

## Mitral Regurgitation Secondary to Cleft Posterior Mitral Valve Leaflet Defect

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Cleft mitral valve leaflet is defined as a discontinuity of the mitral leaflet from the free edge of the mitral ring, which results in a certain degree of regurgitation. (1)

Embryologically, the upper cushion originates the portion of the anterior mitral leaflet, and the left lateral cushion the posterior leaflet. (2)

In most cases, cleft mitral valve leaflet is due to a cleft of the anterior leaflet. Cleft of the posterior mitral valve leaflet is a rare anomaly, not associated with septal defects. It is usually seen within the P2 segment. (Figure 1). (1-3)

3D echocardiography allows perspective views that improve cleft visualization and location of the defect present in the middle and posterior leaflet scallops. (4-5)

The images correspond to a 64-year-old female patient with hypertension, dyslipidemia, history of dyspnea in FC II and palpitations. Physical examination showed a holosystolic murmur as the only significant finding, with II/IV intensity in the mitral area and transmission to the anterior axillary line. Baseline ECG did not show alterations. Transthoracic echocardiography showed mild septal hypertrophy, left ventricular diameter just above the normal limit, preserved left ventricular systolic function, moderate left atrial dilation (area 29 cm<sup>2</sup>), mild tricuspid regurgitation that allowed calculation of systolic pulmonary pressure of 42 mm Hg, and mitral regurgitation with moderately severe central regurgitant jet. A solution of continuity was seen in the left parasternal short axis view (mitral valve level) on the posterior leaflet, consistent with a cleft (see Figure 1). A 3D transthoracic echocardiography was performed, which confirmed the presence of a cleft in the middle portion (P2 segment) of the posterior leaflet (Figure 2, Video 1). No abnormalities of the mitral valve apparatus or defects in the interatrial septum were observed.

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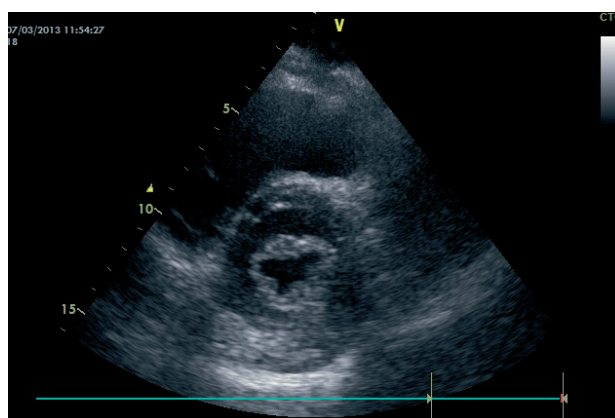
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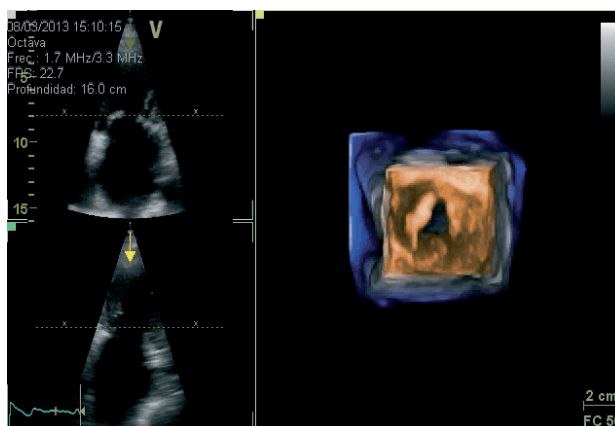
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**Fig. 1.** Left parasternal short axis view (mitral valve level), showing loss of continuity of the posterior leaflet (P2 segment).



**Fig. 2.** 3D echocardiography showing solution of continuity in the posterior leaflet.

Video 1. See web edition.