Advances in Clinical Medical Research and Healthcare Delivery

Volume 3 | Issue 3 Article 6

2023

Persistent Foci of Infection: A Case of Two Mycotic Aneurysms Separated in Time in A Patient with Infective E. Faecalis Endocarditis

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Recommended Citation

Stone JC, Thompson J, Hatem J, Basha E. Persistent Foci of Infection: A Case of Two Mycotic Aneurysms Separated in Time in A Patient with Infective E. Faecalis Endocarditis. *Advances in Clinical Medical Research and Healthcare Delivery*. 2023; 3(3). doi: 10.53785/2769-2779.1166.

ISSN: 2769-2779

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Keywords

Infective endocarditis, mycotic aneurysm

Conflict of Interest Statement

The authors of this text report no conflicts of interest.

IMAGING-VIDEO-AUDIO MEDIA

Persistent Foci of Infection: A Case of Two Mycotic Aneurysms Separated in Time in a Patient with Infective *E. faecalis* Endocarditis

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Abstract

This is a case report of a patient who presented with mycotic aneurysms of two different blood vessels at separate hospital visits following a diagnosis of infective endocarditis.

Keywords: Infective endocarditis, Mycotic aneurysm

1. Introduction

Infective endocarditis (IE) is a rare but serious medical condition which can present with a wide array of complications. Several bacteria have been implicated as the cause of IE, with *Enterococcus faecalis* being the third most common cause.[1] Some factors which place patients at risk for *E. faecalis* IE, specifically, are being a male, having a pacemaker or prosthetic valve, and acquiring the infection from the community.[2] We describe here a case of IE with a difficult hospital course, highlighting some of the numerous complications that can result from IE. Namely, this case involved septic emboli and mycotic aneurysms (see Figs. 1 and 2).

2. Case presentation

A 61-year-old male with a past medical history of obstructive sleep apnea and benign prostatic hyperplasia presented to the emergency department with shortness of breath, dyspnea on exertion, and progressively increasing bilateral peripheral edema in the legs. Blood cultures grew *E. faecalis* and transesophageal echocardiogram revealed a vegetation of the mitral valve. The patient was diagnosed with heart failure secondary to infective endocarditis. He was placed on antibiotics and underwent mitral valve replacement surgery. After a successful procedure and uneventful immediate post-operative course, he was discharged home.

The patient returned the next day with acute right leg swelling and pain that developed overnight. A Doppler ultrasound of the leg revealed a large, irregular, multi-lobulated pseudoaneurysm projecting posteriorly from the popliteal artery, suspicious for a mycotic aneurysm secondary to infective endocarditis. Patient subsequently underwent surgical popliteal aneurysm repair and did well.

Several days later, the patient began to experience right flank pain. A CT angiogram of the abdomen was ordered to rule out a renal abscess. Imaging was negative for a renal abscess but did visualize, however, a new, lobulated aneurysm of the superior mesenteric artery, likely consistent with an additional mycotic aneurysm.

Accepted 16 May 2023.
Available online ■ ■ ■

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https://doi.org/10.53785/2769-2779.1166

