Knock knock knocking on: how to open stuck mitral valve prosthesis

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A 40-year-old man with congenital atrioventricular block and dilated cardiomyopathy presented with rapid worsening of dyspnoea and syncopal attacks during exercise. He had undergone mitral valve replacement 14 years ago and the pacemaker system was upgraded to a biventricular device 7 years ago. Echocardiography revealed severe left ventricular dysfunction (ejection fraction 25%). One disc of the prosthesis was stuck in closed position confirmed by fluoroscopy (Panel A) resulting in mean valve gradient of 8 mmHg (Panel B). Effective anticoagulation combined with aspirin was unsuccessful. New valve surgery was unacceptable and patient was referred for heart transplantation.

Severe symptoms led us to perform a percutaneous mobilization of the stuck prosthesis disc during full anticoagulation. After transseptal puncture, a deflectable ablation catheter was advanced (e.g. through a SL2 sheath) against the stuck disc which was knocked until normal disc motion could be confirmed in fluoroscopy with a decrease in pressure gradient (Panels C–E).

The symptoms ameliorated quickly and patient could be discharged. At 5 months of follow-up visit, the patient was free of syncope, but exercise tolerance had remained impaired (NYHA2–3). Echocardiography showed fully mobile discs with a mean valve gradient of 5 mmHg. Later, a similar disc malfunction with rapid deterioration of the condition was observed, but the patient could be discharged after successful disc liberation.

Our case demonstrates that stuck mitral valve prosthesis can be safely and easily mobilized by catheter manipulation through transseptal route. This quick approach may be helpful first aid in acute life-threatening situations.

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