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FIT Clinical Decision-Making

Unusual echocardiographic findings of myocarditis mimicking an aortic runoff lesion

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BACKGROUND

Holodiastolic flow reversal in the descending aorta by spectral Doppler at the level of the diaphragm is indicative of an aortic run-off lesion or severe aortic regurgitation.

CASE

A 3 year old boy presented with 8 days of fever, conjunctivitis, dry mucous membranes and rash. Labs showed high inflammatory markers, anemia, hyponatremia, hypoalbuminemia, proteinuria and elevated BNP. Echocardiogram (echo), done for suspicion of Kawasaki disease, showed no coronary artery dilation or ectasia, flow reversal in the transverse arch and descending aorta (Fig 1, 2), a possible aortopulmonary window (APW) (Fig 3), mild systolic dysfunction, mildly dilated right ventricle, and a bicuspid aortic valve with normal function. He had no history suggestive of a heart defect or cerebrovascular malformation and was stable with a normal cardiac exam. EKG was consistent with myocarditis (Fig 4). Suspicion of myocarditis did not correlate with the echo findings. Hence, a CTA was obtained, showing no APW. He was treated for presumed tick-borne illness with rapid fever defervescence. There was normal function and resolution of flow reversal on follow-up (Fig 5).

Decision-making

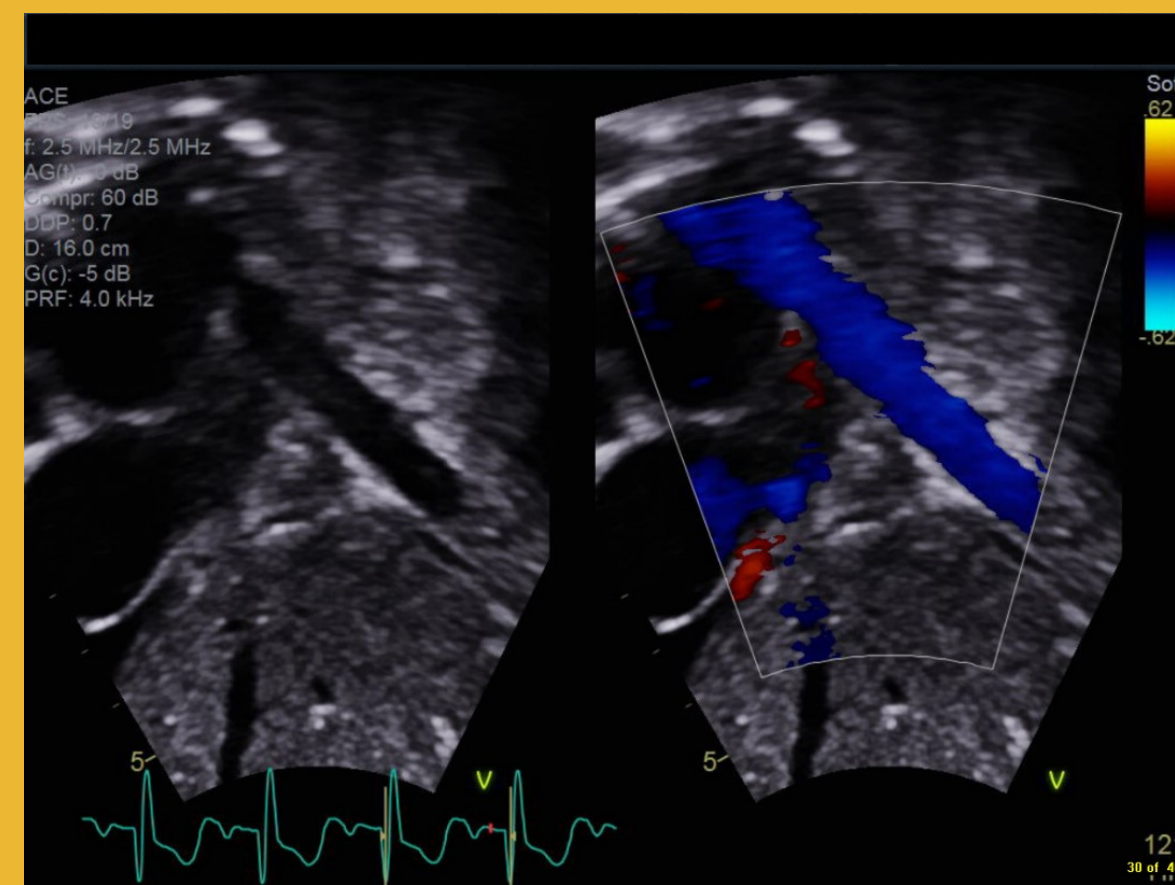
Uncommonly, we have seen aortic flow reversal in hemodynamically unstable patients without structural defects. Despite perplexing echo findings, clinical assessment led us to the correct diagnosis.

