

Early diagnosis of purulent pericarditis secondary to MSSA in ESRD patient

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Introduction

- Purulent pericarditis is a localized infection of the pericardial space characterized by gross pus in the pericardium
- Purulent pericarditis is a rare illness affecting 1/18,000 persons. [1]
- Without treatment, mortality is nearly 100% and with treatment, mortality is 40%. [2]
- The major complications of purulent pericarditis are cardiac tamponade and constrictive pericarditis.

Introduction

- Typical presentation consists of fever, chills, and tachycardia. [3]
- Chest pain and pericardial friction rub are usually not present. [3]
- EKG is normal in 35% of cases. [3]
- Diagnosis is often delayed due to nonspecific symptoms with over half of cases being discovered postmortem. [2]
- Staph aureus is the most common causative pathogen followed by Strep pneumoniae

Case

A 66-year-old female with PMH of ESRD, HFpEF, and COPD presents to emergency room with shortness of breath.

Patient is initially somnolent but arousable. She is slow to respond to questions but answers them accurately and appropriately. Patient reports gaining 11 kg over past week. She goes to dialysis Tuesday, Thursday, and Saturday consistently. During HD that day, patient became hypoxic, requiring 2L O₂ nasal cannula. She was unable tolerate the full HD session and was sent to the ER.

Case

Day 1: Patient admitted and nephrology was consulted. Plan for two sessions of hemodialysis with likely discharge after second session. Patient only complains of shortness of breath. She has bilateral lower extremity edema, not significantly increased from baseline. Denies wheezing, chest pain, fevers, chills, or any other symptoms. Patient completes first session of dialysis without issue. Continues to report shortness of breath.

CXR shows moderate pulmonary edema.

Case

Day 2: During second HD session, patient complains of feeling short of breath and asks to stop. HD is stopped and patient is returned to her room. Repeat HD scheduled for following day. Continues to reports SOB, requiring 2L oxygen.

Case

Day 3: Overnight, patient spiked a fever of 102.2 F. Morning CBC showed elevated WBC of 14.01, up from 11 initially.

Repeat CXR shows increased pulmonary edema.

Blood cultures were drawn. Patient was started on vancomycin and piperacillin/tazobactam for empiric coverage.

Case

Day 4: Overnight, patient goes to atrial fibrillation with RVR. Started on diltiazem drip.

Gram stain of blood cultures shows yeast.

Cardiology and infectious disease consulted.

Patient started on micafungin in addition to vancomycin and piperacillin/tazobactam.

TTE is ordered.

Case

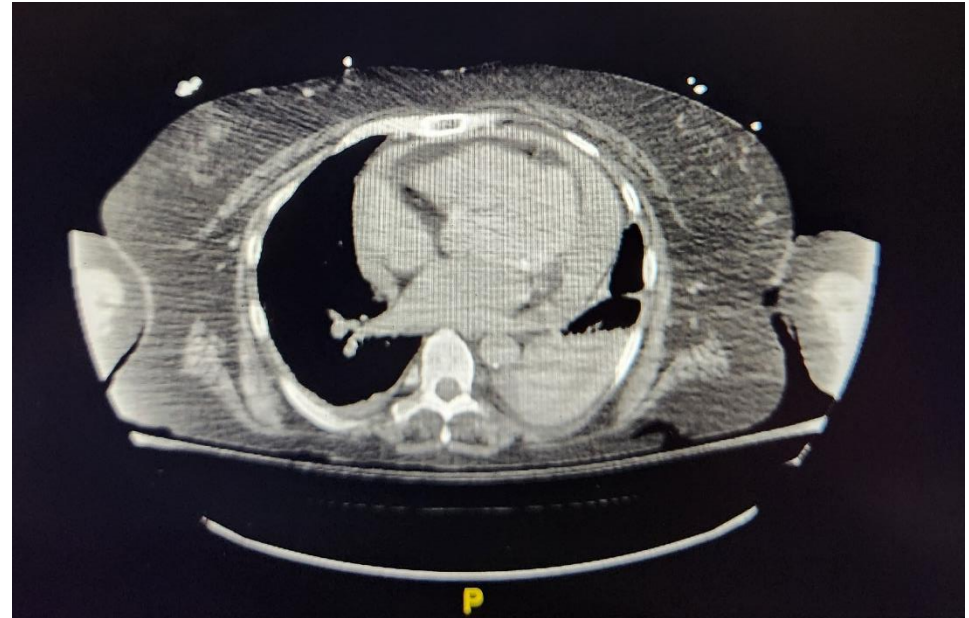
Day 5: Blood cultures growing methicillin sensitive staph aureus (MSSA) in 2 out of 2 sets.

Antibiotics switched to cefazolin and gentamycin.

CT abdomen/pelvis is ordered

Case

Day 6: CT abd/pelv shows prominent pericardial effusion and bilateral pleural effusions, worse on left. Cardiothoracic surgery is consulted.



Case

Day 7: TTE shows large pericardial effusion with fibrinous materials/strands, cannot rule out loculations.



CT surgery and cardiology planning for coordinated TEE and pericardial window the following day.

Case

Day 8: TEE reveals mitral valve vegetation. Pericardial window drains 700 mL effusion, all pus.

Case

Day 9-18: Cultures from pericardial fluid grew MSSA on Day 11.

Patient continued on IV cefazolin and gentamycin for total 8 weeks of IV antibiotics. Patient discharged to LTAC.

Conclusion

Diagnosis of purulent pericarditis is often delayed due to nonspecific symptoms. Purulent pericarditis has a high mortality rate and should be diagnosed early on prior to developing signs of tamponade or constrictive pericarditis.

Conclusion

There should be a low threshold for suspecting purulent pericarditis in patients with MSSA bacteremia and fevers. Consider early echocardiogram or CT chest to evaluate for pericardial fluid. Treatment requires pericardial drainage and antibiotics.

References



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