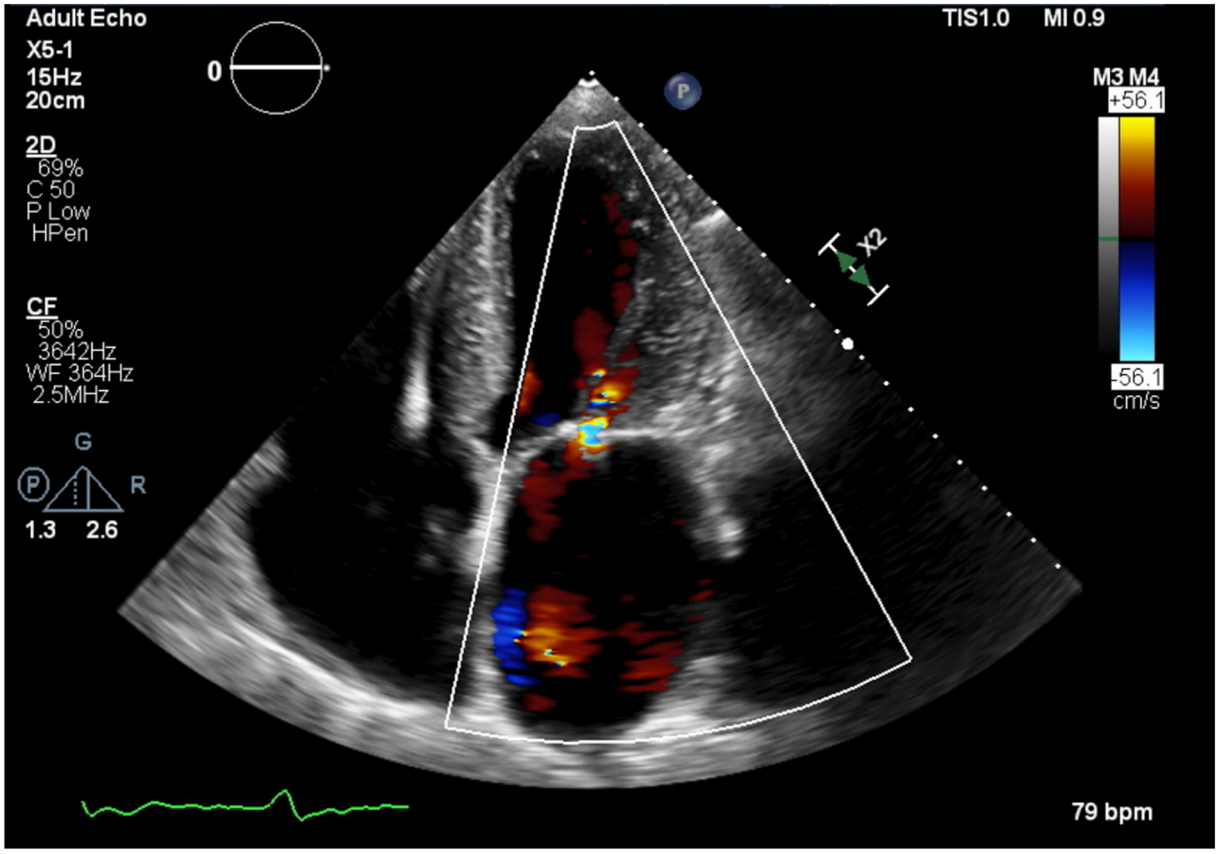

Fig. 7. Post procedure TTE in apical 4 chamber view showing mild mitral regurgitation.