

Key Learning Points

- Molecular mimicry and cross-reactive autoimmunity are potential pericarditis triggers following vaccinations, especially in the context of COVID-19. However, varicella zoster virus (VZV) vaccination may similarly be associated with pericarditis through the same mechanisms described.
- The absence of obstructive coronary artery disease on cardiac catheterization distinguishes pericarditis from ST-elevation myocardial infarction (STEMI) in patients with electrocardiogram (ECG) findings concerning for acute coronary syndromes (ACS).
- Recent VZV vaccination may be an important historical question when evaluating patients whose presentations are concerning for pericarditis.

Background

Clinical Case

- 86-year-old male with a history of hypertension presented to the emergency department six days after receiving a VZV vaccination with a few hours of severe, pleuritic, pressure-like chest pain worsened in the supine position. He denied respiratory symptoms or febrile illness in the preceding months.
- ECG revealed ST elevations in leads II, III, aVF, V5, and V6, with reciprocal PR depressions (Fig. 1).
- WBC 11.1, Hbg 14.4, HS Trop 4, comprehensive viral panel negative, ESR 16.
- Computed tomography (CT) of the chest was unremarkable.
- Given his risks for ACS and concern for STEMI on ECG, he underwent urgent cardiac catheterization, which revealed no obstructive coronary artery disease.
- A diagnosis of acute pericarditis was favored, and administration of colchicine quickly resolved his pain.
- A transthoracic echocardiogram (TTE) showed normal biventricular function without pericardial effusion (Fig. 2).

Discussion

Differential Diagnosis: ACS vs. Pericarditis

- Patient presented with chest pain and ST elevations, initially raising concern for ACS, particularly STEMI.
- ST-segment elevation in multiple leads, without significant reciprocal changes or clear coronary occlusion, is characteristic of pericarditis.
- PR depression on ECG is highly specific for pericarditis and aids in distinguishing it from ischemic heart disease.
- Normal cardiac catheterization, showing no obstructive coronary artery disease, further supported the diagnosis of pericarditis over STEMI.

Association with Varicella Zoster Virus (VZV) Vaccination

- The patient had received the VZV vaccine six days prior to symptom onset, raising the possibility of vaccine-associated pericarditis.
- Although rare, there are reports of pericarditis following vaccinations, potentially triggered by an immune-mediated response.
- Mechanisms such as molecular mimicry or immune complex deposition are thought to be involved, though the exact pathophysiology remains unclear.
- Case reports suggest that vaccination-related pericarditis is typically mild and resolves with anti-inflammatory treatment, as seen in this patient.
- Anti-viral therapy is not indicated for VZV vaccination-related pericarditis.

References

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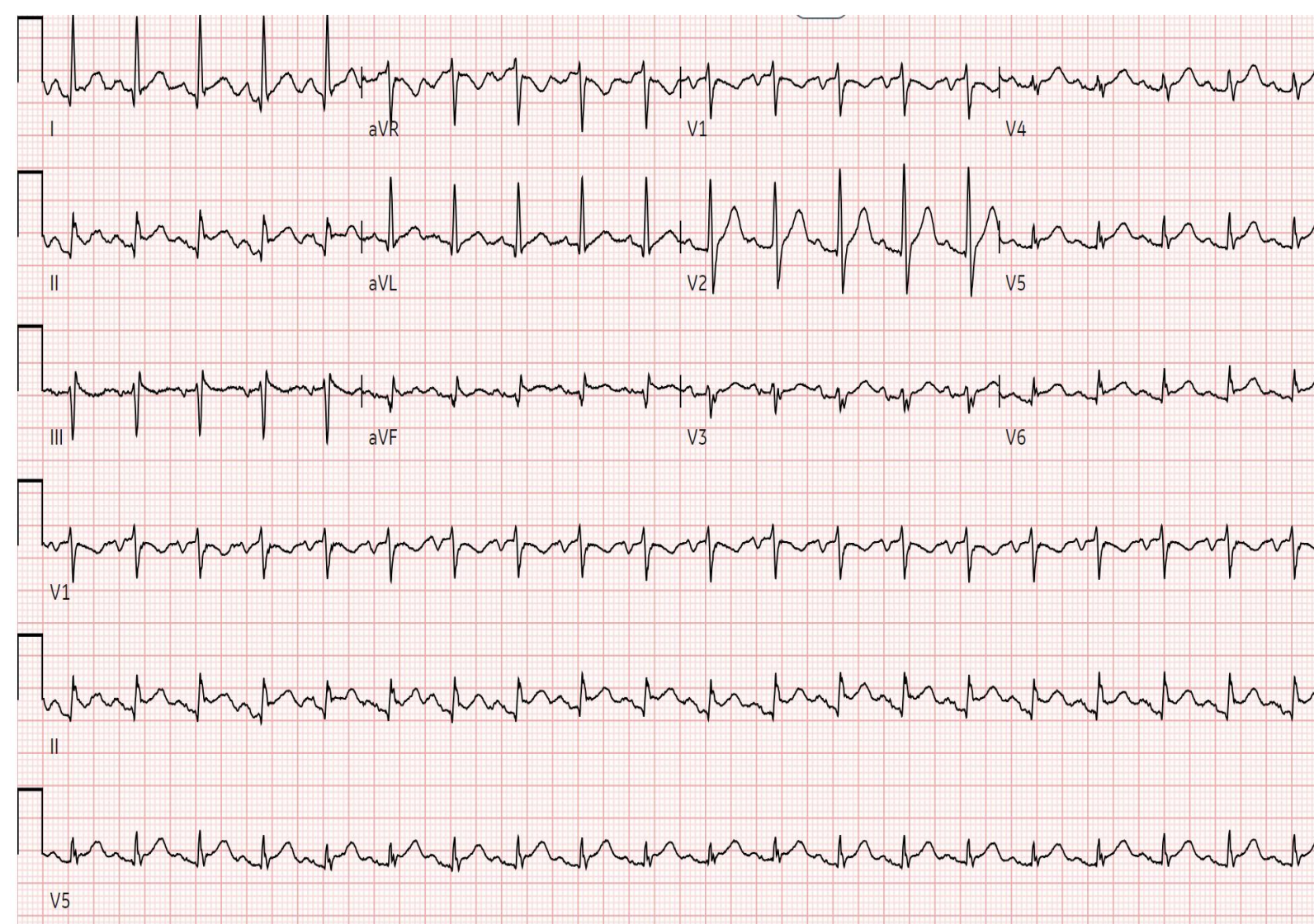