CONCLUSIONS

Myocarditis and systemic inflammation can result in transient aortic flow reversal in the absence of run-off lesions.

Systemic inflammation can result in transient aortic flow reversal in the absence of run-off lesions.

FIGURE 1



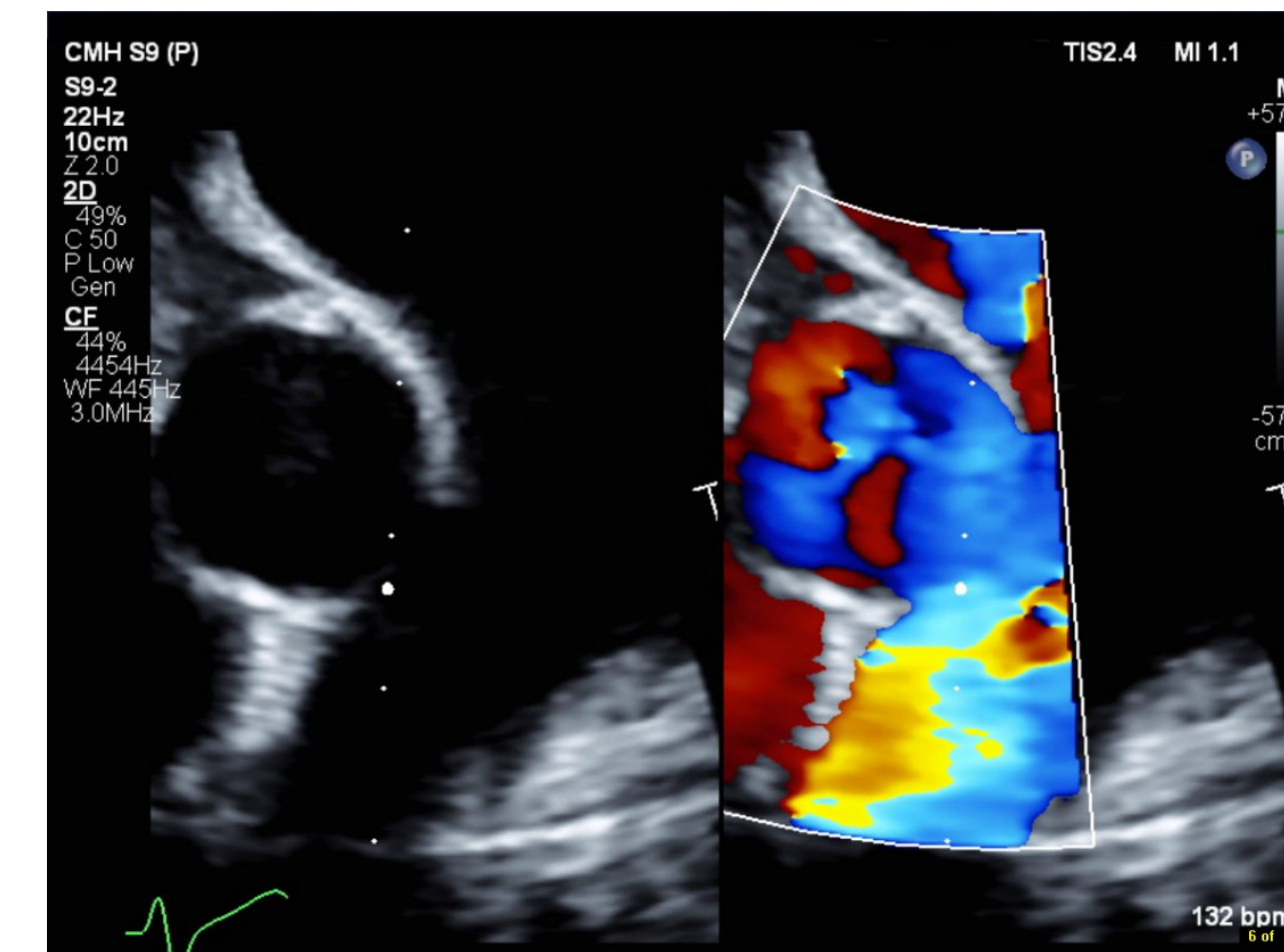
Holodiastolic flow reversal in the descending aorta.

