

Posterior mitral leaflet prolapse with the posteriorly directed jet: feasibility of the MitraClip procedure

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Correct evaluation of mitral valve anatomy in commissural mitral regurgitation (MR) is challenging.¹ In general, the direction of the regurgitant flow is opposite to the mitral leaflet abnormality in primary MR. An 87-year-old woman presented with symptoms of heart failure and severe primary MR. Transesophageal echocardiography showed eccentric MR starting at the medial commissure and moving in the posterolateral direction. On 2-dimensional, orthogonal images in the bicommissural view, the prolapsed segment seemed to be anterior (FIGURE 1A and 1B). However, color Doppler imaging in the 3-dimensional, anterior view could suggest a medial

posterior abnormality, based on the symmetrical comparison with the lateral commissure (FIGURE 1C). By using the offline analysis (QLAB 10.0, Philips Healthcare, Eindhoven, The Netherlands), the true orthogonal plane was slightly rotated counterclockwise from the bicommissural view. By this approach, the orthogonal plane was adjusted to the coaptation line of the medial commissure. The prolapse of the posterior mitral leaflet was confirmed (FIGURE 1D; Supplementary material, Figure S1). The MitraClip (Abbott Vascular, Santa Clara, California, United States) procedure was then conducted and mild MR was observed after implanting 2 clips (FIGURE 1E and 1F;

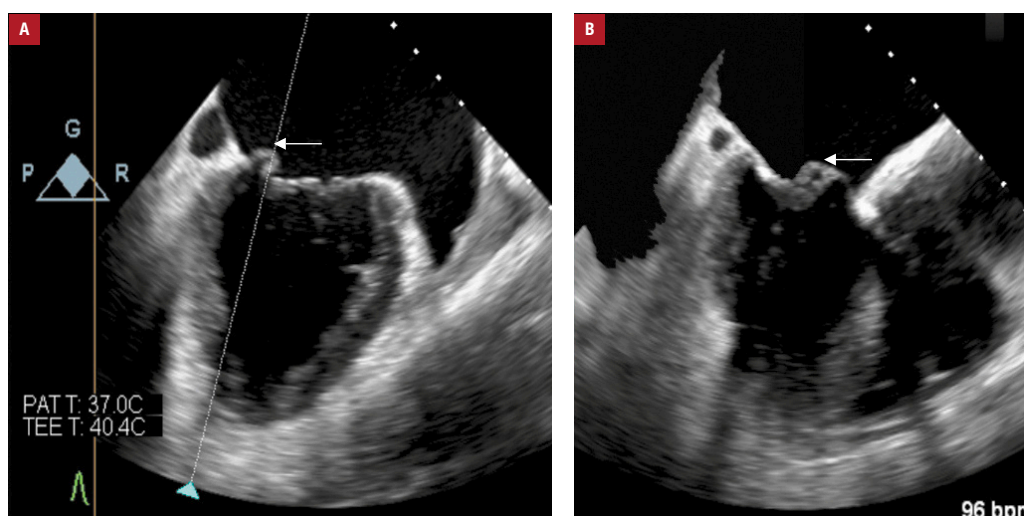


FIGURE 1 Transesophageal echocardiography: **A** – bicommissural view; the arrow indicates the site where the abnormality is seen; **B** – orthogonal view over the medial segment of the bicommissural view; the arrow shows the abnormality

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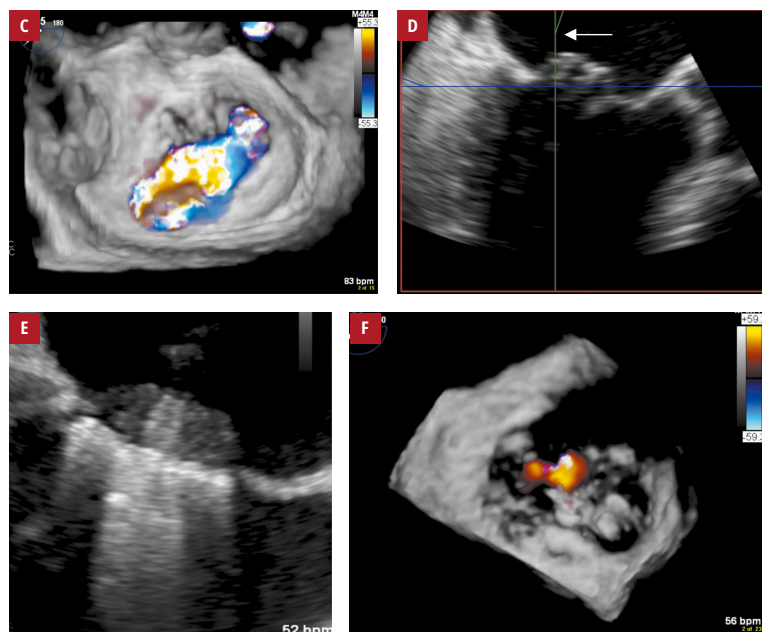


FIGURE 1 Transesophageal echocardiography: **C** – a 3-dimensional color image confirming the jet direction; **D** – three-dimensional reconstruction with the coaptation line crossed, showing the true orthogonal plane. The arrow indicates the posterior prolapse of the medial mitral segment; **E** – view of the left ventricular outflow tract showing grasping over the anterior and posterior prolapsed mitral leaflets at the medial segments; **F** – a 3-dimensional color image demonstrating mild mitral regurgitation after placing 2 clips

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Supplementary material, *Video S1*). Rzucidło-Resil et al² demonstrated that clinical outcomes in patients with severe MR who underwent surgical intervention within the mitral valve correlated with preoperative comorbidities rather than the mechanism of MR itself. On the other hand, the feasibility of transcatheter edge-to-edge repair depends on the anatomical suitability *per se*.³ It is challenging to conduct the MitraClip procedure in the commissural site owing to difficulties related to imaging and subvalvular structures as well. Since the posterior mitral leaflet involved 2/3 of the mitral annulus, the commissural segments were located anteriorly to the mid line of the mitral annulus. Under such circumstances, it is unreliable to determine the prolapsed segment solely based on the jet direction. The case presented here demonstrated that 3-dimensional reconstruction is crucial to identify the true orthogonal plane against the coaptation line, which is of particular importance to operators performing the MitraClip procedure.

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/kardiologiapolska.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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