



A CASE REPORT OF CULTURE NEGATIVE INFECTIVE ENDOCARDITIS IN A HIGH RISK YOUNG ADULT

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ABSTRACT

Background: Infective endocarditis (IE) is a serious cardiac infection associated with high morbidity and mortality. The diagnosis becomes particularly challenging when blood cultures are negative, commonly due to prior antibiotic use. Early recognition is essential, especially in patients with known risk factors such as intravenous (IV) drug use, alcohol abuse, and high-risk sexual behavior. **Case Summary:** We present the case of a 23-year-old male OT technician with a 15-day history of high-grade continuous fever, burning micturition, and 2-day history of slurring of speech. He has a history of IV drug abuse, chronic alcoholism, and illicit sexual exposure. He is initially treated at a private hospital before presenting to our hospital with neurological symptoms. 2D echocardiography revealed vegetation on the posterior mitral leaflet with severe mitral regurgitation. Blood cultures are sterile. A diagnosis of culture-negative infective endocarditis is made based on modified Duke criteria. The patient is treated with intravenous vancomycin for 4 weeks. **Conclusion:** This case underscores the importance of clinical suspicion in diagnosing culture-negative infective endocarditis, especially in patients with risk factors and prior antibiotic use. Echocardiography plays a vital role in diagnosis and monitoring of Infective endocarditis. Empirical antibiotic therapy can be effective in managing these challenging cases.

KEYWORDS: Culture-negative infective endocarditis, intravenous drug use, vegetation on posterior mitral leaflet, Modified Duke criteria.

INTRODUCTION

Infective endocarditis mainly affects native valves, especially the mitral and aortic valves. Regurgitant lesions are more infection-prone than stenotic ones. Mitral valve prolapse with regurgitation is the most common predisposing condition, followed by aortic regurgitation and bicuspid aortic valve. Risk factors include congenital heart defects, previous IE, IV drug use, chronic illnesses, and healthcare exposure. Skin, dental, and gastrointestinal portals are the main sources of infection.^[1]

CASE REPORT

A 23-year-old male OT technician from Seethamma Nagar, Tirupati, presented to our hospital with complaints of fever since 15 days, high-grade, continuous associated with chills and rigors, history of burning micturition without hematuria, increased frequency, urgency. No other supportive history. He was admitted and diagnosed as

urosepsis in a private hospital given IV ceftriaxone for 3 days followed by meropenem for 3 days with supportive medication after which fever partially reduced and patient discharged.

Next day patient developed high grade fever associated with slurring of speech and burning micturition and brought to our hospital. We revisited the history and found that patient had a history of chronic alcohol consumption, IV abuse of butorphanol, and illicit sexual exposure.

On examination, the patient was febrile. Pulse rate - 135 beats per minute, regular Blood pressure - 110/70 mm Hg SPO2 - 99% at Room air Painless red nodules present over thenar aspect of right hand Painless red macules over lateral aspect of foot Multiple petechiae over bulbar conjunctiva on both sides.



CardioVascularSystem - S1 S2 heard, Tachycardia present, Early systolic murmur is heard in mitral area.
Respiratory System - Examination is normal.

Gastrointestinal System - Examination Splenomegaly present.

Central Nervous System - Examination Slurred speech without focal deficits. We made a probable diagnosis of Infective Endocarditis and evaluated further. ECG at the time of admission showed Sinus tachycardia

Laboratory Investigations revealed:
Total Leucocyte count is increasing with neutrophilic predominance for first 6 days later decreased Hemoglobin decreased initially and later started improving
Acute phase reactants are elevated (ESR-88 mm/hr, CRP-62 mg/dL)
Other investigations - Liver function test, Renal function test, Urine microscopy within normal limits HBsAg came to be positive
Blood cultures and Urine cultures are sent and came to be negative. 2D Echo is done and shows
Vegetation on PML Severe MR, Mild TR No RWMA
Normal LV systolic function Normal sized chambers
No Clots

Based on modified Duke criteria, a diagnosis of culture-negative infective endocarditis is made (1 major + 3 minor criteria: fever, IV drug use, vascular phenomena). The patient is treated with IV vancomycin for 4 weeks, with resolution of fever and improvement in symptoms.

CONCLUSION

Culture-negative infective endocarditis requires a high index of suspicion, particularly in patients with prior antibiotic exposure and risk factors like IV drug use. Echocardiography remains pivotal in diagnosis. Early empirical therapy tailored to suspected organisms can lead to favorable outcomes even in culture-negative settings.v

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