FIGURE 2



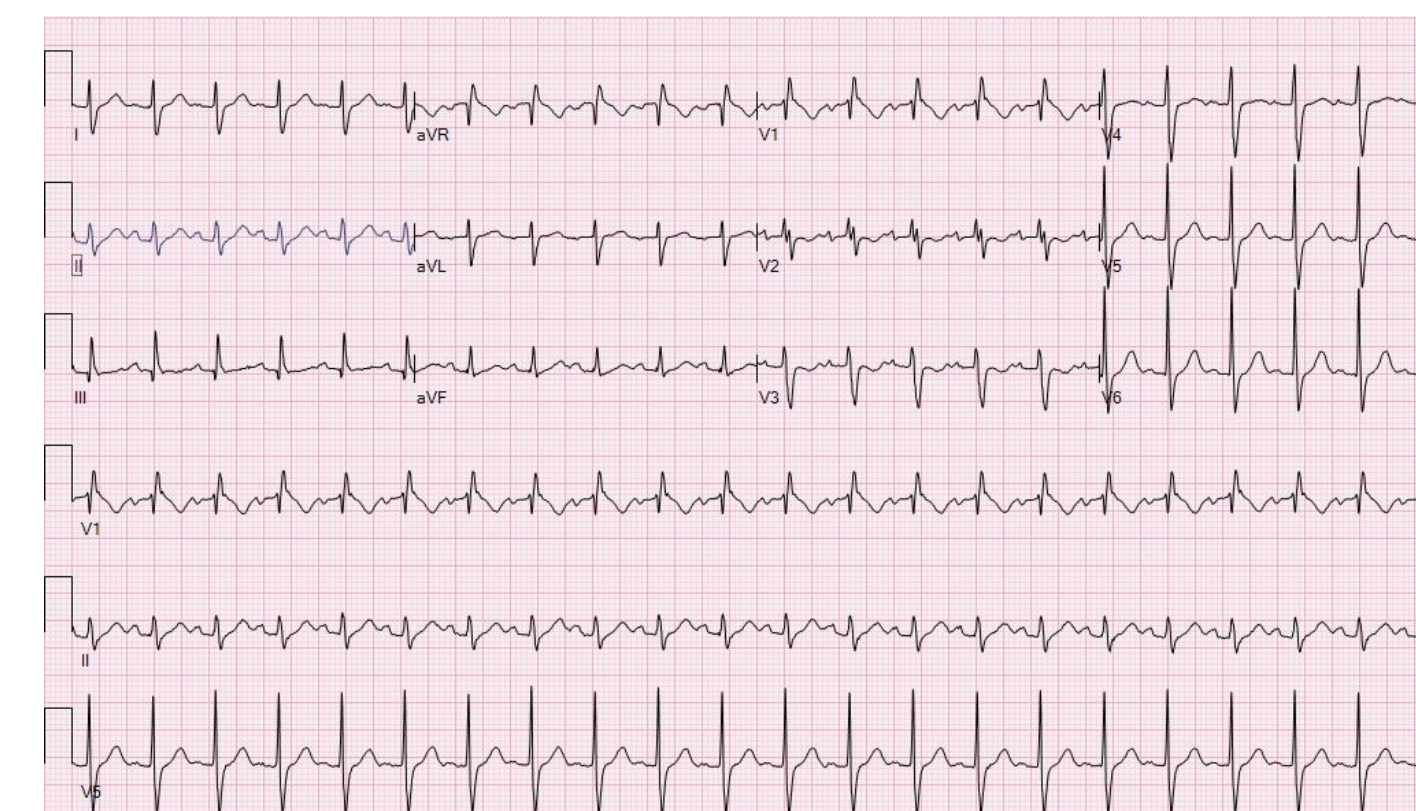
Spectral Doppler pattern of holodiastolic flow reversal.

