CARDIAC IMAGING QUIZ

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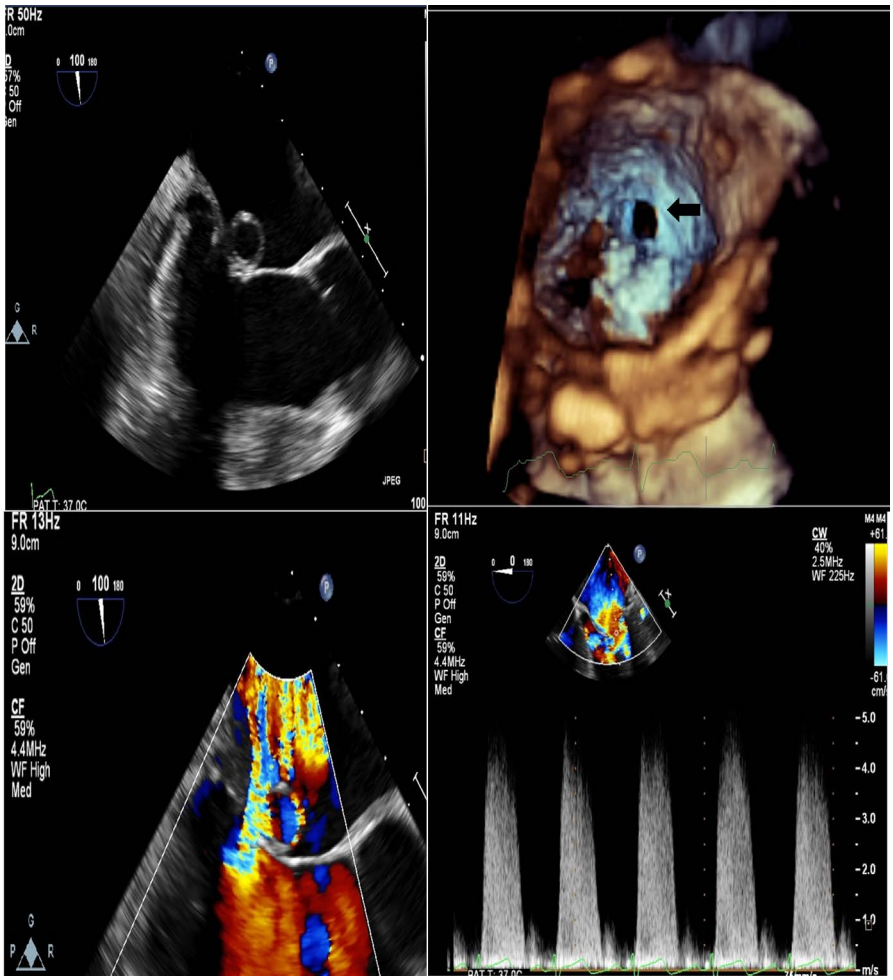
DOI: https://doi.org/10.24170/22-3-7665



QUESTION: What is the diagnosis?

A. Infective endocarditis.

B. Marantic endocarditis.

C. Mitral valve prolapse.

D. Mitral valve blood cyst.

ANSWER

(A) Infective endocarditis.

These echocardiographic images belong to a 30-year-old male who presented with heart failure. No relevant past medical history was noted. No clinical features of infective endocarditis (IE) were noted.

Transoesophageal echocardiogram at mid-oesophageal level shows anterior (A3 scallop) mitral leaflet perforation with no obvious vegetation (top left image). This was confirmed on a three-dimensional enface view of the mitral valve (top right image). The leaflet perforation is characterised by a defect in the leaflet tissue through which flow is observed (bottom left image). Additionally, diffuse thickness of the posterior mitral leaflet is noted (top left image). There is concurrent mitral regurgitation (bottom left and right images). Blood culture was negative for IE, which was suspected.

Echocardiographic characteristics of IE form part of the Dukes major diagnostic criteria. Echocardiography is the primary imaging modality for diagnosing IE and evaluating the structural and functional damage to cardiac tissues. Key echocardiographic findings for diagnosing and assessing local complications of IE include the characteristics and size of vegetations, evidence of valvular destruction (leaflet perforation in this case), and perivalvular complications, such as abscesses and/or pseudoaneurysms – often accompanied by a pericardial effusion.

In certain clinical situations, additional imaging techniques, such as computed tomography, magnetic resonance imaging, and nuclear imaging, are necessary to confirm or rule out IE, assess the extent of cardiac involvement, and identify extracardiac complications. These modalities can also offer valuable insights for optimising patient management.

Each imaging technique has its strengths and limitations. The choice of the most appropriate strategy depends on the availability of resources and expertise. However, when clinically indicated, a multimodality imaging approach is crucial and should be actively promoted by the endocarditis team for patients with suspected IE.

Microbiology consultation is essential in cases of suspected IE (with negative blood cultures after 48 hours). A structured diagnostic approach includes targeted blood cultures followed by serological testing for specific pathogens and autoimmune markers based on clinical context and local epidemiology. Surgical specimens should undergo culture, histology, and molecular analysis (16S/18S rRNA sequencing) to detect pathogens.

BIBLIOGRAPHY

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