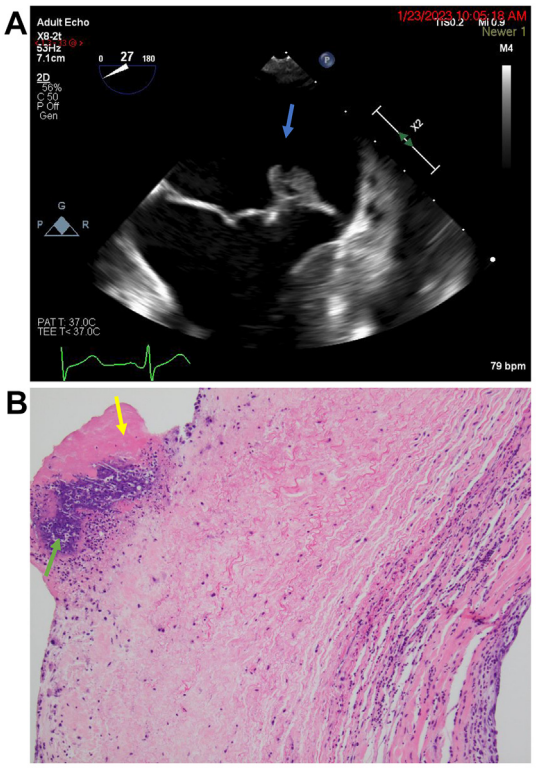

Fig. 1. A.Transesophageal echocardiogram image of the mitral valvular vegetation (blue arrow), with heterogenous echogenicity on the atrial aspect of a mitral leaflet. B. Pathology image of the mitral valve, prepared with hematoxylin & eosin (H&E) stain and visualized at high power (200x). This image shows the vegetation on the left side of the image, with associated necrosis (yellow arrow) and inflammatory infiltrate (green arrow).

3. Discussion

Infective endocarditis is a rare medical condition that can be life-threatening. It is often associated with wide-spanning complications. The most common complications are cardiac, including heart failure, perivalvular abscess, and pericarditis. Other manifestations span several body systems, such as metastatic infection (septic embolization, mycotic aneurysm), neurology (stroke, seizures), renal (glomerulonephritis, acute renal failure), musculoskeletal (osteomyelitis, septic arthritis), and pulmonary (pneumonia, pleural effusion).[1,3]

Mycotic aneurysms are a rare IE complication. A mycotic aneurysm is a condition in which the wall of a blood vessel expands secondarily to an infectious process.[4] On imaging, mycotic aneurysms appear as loculated outpouchings from vessel walls, demonstrate eccentricity in the contour of the outer rim as compared to a normal blood vessel wall, and often create surrounding edema or gas.[5] Some characteristics of IE vegetations that increase propensity for developing mycotic aneurysms include large size, increased mobility, and mitral valve location (mitral vegetations are more likely to embolize than aortic vegetations); septic emboli are believed to be the predisposing factor of their development.[6]

Given the relative frequency with which complications from IE occur, and the ability of such to cause life-threatening sequelae, it is important to

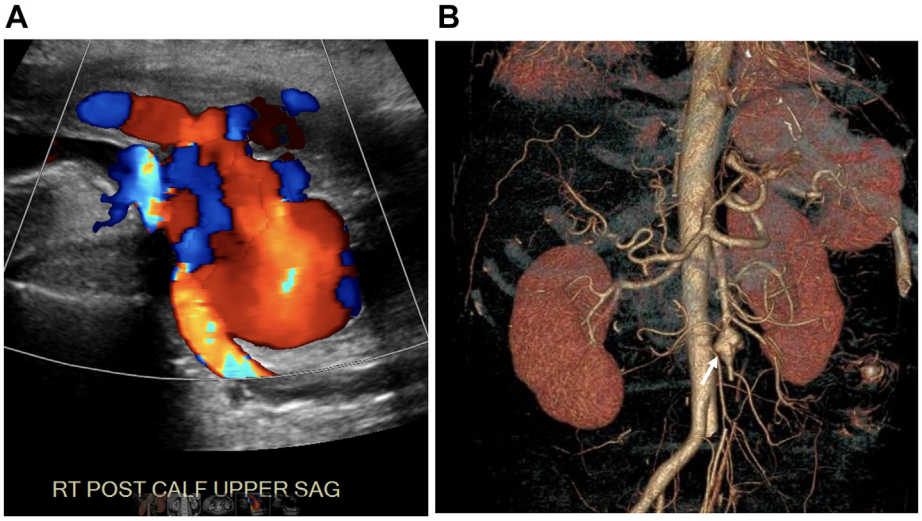

Fig. 2. A. Doppler ultrasound image of the right upper calf in sagittal view. This image highlights the popliteal artery aneurysm (color Doppler with yin-yang appearance from blood flow into and out of the aneurysm). B. 3D reconstruction of a computed tomography angiography image of the superior mesenteric artery (SMA) aneurysm (white arrow). This image highlights the eccentric, multilobulated appearance to the aneurysm.

continually evaluate our patients for any signs of evolving foci of infection from infective endocarditis.

Conflict of interest

There are no conflicts of interest.

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