

A Rare Case of Tricuspid Valve Endocarditis caused by *Serratia Marcescens*

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[Supplemental Video](#)

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Introduction:

This is a case of a 38 year-old female, with past medical history significant for intravenous drug use, who presented with bilateral septic emboli due to tricuspid valve endocarditis with moderate to severe tricuspid regurgitation in the setting of *Serratia marcescens* bacteremia. This case highlights a pathogen which is rare as the etiology of endocarditis. It also highlights a successful use of the AngioVAC system, a percutaneous aspiration device, as a means of debulking valvular vegetations.

Case Presentation:

38 year-old female, with a past medical history significant for intravenous drug use, presented due to shortness of breath and chest pain only 2 days prior to admission in addition to fever and chills. Two days prior to admission was also the last time the patient endorsed using intravenous drugs. Vitals were significant for tachycardia and tachypnea; necessitated use of supplemental oxygen through nasal cannula. On physical exam, scattered crackles present on inspiration and decreased breath sounds present bilaterally.

Labs were significant for white blood cell count of $30.9 \times 10^3/\text{mL}$, lactic acid of 5 mmol/L, C-reactive protein of 20 mg/dL, procalcitonin 62.11 ng/mL. Serial troponins and EKG unremarkable. However, pro-brain natriuretic peptide of 3927.

CXR showed patchy bilateral airspace opacities, infiltrates in both lungs as well as a cavitory lesion in the left upper lobe. This was followed up by CTA chest, which showed multifocal pneumonia and findings consistent with diffuse septic pulmonary emboli bilaterally.

Due to concern for septic emboli, a trans-thoracic echo (TTE) was ordered. TTE showed definite large irregular echogenic mobile vegetation on the right atrial aspect of the tricuspid valve with moderate to severe tricuspid regurgitation.

Patient was started on an empiric antibiotic course of intravenous vancomycin and piperacillin/tazobactam. Later, blood cultures from the date of admission resulted; they were positive for *serratia marcescens*.

Final Working Diagnosis:

Moderate-to-severe tricuspid regurgitation, secondary to *serratia marcescens* tricuspid valve endocarditis

Management/Outcome/Follow-up:

Cardiothoracic surgery was consulted and multiple options were considered, including debridement of the infected area, excision with valve preservation or repair if needed, and tricuspid valve excision with prosthetic valve placement. However, cardiothoracic surgery deemed patient to be a poor candidate for

the aforementioned procedures due to an elevated Society of Thoracic Surgeons' risk score in addition to history of multiple episodes of relapse in intravenous drug use.

Therefore, trans-esophageal echocardiogram was done as well as an Angiovac procedure, which entails aspiration thrombectomy using percutaneous right heart bypass. Large amounts of vegetation were removed off tricuspid valve and the subsequent culture of this material also revealed *Serratia marcescens*.

Patient was ordered six weeks of IV piperacillin/tazobactam from date of negative blood cultures due to above findings. Patient was subsequently discharged after clinic improvement and ordered to follow-up at an outpatient cardiology clinic in 2 weeks.

Learning Objectives

1. Identify clinic findings of infective endocarditis
2. Discuss both common and uncommon bacterial pathogens involved in infective endocarditis
3. Discuss treatment options for infective endocarditis