

# Severe mitral regurgitation resulting from perforated leaflet

## Clinical Case Portal

### Date of publication:

16 Mar 2009

### Authors:

Chrzanowski, Lukasz , MD,

### Authors details:

Karina Wierzbowska-Drabik, MD, Jaroslaw D. Kasprzak, MD, PhD.

### Contact:

II Chair of Cardiology, Medical University of Lodz, Poland.  
91-347 Lodz, 1/5 Kniaziewiczza St.

### Abstract

A 47-year-old patient with hypertension and polycythemia vera was hospitalized because of acute heart failure presenting as pulmonary oedema. Medical history revealed also a respiratory influenza-like infection with an estimated onset one month ago, and deep vein thrombosis of right lower limb.

### Case Report

Transthoracic echocardiography (TTE) demonstrated systolic protrusion of the anterior leaflet central segment and severe mitral regurgitation (MR) with eccentric jet (Fig. 1, 2 and 3). The severity of regurgitant lesion was reflected by holosystolic reversal flow in pulmonary vein, rapid mitral inflow with maximal velocity of 1.5 m/s and E/A ratio of 2.0.

TTE revealed also concomitant prolapse of tricuspid valve with moderate regurgitation, elevated systolic pulmonary artery pressure (78 mmHg), significant left atrial enlargement (50 mm in long axis view) and

hyperkinetic systolic function of the left ventricle with ejection fraction of 68%.

Real-time three dimensional (RT3D) transthoracic echocardiography by full volume mode (Vivid 7 Dimension, GE Vingmed) enabled obtaining a “surgical view” of mitral valve and was suggestive of anterior leaflet perforation (Fig. 4 and Fig. 5).

To accurately assess the mechanism of mitral regurgitation, transesophageal study (TEE) was performed. It showed an aneurysmal deformity of anterior leaflet central segment with coexisting perforation (Fig. 6 and 7). Severe mitral regurgitation had complex orifice, including anterior leaflet perforated area and impaired coaptation with posterior leaflet (Fig. 8).

## Conclusion

Even though the infective etiology of the disease was very likely, it has not been definitely established during further management, potentially due to an extended clinical course and prior antimicrobial treatment.

Because of substantial destruction of mitral valve and severe regurgitation producing significant haemodynamic abnormalities the patient was referred for surgical treatment. In coronary angiography no significant lesions were found, although the patient experienced an episode of chest pain related to transient coronary artery spasm.

In a few days the patient underwent implantation of mechanical prosthesis in mitral position. Intraoperative findings were fully consistent with echocardiographic imaging. One-year clinical follow-up was uneventful.

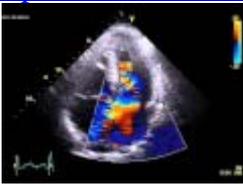
Video 1 :

[Echocardiographic parasternal long axis image](#)



Video 2 :

[Apical four-chamber](#)



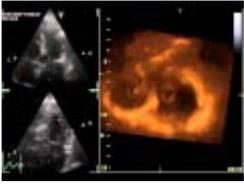
Video 3 :

[Short axis image](#)

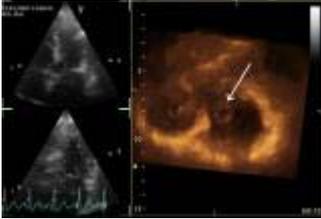


Video 4 :

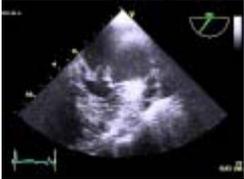
[RT3D transthoracic echocardiography](#)



**Fig. 1 :**  
[RT3D echocardiographic image](#)



**Video 5 :**  
[Transesophageal echocardiographic imaging](#)



**Video 6 :**  
[Transesophageal echocardiographic image](#)



**Video 7 :**  
[Transesophageal echocardiographic imaging with color Doppler](#)

