Acute thrombosis of a prosthetic mitral valve

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Received 20 April 2005; received in revised form 5 July 2005; accepted 27 July 2005
Available online 2 November 2005

Keywords
Acute thrombosis; Prosthetic mitral valve; Transoesophageal echocardiography

Abstract
We report the case of a patient who was transferred to our hospital with acute thrombosis of a prosthetic mitral valve. Her admission INR was subtherapeutic. The transoesophageal echocardiographic images are presented. The patient underwent urgent reoperation and made a good recovery.

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Case presentation

A 53-year-old lady was urgently transferred to our hospital on Christmas Day 2004, her 53rd birthday. She had undergone a mitral valve replacement for mitral stenosis with a Bjork—Shiley unileaflet valve 12 years previously. She had been asymptomatic until 24 h before admission when she presented to her local hospital with sudden shortness of breath. A transthoracic echocardiogram there had raised the suspicion of prosthetic mitral valve thrombosis. She was given intravenous diuresis and sent to our hospital for further management.

On arrival the patient was severely breathless, sitting upright, and unable to speak. Clinical findings were consistent with severe pulmonary oedema. Her admission INR was low at 1.41. Transthoracic echocardiographic imaging was impossible due to the patient’s breathlessness and obesity. She was becoming exhausted so we sedated, intubated, and ventilated her.

A transoesophageal echocardiogram (TOE) was then performed immediately and revealed a prosthetic mitral valve with restricted leaflet mobility and spontaneous contrast (“smoke”) in the left atrium. There was an echodense mass (9 × 21 mm) with reduced mobility on the atrial surface of the valve suggestive of a thrombus (Fig. 1). This was subsequently confirmed at operation. Color Doppler imaging with continuous wave (CW) flow demonstrated high transmitral velocities with a very
elevated mean pressure gradient of 18 mm Hg (Fig. 2).

She underwent urgent surgery. The prosthetic valve and thrombus were removed and replaced by a 25 mm bileaflet ATS valve. Unfortunately, the thrombus was not photographed at the time of operation as this was an urgent case on Christmas Day and the medical photographer could not be summoned in time. The patient made an uncomplicated recovery and was discharged on her 15th postoperative day. She is currently asymptomatic with a well-controlled INR.

Discussion

Acute prosthetic valve thrombosis (PVT) accounts for 1–6% of postoperative complications. It is most frequently due to faulty anticoagulation but has also been related to pannus formation. Prompt echocardiographic diagnosis is essential. The choice of immediate treatment remains controversial and includes reoperation, videoassisted thrombectomy, and thrombolysis. In a review of 200 PVT cases, thrombolysis is advised for high surgical risk patients with left-sided acute PVT. Thrombolysis is discontinued if there is no haemodynamic improvement and operation is indicated. The predicted probability for reoperation in prosthetic mitral valve thrombosis is higher with large (>27 mm) bileaflet and older model (caged ball-disk) valves and lower with smaller models. Mortality at reoperation ranges between 0 and 69%, depends largely on functional class, and is highest in patients presenting in cardiogenic shock. Difficulties in establishing correct diagnosis and delay in immediate action contribute to severe clinical condition on admission.

References