

Case 694 -- A 57-year-old female with endocarditis and brain abscess

CLINICAL HISTORY

Chief Complaint

Fever.

History of Present Illness

This 57 year-old female patient, 23 months prior to her admission, was diagnosed with *Streptococcus pyogenes* group septic arthritis, diagnosed by culture of synovial fluid at an outside hospital. She was started on vancomycin, and later switched to penicillin, and gentamycin and had debridement of her right knee. Subsequently, she developed blurry vision, due to bilateral endophthalmitis which was treated with fluconazole and moxifloxacin and transferred to our hospital. Six blood cultures drawn over her stay in our hospital were negative. However, she was noticed to have a new heart murmur, transesophageal echocardiogram (TEE) suggested a mitral valve vegetation and she underwent a mitral valve repair for presumed mitral valve endocarditis with placement of an annuloplasty band. Routine, fungal and AFB cultures of the vegetation showed no growth.

Six months after the surgery, she presented with worsening symptoms of shortness of breath and dyspnea on exertion. An echocardiogram revealed severe mitral stenosis with pulmonary hypertension and moderate to severe tricuspid regurgitation necessitating replacement of her mitral valve with a mechanical valve, nine months after her first surgery. Two blood cultures drawn over her stay in our hospital were negative. Histopathological evaluation of the mitral valve showed fibrosis, calcifications and chronic inflammation suggesting old rheumatic valvular disease. No material was submitted for culture.

Thirteen months after the second surgery, she presented to her PCP with complaints of confusion, left-sided weakness, and a left facial droop. Imaging studies at the outside hospital demonstrated a 2.8 x 2.6 x 3.1 cm multiloculated, peripheral-enhancing, necrotic mass in right frontal lobe, thought to be consistent with necrotic neoplasm or abscess (Figure 1). A stereotactic brain biopsy was done and preliminary gram stain was negative for organisms. While in the operating room, a TEE was performed and showed echogenic densities consistent with perivascular abscess and dehiscence surrounding the mitral valve. The patient was transferred to our hospital for further management of recurrent endocarditis and right frontal lobe brain abscess. She was started on vancomycin, ceftriaxone and gentamycin and vancomycin was stopped later.

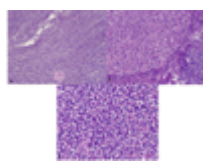


Figure 1

Two weeks after admission to our facility , her mitral valve was replaced for the third time because of prosthetic mitral valve endocarditis, 14 months after her second surgery. She was discharged after 8 days, but returned three days later with an elevated body temperature of 103 F. Two blood cultures as well as routine and fungal culture of the mitral valve vegetation were negative. Serologic studies and PCR for Bartonella sp., Coxiella, and Lyme disease were all negative as was a Legionella urinary antigen test and serology for Legionella pneumophila, serogroups 1-2,6 and 8. Histopathological evaluation of the mitral valve showed organizing fibrinopurulent exudate and gram and GMS stains were negative for microorganisms.

Past Medical History

1. Systemic lupus
2. Antiphospholipid syndrome.
3. Anticardiolipin antibodies
4. Hypothyroidism
5. Hypertension

At the present admission a transthoracic echocardiogram revealed a nondilated left ventricle with severely hypokinetic basal posterior and overall preserved systolic function, tilting disc prosthesis in the mitral position with normal motion and function with no vegetations seen. A TEE, done a week after admission, demonstrated a periprosthetic leak in the posterior lateral annular area with mitral regurgitation. and an increase in the thickness of the perivalvular area consistent with periannular abscess. A repeat TEE six days later suggested prosthetic mitral valve surrounded by inflammatory tissue and possible early abscess formation. Prosthesis did not appear to be loose. Two distinct mobile echodensities suggestive of vegetations were seen.

Ten blood cultures drawn over this admission were negative.

The patient once again was taken to the OR despite negative cultures and no sign of infection, due to the concern for the presence of an annular abscess. It was decided to proceed with early intervention of mitral valve replacement and sternotomy for the fourth time, 4 weeks after the third surgery.

Histology

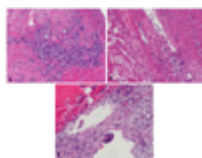


Figure 2

Fungal and bacterial cultures of the pericardial clot, pericardial patch and prosthetic mitral valve were negative.

Patient was started on gentamicin, cefepime and vancomycin. Vancomycin was later changed to daptomycin.

Following the negative cultures, the prosthetic valve was submitted to an outside laboratory for detection of bacterial 16S DNA. The bacterial PCR results showed the DNA of the organism detected with 16S rRNA gene primer set. The organism was identified by DNA detected with 16S ribosomal gene.

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