



Epidemic of Heroin: Purulent pericardial effusion and septic emboli in an intravenous drug user with right sided endocarditis



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Introduction :

Purulent pericardial effusion is a rare fatal complication of infective endocarditis. We present a case of sepsis secondary to right sided infective endocarditis who developed cardiac tamponade secondary to purulent pericardial effusion.

Case Description:

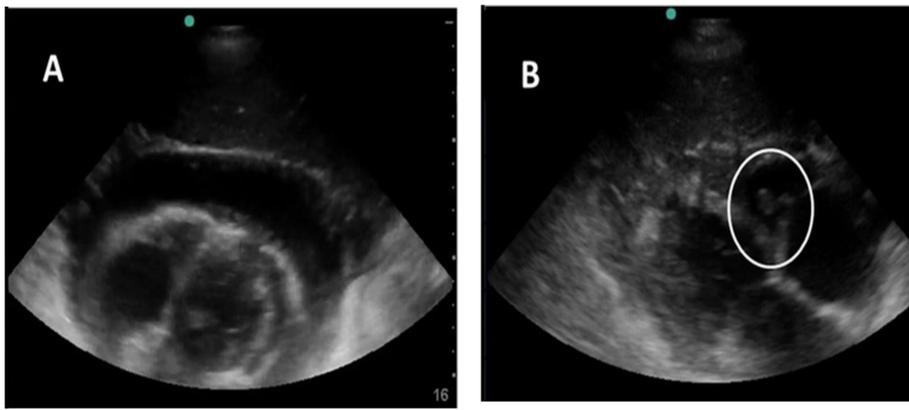
A 39-year-old female with past medical history of polysubstance abuse, including IV heroin, presented with dyspnea for one week with no improvement despite treatment with antibiotics and oral steroids. Upon arrival to the hospital, the patient was found to be hypotensive, tachycardic and febrile. On examination, she was lethargic and agitated, had occasional wheezing with rales in the upper lung zones, diffuse abdominal tenderness, and track marks on her extremities.

Her blood work were significant for marked elevation of WBC 41.6 (4.8 -10.8 K/uL), anion gap of 21 (5-16 mEq/L), BUN 97 (9-20 mg/dL), creatinine 5.0 (0.7-1.3 mg/dL), ALT 70 (21-72 U/L) and AST 86 (17-59 U/L). Initial chest X-ray showed bilateral infiltrates. The CT of chest showed significant pericardial effusion, extensive bilateral pulmonary emboli with partially loculated bilateral pleural effusions (Figure C). The blood cultures were drawn and broad-spectrum antibiotics were started. Transthoracic echocardiogram (TTE) showed 1.1 x 0.7 cm irregular mobile echodensity on the tricuspid

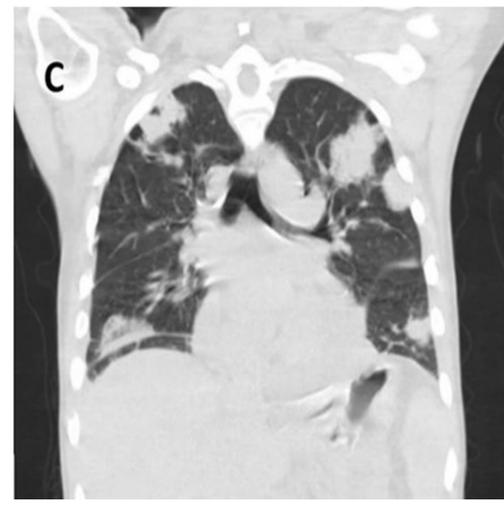
valve and a moderate-large pericardial effusion. Subsequent transesophageal echocardiogram (TEE) revealed enlargement of the pericardial effusion with systolic right atrial and diastolic ventricular collapse (Figures A & B).

Hemodynamic deterioration prompted urgent pericardiocentesis with evacuation of 550 turbid/yellow fluid. The blood cultures and pericardial fluid grew methicillin resistant Staphylococcus aureus (MRSA), which was susceptible to vancomycin. The patients' clinical status deteriorated with the development of severe acute respiratory distress syndrome (ARDS) and irreversible septic shock leading to her death.

Figures:



A. TEE showing Pericardial Effusion
B. TEE showing tricuspid vegetation (Circled area)



C. CT of the chest showing septic emboli to the lung parenchyma with lung cavitation

Discussion:

Purulent pericardial effusion is rare, but highly fatal infection with mortality rates at about 40% even when promptly treated with antibiotic therapy. Spread may occur from hematogenous dissemination or contiguously. Streptococcus pneumoniae is the most commonly implicated bacteria.

Treatment includes prompt drainage via pericardiocentesis or surgical pericardiotomy. Younger patients are more likely to develop purulent pericardial effusion. They should be treated with high level of urgency so that early diagnosis and aggressive treatment are provided in order to maximize chances for survival. Heroin epidemic is a worldwide phenomena and it is plausible that might result in higher incidence of right sided infective endocarditis and development of purulent pericarditis.

References:

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