Concerning Chest Pain: Photo Case Competition

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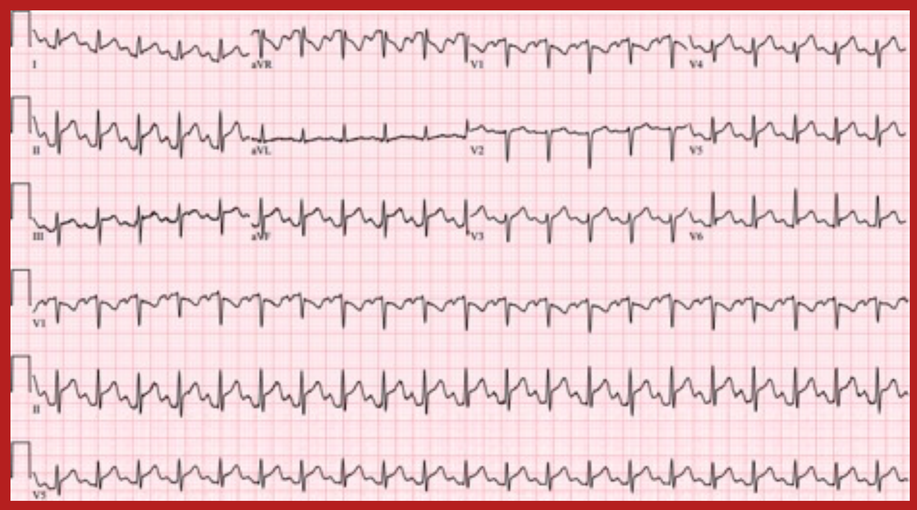
Case History

Chief complaint: Chest pain
History of present illness: 37-year-old male with history of HTN and HLD presenting with 5 days of intermittent, pleuritic, sharp, sub-sternal chest pain that radiates to his left shoulder. He denied the pain being positional in nature. His social history was significant for being an everyday tobacco smoker. His past family history was significant for his brother dying from an MI at age 30.
Pertinent Physical Exam: Vital signs significant for tachycardia to 118 with a temperature of 101.3F. His cardiac exam was remarkable for tachycardia with regular rhythm and no murmurs. Exam also notable for mild epigastric tenderness to palpation. Laboratory data revealed a negative troponin and lipase, a WBC of 10.9, Cr of 1.93 and otherwise normal lab values.

Questions

1. What classic findings do you see on his ECG to key you into his diagnosis?
2. What does his point of care Ultrasound (POCUS) Echocardiogram show that helps to confirm your suspicions?

Electrocardiogram



Bedside Cardiac Ultrasound

Key- PE-Pericardial Effusion, LV- Left Ventricle, LA-Left Atrium, RV-Right Ventricle, AR-Aortic Root
D. Aorta-Descending aorta

Answers

1. Shown is an ECG with sinus tachycardia and diffuse ST elevations as well as PR depressions in leads I, II, and the precordial leads. This correlates closely to stage 1 of pericarditis (this stage can last for weeks).
2. This is a bedside cardiac ultrasound that reveals a moderate pericardial effusion in the parasternal long axis (PSLA) view of the heart. His effusion is seen both anteriorly (in front of the right ventricle) and posteriorly (behind the left ventricle). Note the descending aorta position to differentiate from a pleural effusion posterior to the heart.

Case Discussion

- These are classic findings for a patient with pericarditis.
- Pericarditis can occur from numerous causes such as viral, bacterial, fungal, medication, rheumatologic disease, uremia, malignancy, or idiopathic.
- In patients with suspicion for pericarditis it is important to rule out myocarditis by obtaining and potentially trending cardiac enzymes as well as an echocardiogram.
- Upon further discussion with the patient, he reported that he had a URI 2 weeks prior to this pain starting.
- The patient was admitted and started on colchicine and subsequently ibuprofen. Two days later the patient received a pericardiocentesis for concerning tamponade physiology. After this procedure, the patient stabilized and started to improve. His rheumatologic workup was unremarkable and it was deemed to be most likely virally caused. He was discharged home in stable condition with cardiology follow up.

Pearls

- Recognizing that there is a broad differential for patients presenting with chest pain and ST Elevation on ECG.
- Utilizing POCUS can greatly assist in evaluating, diagnosing, and determining dispositions for our patients. For this case, the pericardial effusion shown on POCUS led us to admit the patient for serial imaging. Trending his pericardial effusion led to a life-saving intervention.
- It is important to treat patients early with NSAIDs when clinical suspicion is high.