

Pericarditis Constrictiva in a 10-Year-Old Boy After Influenza A Virus Infection

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Abstract Pericarditis constrictiva is caused by fibrotic degeneration of the pericardium and leads to impaired diastolic ventricular filling. The diagnosis of constrictive pericarditis in children remains challenging and often requires a multimodal approach. We present a case of a pericarditis constrictiva in a 10-year old boy after influenza A virus infection. Clinicians should be aware of this complication, especially in patients with symptoms of exertional dyspnea and congestive heart failure.

Keywords Pericarditis · Influenza · Diagnostic imaging

Pericarditis constrictiva is caused by fibrotic degeneration of the pericardium and leads to impaired diastolic ventricular filling. The diagnosis of constrictive pericarditis remains challenging and often requires a multimodal approach [1].

We report the case of a 10-year old boy with persistent right-sided pleural effusion and dyspnea of unclear etiology lasting for several months. Drainage of the pleural effusion resulted positive for influenza A virus. The patient was referred for cardiac magnetic resonance imaging (CMR) to rule out a cardiac cause for persisting exertional dyspnea. CMR confirmed the presence of a large right-sided pleural effusion and showed a small size of both atria and both ventricles and signs of significant venous

congestion (Fig. 1a). Cine images showed the typical flattening and bounding of the interventricular septum during cardiac contraction. The pericardium presented clearly thickened and was positive for pathologic late enhancement after contrast medium injection (Fig. 1b). These findings were consistent with a diagnosis of pericarditis constrictiva. Echocardiography confirmed the CMR findings with ventricular septal “bounce” during inspiration (Fig. 2a) and abnormal pulmonary venous Doppler flow tracing with elevated pulmonary vein atrial reversal wave (Fig. 2b). Operative pericardectomy was performed without complications.

Although in most of pericarditis constrictiva the etiology remains unclear, viral infection is the second most common cause in children. Clinicians should be aware of this complication, especially in patients with symptoms of exertional dyspnea and congestive heart failure. Surgical pericardectomy is the therapy of choice in constrictive pericarditis.

Reference

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Fig. 1 Cardiac MRI (a 4-chamber view and b short-axis view) showing a large right-sided pleural effusion (red arrow in a), bounding of the interventricular septum (asterisks in a), and a thickened pericardium (arrows in b)

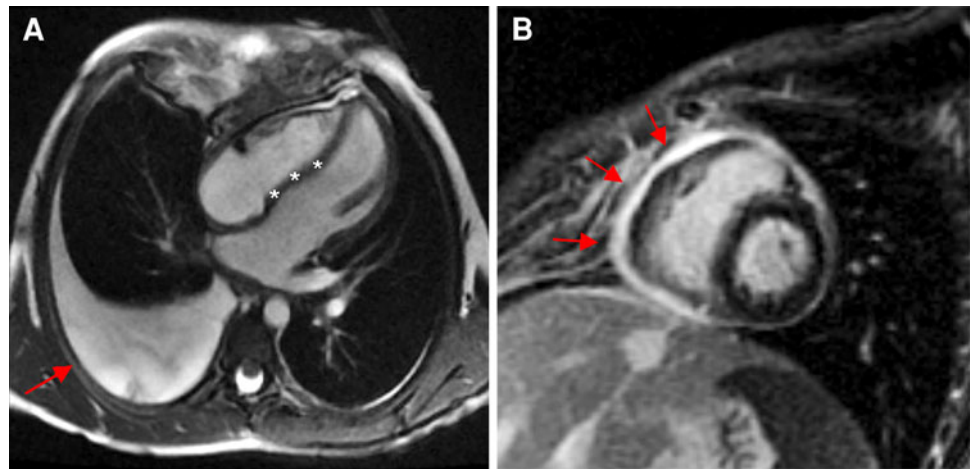


Fig. 2 Two dimensional Doppler echocardiography (a 4-chamber view and b pulse wave Doppler) illustrating the characteristic septal bounce phenomenon and (red arrows in a) abnormal pulmonary venous Doppler flow tracing with elevated pulmonary vein atrial reversal wave (arrows in b)

