



## Letter to the editor

## Stuck valve leaflet detected by 3D transesophageal echocardiography

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**Conflict of interest**

None declared.

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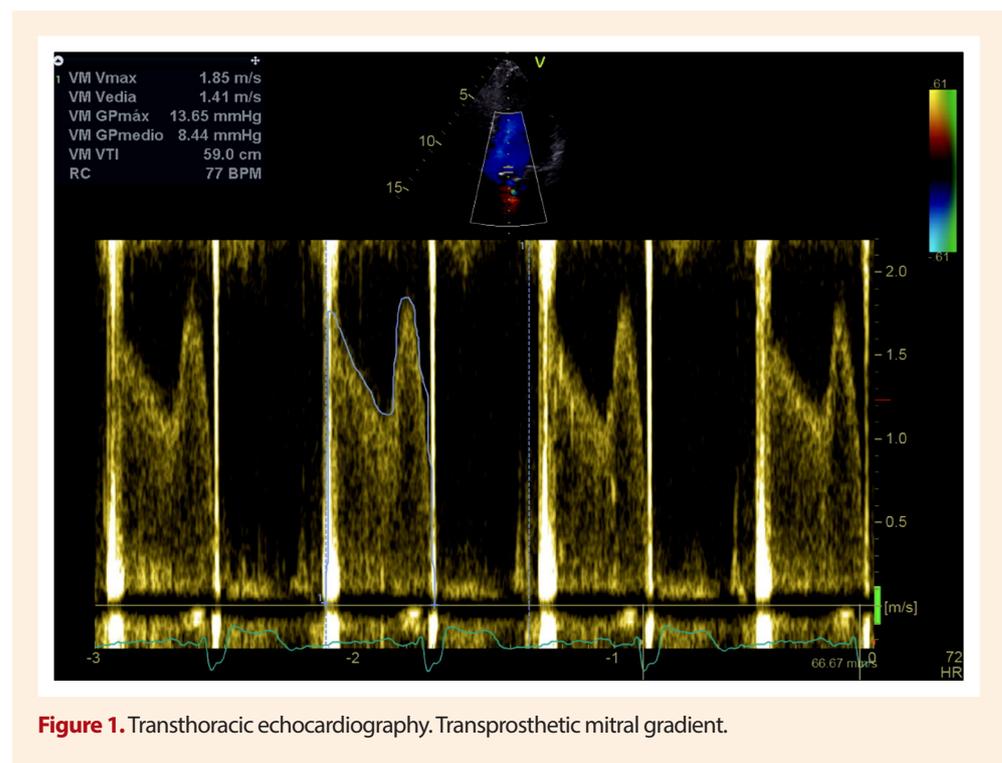
*Mr. Editor:*

A 67-year-old male patient with a history of a mechanical mitral prosthesis implanted 5 months earlier attended the outpatient clinic due to exertional dyspnea. The electrocardiogram revealed a right bundle branch block. Following hospital recommendations, given the suspicion of prosthetic dysfunction, transthoracic echocardiography (TTE) and / or transesophageal (TEE) were indicated <sup>(1)</sup>.

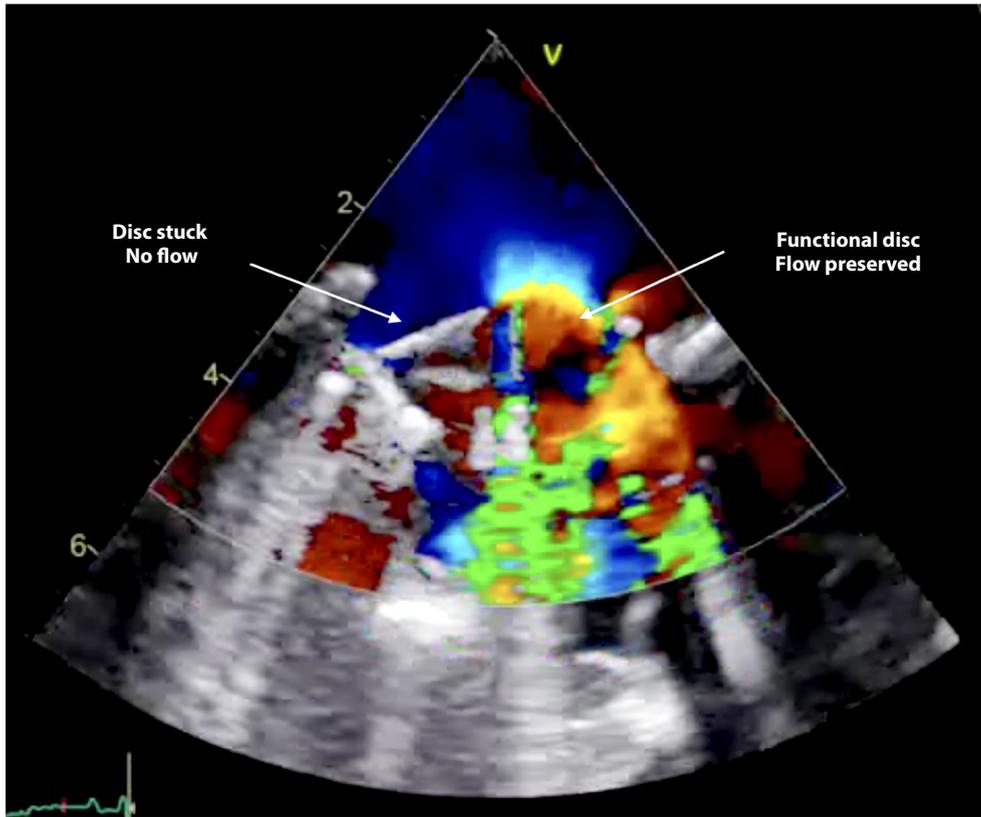
The most relevant finding of TTE was in the study of the prosthesis. The mean gradient resulted in 8.4 mmHg (**Figure 1**), the prosthesis ITV / left ventricular outflow tract ratio calculated at 4 and the effective orifice area per pressure half-time estimated at 1.5 cm<sup>2</sup>. Once the severity was defined, TEE was indicated to determine the valve obstruction mechanism and assess the presence of prosthetic regurgitation, which was made difficult in TTE due to metal artifacts (2). With the 2D-TEE at the middle esophageal level, obstruction of the lateral disc was discovered and consequently impaired atrioventricular flow on that side (**Figure 2**) and mild intraprosthetic regurgitation. Images compatible with thrombi or pannus were discarded by this method. 3D-TEE from the atrial or surgeon's view, demonstrated with great realism bidisc asynchrony, with adequate movements of the medial disc and complete immobility of the lateral one (**Figure 3**), thus configuring the origin of the prosthetic dysfunction in this patient.

