


## CASE IMAGE

## Mitral valve prolapse accompanied by a posterior mitral leaflet cleft resembling a trileaflet mitral valve

### Üç yaprakçıklı mitral kapak görünümünde posterior yaprakçıkta kleftin eşlik ettiği mitral kapak prolapsusu

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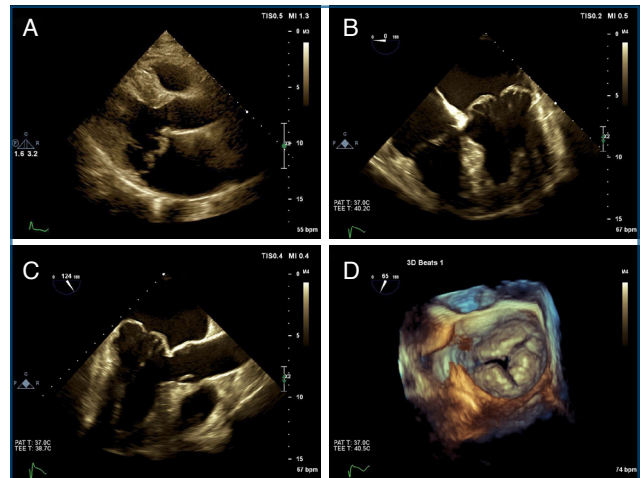
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A 51-year-old obese man was referred to our hospital for echocardiography. The patient's chief complaint was atypical chest pain. Physical examination was unremarkable. Electrocardiography revealed T-wave inversion in the inferior leads. Transthoracic echocardiography revealed bileaflet mitral prolapse accompanied by severe mitral regurgitation and a mildly enlarged left ventricle with a reduced systolic function (ejection fraction of approximately 45%). The papillary muscles were in the right location. Three-dimensional transesophageal echocardiography revealed a posterior mitral valve cleft at the center of the P2 scallop pointing to the left ventricular outflow tract; consequently, there was 1 anterior mitral leaflet and 2 posterior mitral leaflets (medial and lateral). The posteromedial and anterolateral commissures were in the right position (Figure 1, Video 1 and 2\*).

The mitral regurgitation jets came from the posterior mitral leaflet cleft and other anterior-posterior leaflet coaptation sites. In addition, there was prolapse in the A2-A3 and P2-P3 scallops. Severe mitral regurgitation was confirmed via transesophageal echocardiography. The patient was referred for mitral valve surgery.

A posterior mitral leaflet cleft can be detected by 3-dimensional echocardiography, whereas it can be easily overlooked by 2-dimensional echocardiogra-



**Figure 1.** (A) Parasternal long-axis view in transthoracic echocardiography showing bileaflet mitral prolapse, (B) mid-esophageal 4-chamber view, and (C) mid-esophageal long-axis view in transesophageal echocardiography showing the prolapse of the A2 and P2 scallops. (D) Three-dimensional zoom-mode of the mitral valve in transesophageal echocardiography demonstrating the anterior mitral leaflet and a posterior mitral leaflet cleft at the P2 scallop, resulting in 2 posterior mitral leaflets (medial and lateral).

phy. A posterior mitral leaflet cleft is in the differential diagnosis of a true trileaflet mitral valve. A trileaflet mitral valve has 3 equidistant commissures, a central leaflet coaptation, and a displaced anterolateral commissure. It may also be in tandem with displaced papillary muscles, subaortic stenosis, or hypertrophic cardiomyopathy. Three-dimensional echocardiography delineates pathologies of the mitral valve, such as posterior mitral leaflet clefts, better and helps modify surgical plans.

\*Supplementary video files associated with this article can be found in the online version of the journal.