

IMAGES AND VIDEOS

Rapid progression of *Staphylococcus lugdunensis* mechanical prosthetic valve endocarditis

Darwish I Naji MD, Alexander Pak MD, Jamie Lawless MD and Michael L Main MD

Saint Luke's Mid America Heart Institute, Kansas City, Missouri, USA

Correspondence should
be addressed
to M L Main
Email
mmain@saint-lukes.org

Summary

A 66-year-old woman with a remote history of mitral valve replacement (mechanical bileaflet valve) due to rheumatic heart disease presented with symptoms consistent with infectious endocarditis. Subsequent blood cultures grew

Staphylococcus lugdunensis. A transesophageal echocardiogram demonstrated large vegetations on the atrial aspect of the mitral valve, with a Doppler derived mean pressure gradient of 13 mmHg (Fig. 1 and Video 1). Appropriate i.v. antibiotics were initiated and a surgical consultation was

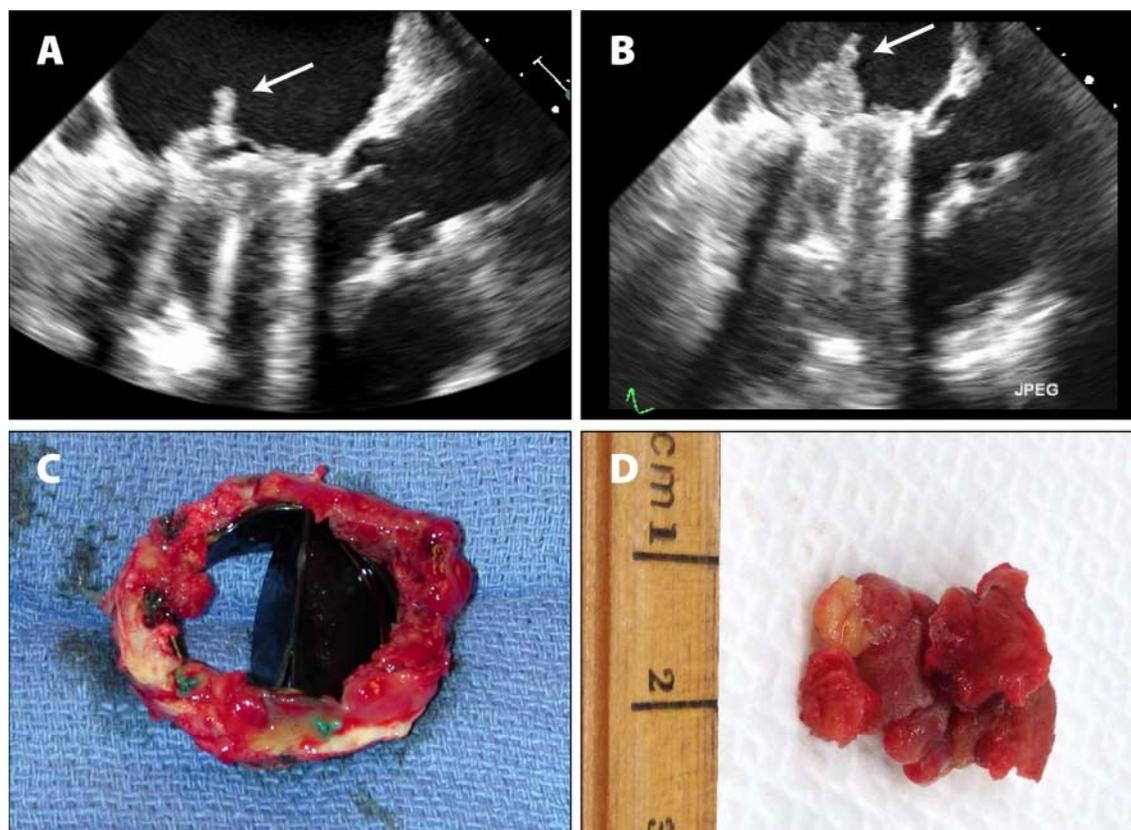


Figure 1

(A) Initial transesophageal echocardiogram reveals a large vegetation on the atrial aspect of the mechanical mitral valve (arrow). (B) Repeat transesophageal echocardiogram 6 days later demonstrates a significant increase in size of the vegetation with valve obstruction (arrow).

Note spontaneous echo contrast in the left atrium due to hemostasis. (C) Photograph of the explanted valve with vegetation surrounding the atrial aspect of the annular ring. (D) Photograph of the large vegetation seen in B on the atrial aspect of the mechanical valve.

Video 1

Initial transesophageal echocardiogram reveals a large vegetation on the atrial aspect of the mechanical mitral valve. Download Video 1 via <http://dx.doi.org/10.1530/ERP-15-0017-v1>.

Video 2

Repeat transesophageal echocardiogram 6 days later demonstrates a significant increase in size of the vegetation with valve obstruction. Note spontaneous echo contrast in the left atrium due to hemostasis. Download Video 2 via <http://dx.doi.org/10.1530/ERP-15-0017-v2>.

obtained. A second transesophageal echocardiogram was performed 6 days later after she developed acute respiratory failure secondary to pulmonary edema, requiring mechanical ventilation (Video 2). This examination revealed a significant increase in size of the mitral vegetations, with the largest measuring 2.2 cm in maximum dimension, with new complete obstruction of one mechanical leaflet, and with dense spontaneous echo contrast secondary to prosthetic mitral valve obstruction. She subsequently underwent urgent open heart surgery and redo mitral valve replacement with a bioprosthetic valve. Valve obstruction due to large vegetations occurs rarely with infectious endocarditis and is more common with prosthetic (in comparison with native) valves (1, 2, 3). Serial transesophageal echocardiography imaging was helpful in diagnosing this life-threatening complication.

Declaration of interest

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

Funding

This research did not receive any specific grant from any funding agency in the public, commercial or not-for-profit sector.

Patient consent

Written consent was obtained.

Author contribution statement

D I Naji was first author of the manuscript. A Pak and J Lawless were named physicians of the patient and reviewed the manuscript for content. M L Main was a named physician of the patient, reviewed the manuscript for content and served as senior author.

References

- 1 Tiong IY, Novaro GM, Jefferson B, Monson M, Smedira N & Penn MS 2002 Bacterial endocarditis and functional mitral stenosis: a report of two cases and brief literature review. *Chest* **122** 2259–2262. (doi:10.1378/chest.122.6.2259)
- 2 Lewis JF, Peniston RL, Randall OS, Spencer J & Sheller LM 1987 Tricuspid stenosis in prosthetic valve endocarditis. Diagnosis by Doppler echocardiography. *Chest* **91** 276–277. (doi:10.1378/chest.91.2.276)
- 3 Kreisel D, Pasque MK, Damiano RJ, Jr, Medoff G, Kates A, Kreisel FH & Lawton JS 2005 *Bartonella* species-induced prosthetic valve endocarditis associated with rapid progression of valvular stenosis. *Journal of Thoracic and Cardiovascular Surgery* **130** 567–568. (doi:10.1016/j.jtcvs.2004.12.035)

Received in final form 4 May 2015

Accepted 4 June 2015