

A distinctive posterior mitral valve infective endocarditis and a large mycotic aneurysm

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Case presentation

A 72-year-old man with a background of hypertension and atrial fibrillation presented with confusion, lumbar back pain and pyrexia. Clinical examination identified a pansystolic murmur radiating to the left axilla.

Blood results were significant for elevated total white cell count, neutrophilia, thrombocytopenia and a C-reactive protein of 229 mg/L. Blood cultures were alerted as growing beta haemolytic group B streptococcus.

CT scanning of the abdomen and pelvis demonstrated a right renal and splenic infarct.

Transoesophageal echocardiography revealed a highly distinctive vegetation. Long, highly mobile and whip-like, the vegetation attached to the base of the P1 scallop of the posterior mitral valve leaflet, exhibiting prolapse into the left ventricle during diastole. During systole the vegetation extended maximally, almost reaching the posterior wall of the left atrium (Fig 1).

Colour flow doppler disclosed that this vegetation was associated with severe mitral regurgitation, though with flow convergence away from the coaptation zone, within the body of the posterior leaflet (Fig 2).

At surgery a large vegetation was identified on P1 with a perforation and severe mitral regurgitation. This area was debrided and patched with pericardium. A size 34 Cosgrove annuloplasty system was used to complete repair of the mitral valve. A Mini Maze procedure and left atrial appendage occlusion with the Atricure device, as well as a PFO closure, were concurrently performed.

The patient completed a 6-week course of antibiotics with benzylpenicillin from the time of his surgery; he felt well and was discharged home shortly after completing this course.

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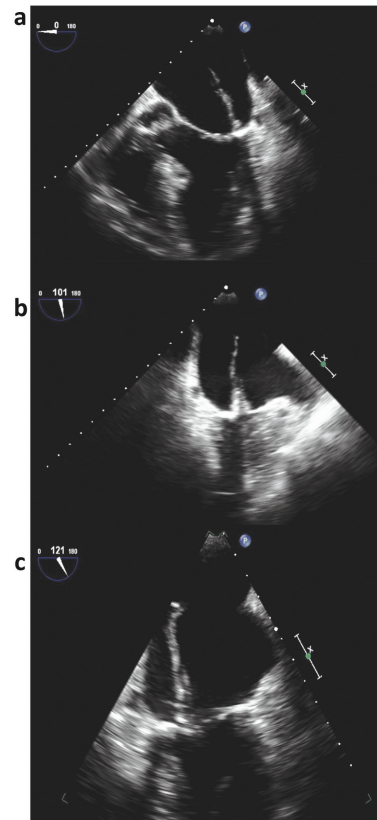


Fig 1. 2D still image of mitral valve showing vegetation arising from the P1 scallop at image plane angle 0° (a), 101° (b) and 121° (c).

Three weeks post-discharge, the patient represented to the hospital with right upper quadrant and epigastric pain. A CT mesenteric angiogram identified a thick-walled enhancing mycotic aneurysm arising from the superior mesenteric artery, measuring 3.1 cm × 3 cm in axial dimension and 4.1 cm in craniocaudal dimension, with surrounding mesenteric fat stranding. A further mycotic aneurysm was identified in the right hepatic artery. The patient was treated with embolization of these mycotic aneurysms via coiling in the interventional radiology department (Fig 3).

Following completion of the above procedure the patient was discharged to home and has been well at follow-up appointments.

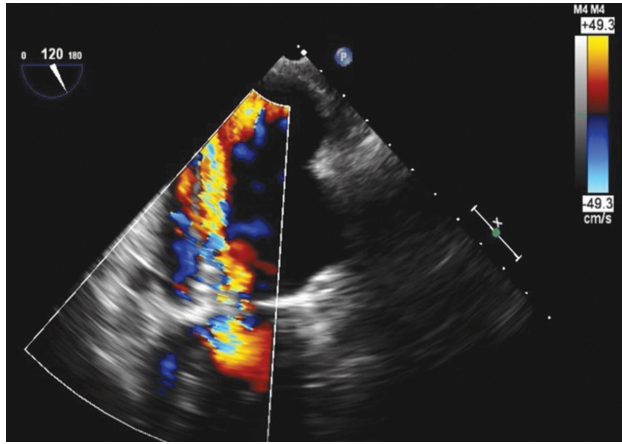


Fig 2. 2D still image of mitral valve with colour flow Doppler.

Discussion

This case outlines a complex infective endocarditis with perforation of the posterior mitral valve leaflet, renal and splenic infarctions and a second presentation due to development of visceral mycotic aneurysms.

Perforation is characterised by interruption of endocardial tissue continuity. Colour flow Doppler echocardiography will demonstrate blood flow through the perforation. As occurred in this case, a perforation may be repaired with autologous or bovine pericardial patch.¹

Increased size and mobility of a vegetation is the strongest independent predictor of embolic risk. Other factors associated with increased risk of embolism include location of the vegetation on the mitral valve, multivalvular IE and particular organisms (*S aureus*, *Candida spp*).¹

Mycotic aneurysms are typically thin walled, friable and have a high risk of rupture. They are most commonly found in the intracranial circulation. Treatment options include surgical or endovascular intervention. In some cases, mycotic aneurysms may resolve during antimicrobial treatment.¹ ■

Reference

- 1 Habib G, Lancellotti P, Antunes MJ *et al*. 2015 ESC Guidelines for the management of infective endocarditis: The Task Force for the Management of Infective Endocarditis of the European Society of Cardiology (ESC). *Eur Heart J* 2015;36:3075–128.

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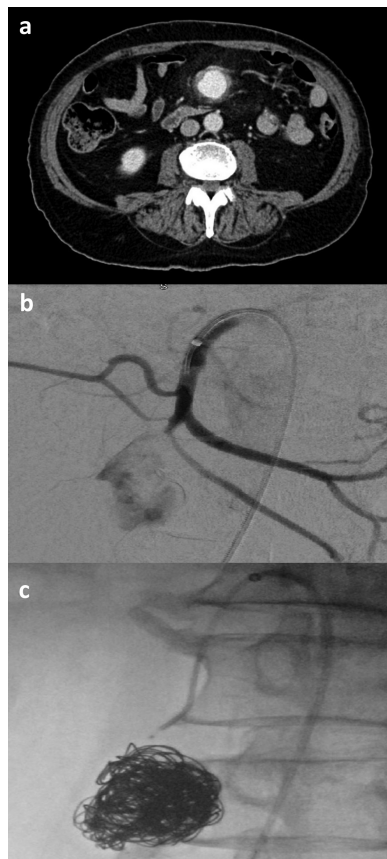


Fig 3. (a) CT abdomen showing the large mycotic aneurysm arising from the proximal ileal branch of the SMA. (b) Selective angiogram of the SMA during embolization procedure. (c) Coiled mycotic aneurysm.