FIGURE 3



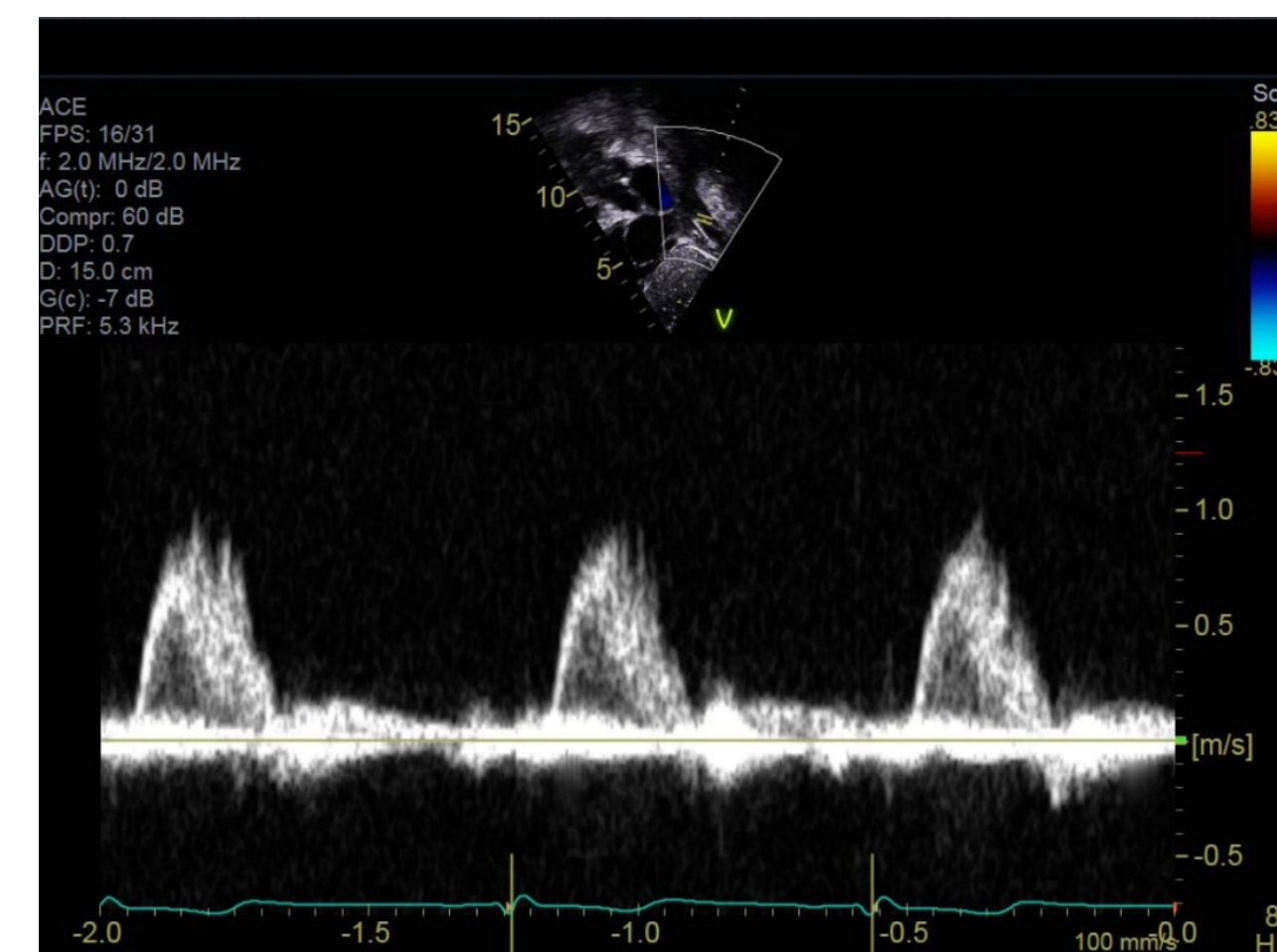
Possible defect between the pulmonary artery and descending aorta.

FIGURE 4



Initial EKG with PR prolongation and incomplete right bundle branch block.

FIGURE 5



Resolution of holodiastolic flow reversal on 48-hour echocardiogram.

DISCLOSURE INFORMATION

No disclosures.