A 57-year-old woman presented to our emergency room complaining of palpitations and crescent dyspnea. She had carried a tilting-disk mitral valve prosthesis since 1985. The ECG showed atrial tachycardia with 2:1 conduction (Figure 1). Her arterial pressure was 75/50 mm Hg, but signs of hypoperfusion were not apparent. On heart auscultation, prosthetic clicks were erratically audible. Trans-thoracic and transesophageal echocardiograms were performed (Figure 2A). They demonstrated that the valve opened once between 3 and 4 beats (Movies I and II). This point was confirmed by means of an invasive arterial pressure line showing alternant effective beats (Figure 1). After sinus rhythm was restarted with one 150-J shock, high gradients and velocities remained. After a thorough Doppler search, a high-pressure half-time of the ineffective beats was shown (Figure 2B).

Cine fluoroscopy is superior to echocardiography in identifying disk motion, whereas Doppler study allows the measurement of gradients and areas. Cine fluoroscopy and transthoracic echocardiograms are quick, effective, and complementary diagnostic tools to diagnose prosthetic valve thrombosis in most patients, but transesophageal echocardiogram remains the gold standard technique in selected cases.

The patient underwent immediate urgent surgery (Figure 3), and the tilting-disk prosthesis was replaced by a bileaflet one. The surgeon reported the presence of a large amount of pannus in the ventricular side of the prosthetic valve, which explained the intermittent trapping of the disk. Patient outcome was uneventful. In-hospital stay was 8 days.

Trapping and acute immobilization of a tilting-disk heart valve are very uncommon complications that require urgent surgery. Other described materials that can cause disk trapping are thrombus, strands of chordal tissue, suture material, and ventricular myocardium.4

Disclosures
None.

References
Figure 1. ECG presenting an atrial tachycardia at 115 bpm and the invasive arterial line (below) showing pulse alternance.
Figure 2. A, Doppler continuous mode of the mitral inflow showing a high mitral valve gradient (medium, 23.5 mm Hg; normal, 4.1±1.6 mm Hg) and high velocity (3.37 m/s; normal, 1.7±0.3 m/s). B, Doppler continuous mode of the mitral inflow with a first curve showing an increased high-pressure half-time (left) and a second curve showing the opening of the prosthesis (high-pressure half-time normal), corresponding to an ineffective and an effective beat, respectively.
Figure 3. Intraoperative image. Tilting mitral valve is shown.
Intermittent Trapping of a Tilting-Disc Mitral Prosthesis
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