

A Rare Case of Enterococcus Faecalis Causing MitraClip Vegetation

Khyati Khattar, MBBS¹; Tapan Buch, MD¹; Margaret Kluck, MD¹; Pranjal Boruah, MD²;

1. The Wright Center for Graduate Medical Education, Scranton, PA; Geisinger Community Medical Center, Scranton, PA

Introduction

- MitraClip procedure is a minimally invasive procedure that involves an edge-to-edge approximation of the MitraClip device with the regurgitant mitral valve, thereby resulting in better coaptation of the mitral leaflets and symptomatic improvement
- Here we present a rare case of MitraClip-associated infective endocarditis

Case Presentation

- The patient was an 80-year-old male with a past medical history significant for lung nodule, emphysema, alpha 1 antitrypsin deficiency, chronic obstructive pulmonary disease, pulmonary fibrosis, bronchiectasis, hyperlipidemia, coronary artery disease, mitral valve regurgitation s/p MitraClip placement, paroxysmal atrial fibrillation.
- He presented to the hospital with the complaint of cough, shortness of breath, and right lower quadrant tenderness. On evaluation, he was febrile and tachycardic.
- Labs showed an elevated lactic acid of 2.4 and leukocytosis of 12.9. Chest X-ray showed volume overload.
- CT chest showed a 1.5cm lung nodule and emphysematous changes
- EKG showed sinus tachycardia with PVCs
- Blood cultures were obtained and the patient was empirically started on Ceftriaxone and azithromycin. A sepsis bolus of fluids was given and the patient was admitted to telemetry.

Discussion

- Post admission the patient went into atrial fibrillation with a rapid ventricular rate. Blood cultures grew *Enterococcus faecalis*, and he was switched to IV Vancomycin.
- Cardiology attributed the tachycardia to the ongoing sepsis and a Diltiazem drip was started. Beta-blockers were deferred in view of severe lung disease. Rate control was suboptimal and the patient was started on Digoxin.
- Transthoracic echo was done and could not exclude MitraClip vegetation
- In view of persistent bacteremia, a transesophageal echo was done and showed a small independently mobile echo density on the mitral valve, suggestive of mitral valve endocarditis in the presence of a MitraClip-figures 1 & 2
- The patient was recommended to continue a total of six weeks of antibiotic therapy from the date of negative cultures with Ampicillin and Ceftriaxone and was discharged



Fig 1.

There is a small abnormal echo density on the anterior mitral leaflet with independent oscillatory motion measuring 0.2x 0.8cms suggestive of a vegetation seen in Fig 1 (green arrow) and Fig 2 (red arrow).

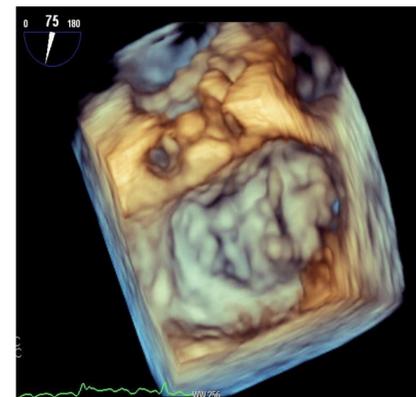


Fig 2.

Conclusion

- While infective endocarditis is a commonly encountered condition, MitraClip infective endocarditis is extremely rare. There have only been 17 documented cases as per an ESC article by Leow et al. published in 2020 (1).
- Out of these, only two known cases of *E.faecalis* causing MitraClip endocarditis are known as published by Weiss et. al in 2017 (2). Other causative organisms are *Staph aureus* (most common) and *Pseudomonas*. In most of the published cases the prognosis has been poor, either in the form of conversion to surgical repair of the mitral valve, persistent symptoms, or death (1).
- Early diagnosis and appropriate antibiotic treatment are imperative in improving outcomes. TEE is the diagnostic modality of choice.
- Increased awareness is needed regarding this near catastrophic complication of the MitraClip procedure, especially as it gains increased popularity as a treatment modality for high-risk patients with mitral regurgitation

References

1. Leow, K, Isreb, C, Brown, M. 2020, Oct. 4. *MitraClip-related infective endocarditis in a frail, elderly patient: a case report*. National Library of Medicine. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7780467/>
2. Weiss, E, Dwivedi, A, Vainrib, A, et al. 2017, Sep 8. *Enterococcus Faecalis Infective Endocarditis Following Percutaneous Edge-to-Edge Mitral Valve Repair*. Taylor & Francis Online. <https://www.tandfonline.com/doi/abs/10.1080/24748706.2017.1372650?scroll=top&needAccess=true&journalCode=ushj20>