

Septic Pulmonary Emboli due to *Serratia marcescens* Infection arising from Infected Pacemaker Insertion Site

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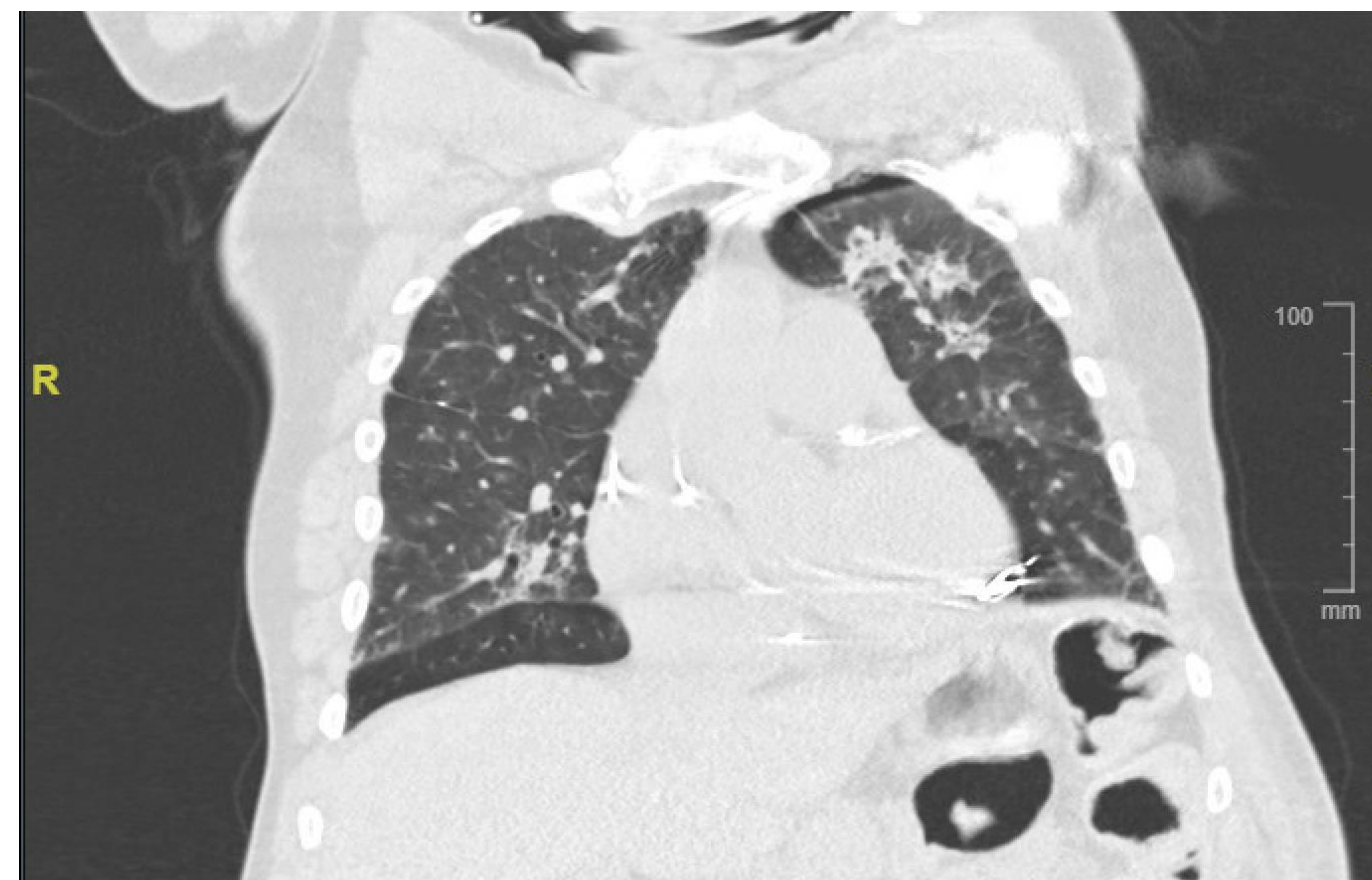
Introduction

- Septic pulmonary emboli from infected pacemaker leads are an uncommon complication of rhythm management devices.
- *Serratia marcescens* producing septic pulmonary emboli is not well described in current literature.

Case Presentation

- A 73-year-old man with chronic combined systolic and diastolic heart failure status post biventricular pacemaker placement presented to our hospital for outpatient elective biventricular ICD extraction and re-implantation.
- One month prior, he was admitted to an outside hospital for purulence at the pacemaker site. There was no growth from blood cultures and both TEE and TTE were negative for vegetations but demonstrated a left atrial thrombus.
- Patient received vancomycin and ceftriaxone, as well as apixaban for one month prior to removal due to the left atrial thrombus.
- At that time, the patient presented for elective biventricular ICD extraction and re-implantation. He endorsed generalized fatigue and conversational dyspnea and on exam, revealed rales bilaterally as well as elevated JVP to the mandible.
- Given his decompensation, the patient was admitted for IV diuresis prior to ICD extraction and re-implantation. TEE during this admission showed appearance of a long, flat 1.9 x 1.1 cm vegetation on the right ventricular lead after removal as well as frank purulence from the pacemaker site.
- CT chest showed multiple, non-cavitary solid and semi-solid nodular densities suggestive of septic pulmonary emboli. The infected leads (and pacer) were removed, and the patient was transvenously paced, while receiving vancomycin and ceftriaxone.
- The permanent pacemaker was replaced four days later. Blood cultures showed no growth, but wound culture from the pacemaker pocket grew *Serratia marcescens* susceptible to ceftriaxone. He was discharged on two weeks of IV ceftriaxone.

Imaging



There are diffuse, ill-defined, peripheral predominant semisolid and solid nodules throughout all lung fields, with the largest pointed out by the red arrow with a background of patchy regions of ground-glass opacities

Discussion

- This case demonstrates the morbidity of infected pacemaker leads and the need to consider coverage for uncommon organisms such as *S. marcescens* prior to definitive culture data.
- To our knowledge, this is the first case of pacer lead-associated *S. Marcescens* endocarditis causing septic pulmonary emboli.
- This patient's lead removal was postponed due to concerns of the left atrial thrombus and complications related to his severe heart failure.
- Best evidence regarding recommendations for removal are complete removal of all hardware, as rates of infective endocarditis are high with retained hardware.
- This case also illustrates the need to balance early source control (i.e., removing pacer wires) versus risk of left atrial thrombus disruption.
- This patient is currently doing well – has had his permanent pacemaker replaced now.

References

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