Acute Pericarditis: Electrocardiogram

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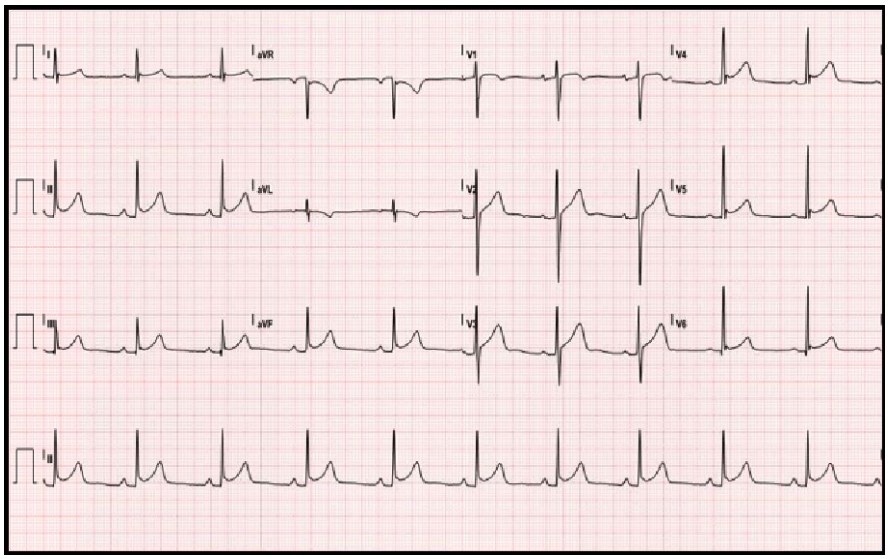

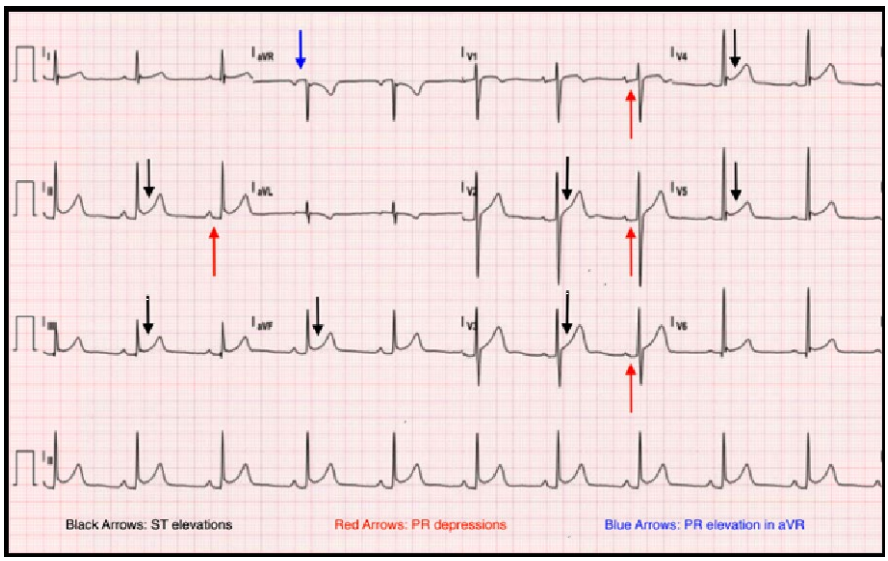

History of present illness: A 22-year-old male presented to the emergency department with a chief complaint of retrosternal chest pain that started yesterday. He described the pain as a constant, sharp and pleuritic. The pain was worsened by lying flat, and improves with leaning forward. He reported having a sore throat and other cold symptoms earlier in the week. The patient's exam was notable for a faint pericardial friction rub. A bedside echocardiogram demonstrated normal cardiac function without pericardial effusion. The patient's electrocardiogram (ECG) is shown.

Significant findings: The ECG shows diffuse ST-elevation. The patient also has mild PR-depression, most notably in the inferior and lateral leads. The patient also has minimal PR elevation in lead aVR. The patient was diagnosed with acute pericarditis, this ECG represents the stage 1 or acute ECG findings.

Discussion: Pericarditis is inflammation or infection of the pericardial sac. There most common etiologies are viral or idiopathic.[1,2] While it is rarely fatal, acute pericarditis can cause severe, disabling pain.[2] Furthermore, concomitant myocarditis can cause significant morbidity and mortality. Classic ECG findings include diffuse ST-elevations and PR-segment depression, without reciprocal ST-segment depression (as shown in this image). The ECG of pericarditis may move through various stages when followed over time.[1,2] These include stage 1: diffuse ST-elevations with concave-upwards contour, PR-depressions (most common in II, aVF, V4-6); stage 2: ST segments become isoelectric and T waves flatten; stage 3: symmetric T wave inversion throughout ECG; and stage 4: ECG normalization.[2] These ECG changes have variable sensitivity and specificity depending on the stage, with less than 50% of patients progressing through the classic stages.[2]

Topics: Cardiology, cards, electrocardiogram, ECG, ST elevation, acute pericarditis, abnormal ECG, PR depression.

References:

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