Fig.1 Initial EKG upon admission

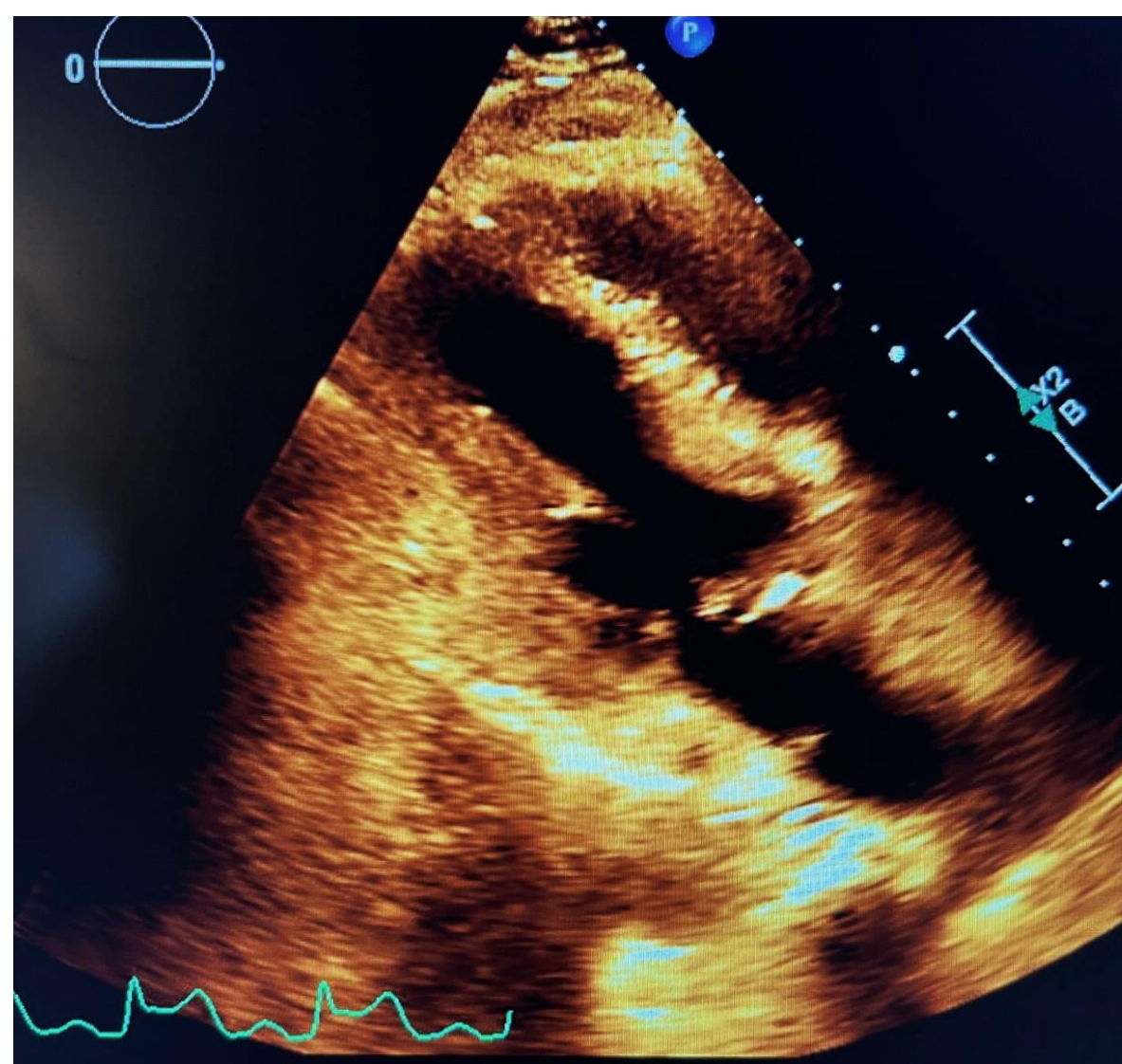


Fig.2 Transthoracic Echocardiogram (TTE)