Rare Infective Endocarditis Caused by Dental Source due to Streptococcus Bovis Masquerading as Cardiac Failure

Ravish Patel  
_HCA Healthcare_, Ravish.Patel@hcahealthcare.com

Pratikkumar Vekaria  
_HCA Healthcare_, Pratikkumar.Vekaria@hcahealthcare.com

Devin Vaishnani  
_HCA Healthcare_, Devin.Vaishnani@hcahealthcare.com

Johnnie Mao  
_HCA Healthcare_, Johnnie.Mao@hcahealthcare.com

Asif Shah  
_HCA Healthcare_, Asif_Shah@teamhealth.com

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Ravish Patel, MD; Pratikkumar Vekaria, MD; Devin Vaishnani, MD; Johnnie Mao, MD; Asif Shah, MD; Tejas Raiyani, MD | HCA

Introduction

- Infective endocarditis (IE), is an infection caused by bacteria or less common by fungi, that settle in the mural endocardium, a heart valve or vasculitis.

- Staphylococcus Aureus, Streptococci of the Viridans group, and coagulase negative Staphylococci are the three most common organisms responsible for infective endocarditis. These bacteria are present in the normal oral flora.

- Streptococcus Bovis is part of the natural intestinal flora of the bowel that can cause bacteremia and infective endocarditis in association with colonic malignancies.

- Treatment for endocarditis include antibiotics and, in certain cases, surgery.

Case Presentation

- 21-year-old male presented with dyspnea, chest pain, orthopnea, bilateral leg swelling, subjective fever, and upon exam, patient had dental caries.

- Patient had history of bicuspid aortic valve since childhood, asthma, and denied any IV drug use, but patient had exposure to septic tanks during his lifetime.

- Pt was given antibiotics, teeth extracted, repeat blood cultures were negative after 72-hours, but unfortunately patient expired.

- Patient had profound shock with multisystem organ failure and inability to wean from cardiopulmonary bypass during AVR procedure.

- During Aortic-valve-replacement(AVR) procedure, patient was found to have extensive infection of the aortic valve with destruction of both leaflets, abscess at the level of the right non-commisure, and complete destruction with effacement of the aortic annulus at the level of the left-right commissure, which are warning signs.

PE/Laboratory Evaluation

- Physical exam was remarkable for systolic and diastolic murmur and 2+ pitting edema in bilateral lower extremities.

- Labs were pertinent for elevated Troponins (1.078, 2.2, 1.9), low Hemoglobin (6.7) & Hematocrit (21.2) requiring pRBC transfusion, leukocytosis (12.4), thrombocytopenia (150,000), abnormal coagulation cascade (PT 15.2, PTT 41.4 ), and blood culture positive for Strep Bovis with likely dental source.

Imaging

- Chest X-Ray showed cardiomegaly.

- Chest and Abdominal/Pelvis CT showed splenomegaly, cardiomegaly with element of pulmonary edema, patchy nodular infiltrates, inguinal lymph nodes with borderline mediastinal, subcarinal and hilar lymph nodes.

- Transthoracic echocardiogram(TTE) showed Ejection Fraction (EF) of 45-50%, severely increased left ventricle cavity size, and aortic valve as bicuspid with thickened leaflets with mobile echo densities, torrential 4+ regurgitation.

- Transesophageal echocardiography(TEE) showed severely increased left ventricle cavity size, EF 40%, aortic vegetation with prolapse leaflets, and torrential/severe aortic insufficiently.

Conclusion

- IE normally presents with history of IV drug abuse and with bacteremia from S. Aureus.

- Patient presented with Strep Bovis bacteremia and cardiac failure, with dental source but without history of colonic malignancy.

- Future medical advances should bridge this disparity positively for rare cases also to reduce mortality.

References


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