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

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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's 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-commissure, 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 insufficiency.

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.
- Patient had history of bicuspid valve since childhood, it should warrant careful evaluation yearly as it could change treatment plans substantially. However, it can offset the balance for high value care at times.
- Future medical advances should bridge this disparity positively for rare cases also to reduce mortality.

References

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