Unmasking the Uncommon: A Rare Case of Pediatric Infective Endocarditis Misdiagnosed as a Viral Illness

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Introduction

- Infective endocarditis (IE) is an infection of the endocardium and/or heart valves that involves thrombus formation (vegetation), which may damage the endocardial tissue and/or valves.
- Diagnosing infective endocarditis (IE) in children can be challenging because its clinical presentation is often nonspecific.
- Symptoms can mimic other common illnesses like the flu, making it difficult to distinguish and requiring a high level of suspicion, especially in children without known heart defects.

Patient Description

- A previously healthy 12-year-old male initially presented to our pediatric emergency department (PED) with a five-day history of intermittent fever and three days of neck pain.
- On examination, he was febrile at 38.1°C and tachycardic at 120 bpm, with a normal neurological exam and no signs of meningismus and he was discharged with a presumed viral illness and supportive care.
- Nine days later, the patient returned to the PED with persistent fever, lethargy, migratory joint pain, and difficulty ambulating due to ankle pain.
- On arrival, he was febrile at 39.1°C, tachycardic at 156 bpm, tachypneic at 35 breaths/min, and hypotensive at 88/46 mmHg.
- Initial management included fluid resuscitation, peripheral blood cultures obtained and started on empiric ceftriaxone treatment.
- Chest X-ray shown in Figure 1.
- A CT scan of the thorax, abdomen, and pelvis showed bilateral pleural effusions, ground-glass opacities, and mild splenomegaly.

Figure 1. Chest X-ray demonstrated cardiomegaly, and bilateral pleural effusions

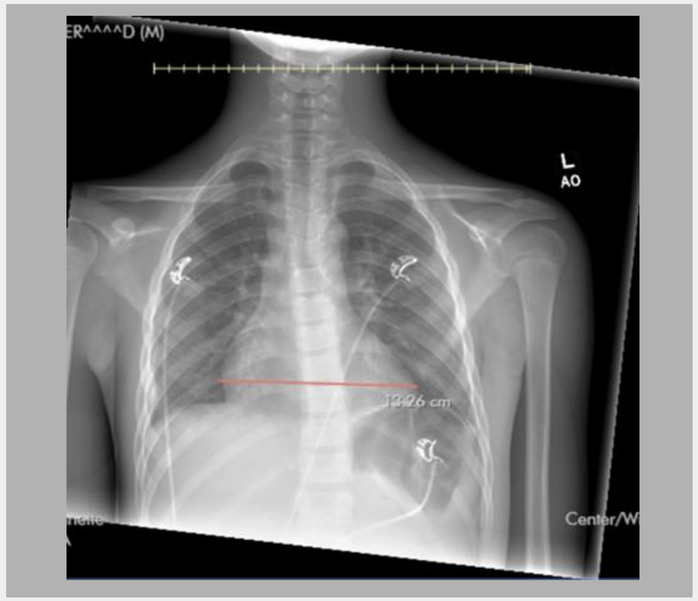
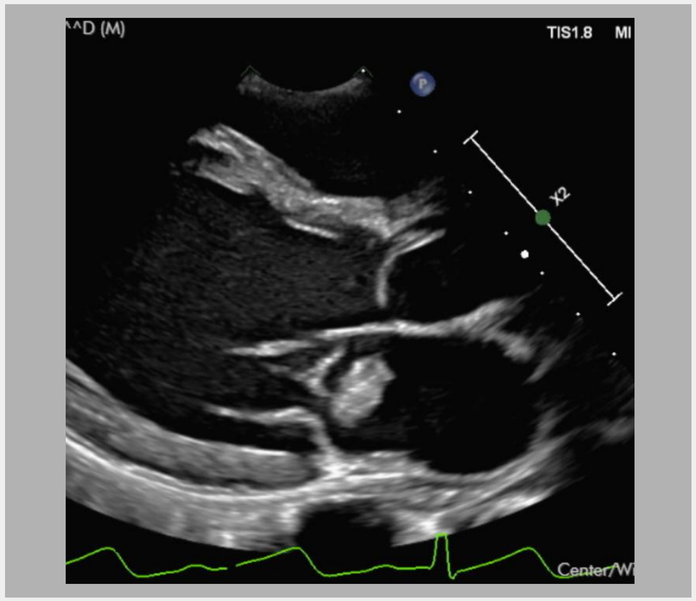


Figure 2. CV ECHO: Echogenicity seen on posterior mitral valve leaflet measuring 1.7 cm by 1.5 cm. Moderate mitral regurgitation.



Intervention

- Despite fluid resuscitation, his hemodynamic instability persisted, requiring norepinephrine.
- Patient was subsequently admitted to the PICU in the setting of fluid-refractory septic shock.
- During his inpatient admission, findings of systolic regurgitant murmur and stat echocardiogram revealed a 2 cm x 1.5 cm mitral valve vegetation with moderate regurgitation (Figure 2).
- Blood cultures confirmed Streptococcus pneumoniae, and MRI of the brain showed scattered foci of restricted diffusion in the right insula, right occipital lobe, left cerebellar hemisphere, and bilateral frontal lobes, consistent with septic emboli.
- The patient underwent a median sternotomy with vegetation resection and mitral valve repair.
- His postoperative course was notable for transient complications, including fluid overload and hypertension, all of which were effectively managed, allowing for discharge on long-term antibiotics via a PICC line.

Conclusion

- Pediatric infective endocarditis (IE) is an exceptionally rare condition, accounting for fewer than 1 in 1000 pediatric hospital admissions, with an estimated incidence of 0.3–3.0 cases per 100,000 children per year.
- It can occur in children with no known chronic conditions or congenital heart disease.
- Early recognition and treatment are crucial to improve outcomes and prevent complications.
- Diagnosis is complex, although it has improved with the use of multimodal imaging techniques.
- Antibiotic treatment should be started early, according to causative microorganism and risk factors.
- Complications are frequent and continue to cause significant morbidity.

References

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