

Prosthetic Valve Endocarditis caused by HACEK Organisms requiring Long Term Oral Antibiotic Suppression Therapy

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Introduction

- HACEK organisms (Haemophilus species, Aggregatibacter species, Cardiobacterium hominis, Eikenella corrodens, and Kingella species) are gram negative fastidious organisms and uncommon causative agents for infective endocarditis (IE)
- Diagnosis of HACEK organisms can be difficult to isolate from blood cultures due to prolonged incubation requiring subcultures: Mass spectrometry as a diagnostic technique for rapid turnover and sensitivity/specificity
- Studies show bacteria with *A. Actinomycetemcomitans* has a 100% PPV for Infective Endocarditis [2]
- HACEK PVE can require longterm oral suppression antibiotic therapy, due to rarity of such cases: challenging to develop concrete guidelines

Case Discussion

- An 82 year-old male with past medical history of new onset atrial fibrillation, aortic stenosis status post bioprosthetic valve (thirteen years ago) presented with generalized weakness, anorexia and weight loss
- He presented afebrile with leukocytosis, but developed fevers with a Tmax 101F. CT chest revealed pulmonary congestion. TTE showed no vegetations or bioprosthetic valve abnormality.
- Preliminary blood cultures grew gram positive cocci and Vancomycin was started. TTE showed a large aortic root abscess extending into ascending aorta causing severe paravalvular aortic insufficiency.
- Finalized blood cultures grew Aggregatibacter actinomycetemcomitans
- Antibiotics changed to Ceftriaxone and determined to be high risk surgical evaluation
- Patient completed six weeks of IV antibiotics and transitioned to oral Amoxicillin indefinitely
- Unfortunately, the patient developed acute heart failure secondary to non-ischemic cardiomyopathy and died

Discussion

- Studies have shown that PVE is more commonly seen with HACEK organisms. Additionally, within HACEK endocarditis (HE), *A.actinomycetemcomitans* was more common than *H. parainfluenzae* for PVE.
- Studies have also shown that bacteremia with *A.actinomycetemcomitans* has a 100% PPV for IE. Isolation of this species in a single blood culture should be a major Duke criteria for diagnosis of IE.
- Most cases treated with third generation cephalosporin and ampicillin with or without aminoglycoside
- Due to high perioperative risk 20-40% of patients eligible for surgery do not undergo surgery
- For patients with surgery indicated and not undergoing surgery IE (SINUS-IE), antibiotic durations are not sufficiently evidence-based due to the lack of randomized controlled trials
- Long term antibiotic therapy (LTAT) including long term oral suppressive antibiotic therapy (LOSAT) is a consideration for such patients.



Figure 1: TEE showing aortic root abscess

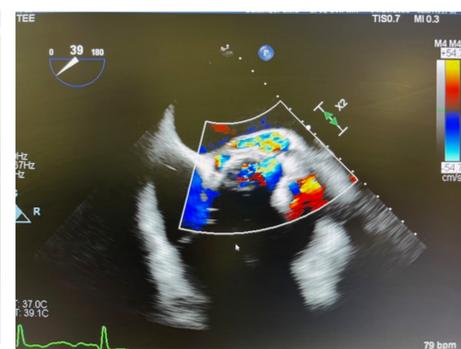


Figure 2: TEE

Gram-negative coccobacilli direct from blood culture

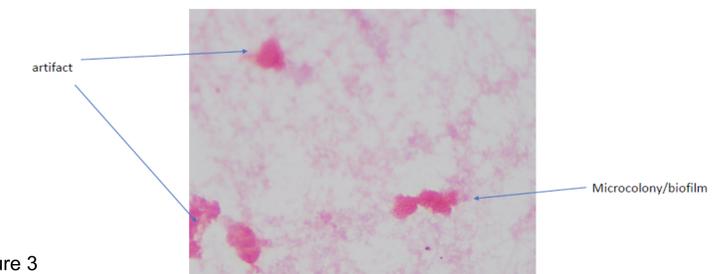


Figure 3

Conclusion

- Positive blood cultures with *A.actinomycetemcomitans* has a 100% PPV for IE. Isolation of this species in a single blood culture should be a major Duke criteria for diagnosis of IE
- Due to the relative rarity of HE, LOSAT has not been concretely established and based more so on individualized treatment. Further studies, along with case reports will be an asset to determining such guidelines.

References

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