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Unusual echocardiographic findings of myocarditis mimicking an aortic run-off lesion

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Unusual echocardiographic findings of myocarditis mimicking an aortic run-off lesion

Submitting/Presenting Author (must be a trainee): Sarah Studyvin, DO

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Resident/Ph.D/post graduate ($>$ 1 month of dedicated research time)

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IRB Number: N/A (case report)

Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

Primary author

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

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.

Methods/Design:

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 1A,B), a possible aortopulmonary window (APW) (Fig 1C), 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 1D). 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 1D).

Results:

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.

