Severe mitral regurgitation due to perforation of the mitral anterior leaflet

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We present a case of a 75-year-old male with a worsening dyspnea during the last month. Transthoracic echocardiography revealed a severe mitral regurgitation. Transesophageal echocardiography was evident of a 6 mm defect of the mitral anterior leaflet at the region of the anteromedial A1 and medial A2 scallops probably due to perforation, which caused a significant regurgitant jet as documented by the presence of a convergence flow over the 'hole'. As the patient had a prolonged fever of undetermined origin one and a half months ago, perforation of the mitral anterior leaflet must at least be considered to be of an infective origin.

KEYWORDS
Mitral valve; Regurgitation; Endocarditis; Perforation; Transesophageal echocardiography

A male 75 years old was admitted in an Internal Medicine Department because of intermittent fever of unknown origin. Fever started 10 days ago, reaching up to 38.5°C every afternoon, without any other significant symptom. Thorough clinical and laboratory examinations were unremarkable. Six consecutive blood cultures were negative. Imaging modalities, including transthorasic and transesophageal echocardiography, revealed normal findings. The patient received ciprofloxacin and ceftriaxone for 15 days and became completely asymptomatic.

One month later, he was admitted in our department because of a worsening dyspnea NYHA II–III. A harsh 3/6 systolic murmur was audible at the apex. Transthoracic echocardiography revealed severe mitral regurgitation. Transesophageal echocardiography was evident of a 6-mm defect of the mitral anterior leaflet at the region of the anteromedial A1 and medial A2 scallops (Figure 1A, arrow) probably due to perforation (see Video 1), which caused a significant regurgitant jet as documented by the presence of a convergence flow over the 'hole' (Figure 1B, arrow). It is remarkable that there is also a small regurgitant jet through the aortic valve which also passes through the 'hole' of the anterior mitral leaflet (see Video 2). The rest of the mitral valve is completely normal and intact as documented in midesophageal 4-chamber and 2-chamber views (Figures 2 and 3, respectively). Mitral valve repair with a pericardial patch was planned.

Figure 1 (A) Midesophageal 5-chamber view. A 6-mm defect of the mitral anterior leaflet at the region of the anteromedial A1 and medial A2 scallops (arrow) probably due to perforation. (B) Midesophageal 5-chamber view. Significant regurgitant jet as documented by the presence of a convergence flow over the hole of the mitral anterior leaflet (arrow).

Figure 2 Midesophageal 4-chamber view. The rest of the scallops of the mitral valve leaflets are normal.
Mitral leaflet perforation is a rare cause of mitral regurgitation usually following infective endocarditis. In this case, a previous episode of endocarditis was not documented. However, taking into consideration the very recent history of the prolonged illness with fever and the normal transthoracic and transesophageal echocardiography, perforation of the mitral anterior leaflet must at least be considered to be of an infective origin.

Supplementary material

Supplementary material associated with this article can be found in the online version.

Figure 3  Midesophageal 2-chamber view. The rest of the scallops of the mitral valve leaflets are normal.