**Authors' contribution.**

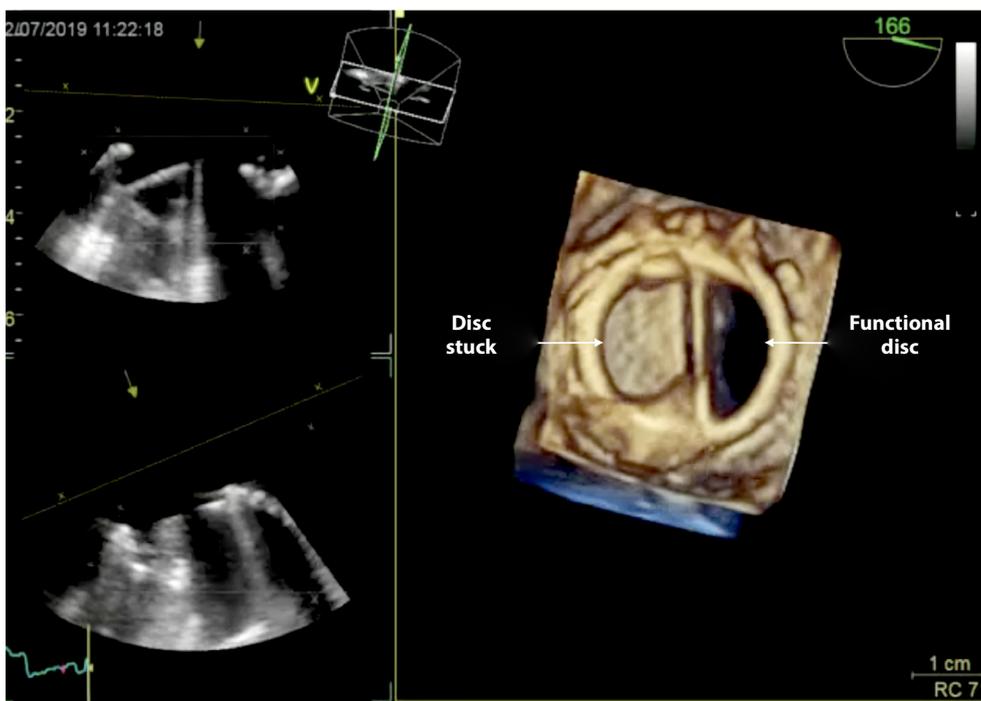
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**Figure 1.** Transthoracic echocardiography. Transprosthetic mitral gradient.



**Figure 2.** Transesophageal echocardiography at mid esophageal level in diastole. Color Doppler in mitral prosthesis



**Figure 3.** 3D transesophageal ultrasound at mid esophageal level in diastole. Two-disc mitral prosthesis.

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## References

1. Otto CM, Nishimura RA, Bonow RO, Carabello BA, Erwin III JP, Gentile F, et al. 2020 ACC/AHA Guideline for the Management of Patients with Valvular Heart Disease: Executive Summary: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines [published correction appears in *Circulation*. 2021 Feb 2;143(5): e228] [published correction appears in *Circulation*. 2021 Mar 9;143(10): e784]. *Circulation*. 2021;143(5):e35-e71. doi:10.1161/CIR.0000000000000932
2. Tsang W, Weinert L, Kronzon I, Lang RM. (2011). Three-dimensional echocardiography in the assessment of prosthetic valves. *Rev Esp Cardiol*. 2011; 64(1): p.1–7. <https://doi.org/10.1016/j.recesp.2010.09.003>