Progressive breathlessness post mitral valve replacement

Conor McQuillan *, Judith Tweedie

Belfast Health & Social Care Trust, United Kingdom

Received 27 July 2015; accepted 23 February 2016
Available online 8 March 2016

KEYWORDS
Paravalvular leak; Mitral valve replacement; Endocarditis

Abstract Paravalvular leak occurs in 1–5% patients following surgical valve replacement and is associated with complications including haemolysis, heart failure and endocarditis. Re-do surgery is difficult with mortality rates approaching 16%. Percutaneous closure of mitral valve leaks with occluder devices is a viable alternative to repeat sternotomy; however, clinicians should be aware of contra-indications which include active endocarditis. Management of paravalvular leak is complex and success requires multi-disciplinary approach with cardiothoracic surgeons, clinical, imaging and interventional cardiologists.

© 2016 Egyptian Society of Cardiology. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

A 61-year-old gentleman presented to hospital with fatigue and marked exertional dyspnoea (NYHA class III). He had undergone mitral valve replacement the previous year for severe mitral regurgitation with a size 33 mm CarboMedics pros thesis. In childhood he had undergone surgical repair of a secundum atrial septal defect.

On examination he was haemodynamically stable and in controlled atrial fibrillation. Auscultation revealed a prosthetic first heart sound and a normal second heart sound, and a grade 2/6 pansystolic murmur with a grade 1/6 diastolic murmur. The patient was euvoaemic and with a normal respiratory system examination.

Chest radiograph demonstrated cardiomegaly but no pulmonary venous congestion. Electrocardiogram confirmed controlled atrial fibrillation. C-reactive protein was elevated at 60 mg/L although he was not overtly septic. Bilirubin was 33 µmol/l and haemoglobin concentration of 109 g/L so valvular haemolysis was considered.

During the admission the patient became febrile. Multiple blood cultures grew a methicillin sensitive staphylococcus aureus. The patient proceeded to transoesophageal echocardiography (TOE) which confirmed a small vegetation on the sewing ring but also demonstrated significant paravalvular regurgitation.

Live 3-D reconstruction allowed the exact size and shape of the leak to be identified as percutaneous approach to paravalvular leak closure was being considered. After multiple multidisciplinary team discussion, the consensus was for a surgical approach to paravalvular leak closure given the recent history of endocarditis. This would also facilitate surgical valve replacement at the time, should it be required (see Figs. 1–3).

Paravalvular leak occurs in 1–5% patients following surgical valve replacement and is associated with complications including haemolysis, heart failure and endocarditis. Paravalvular leak is more likely to occur early following valve replacement, while longer term paravalvular leaks can occur in the setting of endocarditis. Re-do surgery is difficult with mortality rates approaching 16%. Percutaneous closure of
mitral valve leaks with occluder devices is a viable alternative to repeat sternotomy; however, clinicians should be aware of contra-indications which include active endocarditis. Management of paravalvular leak is complex and success requires multi-disciplinary approach with cardiothoracic surgeons, clinical, imaging and interventional cardiologists.

Conflict of interest

The authors declare that there are no conflict of interests.

References


