A RARE AND INTERESTING PRESENTATION OF VIRAL MYOCARDITIS ASSOCIATED WITH HEART BLOCK

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Abstract: According to the available literature myocarditis is usually mild to moderate. The condition is often unnoticed. This is due to the transient nature and the overriding symptom manifestation of the primary condition. We report an unusual presentation of myocarditis. A 4 year male child was brought to the emergency room with an episode suggestive of seizures. On evaluation the cardiac monitor and ECG revealed a complete heart block and asystole as the child developed a tonic posturing. The monitor showed regaining of the previous rhythm, as the child regained his sensorium. Investigations Cardiac Trop T and CK-MB were elevated. Viral assay was positive for coxsackie B virus. Discussion- In our patient the child presented in the ER with features suggestive of a seizure disorder. This symptom was identified to be due to cardiac abnormality. The condition is reported because of the unusual presentation of myocarditis in the ER and heart block is a rare manifestation of infectious myocarditis. Thus a high suspicion is needed to diagnose mild to moderate myocarditis else this condition may have been mistreated as seizure disorder.

Keyword: myocarditis, asystole, heart block, coxsackie virus
Introduction
Myocarditis is an inflammation of the myocardium. There are various causes of myocarditis and most go un-noticed due to the transient or mild nature. The primary condition pre-dominates the mild nature of the cardiac involvement. Myocarditis severe enough to be recognized clinically is rare but the prevalence of mild and sub clinical cases are much higher. Myocarditis usually presents in infants with signs of congestive heart failure and in the older children a gradual onset of congestive heart failure and arrhythmias. Arrhythmias may be tachyarrhythmia, bradyarrhythmia or an atrioventricular block of varying degrees.

Case
A 4 year male child was brought to the emergency room with an episode of seizure. The history was suggestive of tonic posturing of all 4 limbs with a vacant stare which lasted for 2-3 minutes. The child was seen in the ER with a normal sensorium. There was a history of 2 similar episodes in the last 2 weeks. The patient had regained consciousness immediately after the episodes. There was history of intermittent fever in the past 15 days. One episode of the so described seizure was associated with high grade fever. The child sensorium and activity were normal in the interfebrile period. In the past history child had an episode of febrile seizure and an episode of afebrile seizures for which the patient was evaluated and found to be normal.

On examination the child was conscious and oriented. The general examination was normal. The pulse rate was irregularly irregular. The pulse deficit was not significant. Jugular venous pulse was not elevated. On auscultation the heart rate was irregular and heart sounds were muffled, and there was no murmur.

Evaluation
The patient was admitted in the intensive care unit. The cardiac monitor revealed a complete heart block (pic-6). A full length rhythm strip was taken which showed regular p waves regular ‘qrs’ complexes but the ‘qrs’ rate much slower than the p wave. As the cardiac monitor showed asystole (pic-1,2) the child developed tonic posturing (pic-3) lasting for 3-5 seconds. The monitor showed regaining of the previous rhythm (pic-4), the child regained his sensorium (pic-5). Such episodes recurred at frequent intervals of around 5-10 minutes for about 8-10 times over a period of two hours. A cardiologist opinion was obtained during this period. This was transient and lasted for two hours a provisional diagnosis of acquired heart block due to severe myocarditis possibly post viral infection was made.

Investigations
Cardiac Trop T and CK-MB were elevated. Viral assay was positive for coxsackie B virus. Echo revealed normal cardiac chambers and LV function. CT brain was normal. Mother was screened for connective tissue disorders with ANA which was found to be normal.

Treatment
Supportive measures were initiated in the ICU. The patient was started on methyl prednisolone. Cardiac defibrillators and pacing equipment were arranged in case of an emergency. The patient was admitted in the intensive care unit. The patient was started on methyl prednisolone. Cardiac defibrillators and pacing equipment were arranged in case of an emergency. The patient was admitted in the intensive care unit. The patient was started on methyl prednisolone. Cardiac defibrillators and pacing equipment were arranged in case of an emergency. The patient was admitted in the intensive care unit. The patient was started on methyl prednisolone. Cardiac defibrillators and pacing equipment were arranged in case of an emergency.

Follow up
The child was on regular follow up with no further complications. Steroids were tapered and stopped. Follow up evaluation with x-ray chest, CK-MB, echo was normal.

Review of literature
Coxsackie B myopericarditis has also been reported in adults since 1970 (3). A patient with mumps myocarditis complicated with a Stokes-Adams attack has been reported in September 1981 (4). This patient had to be treated with a permanent pacemaker. In study published in Korea 6.4% of cases of acute myocarditis in children developed complete heart block (4).

Discussion
Viral myocarditis is believed to be a cell mediated immunological reaction and not merely as myocardial damage from viral replication. Third degree A-V block is an arrhythmia where the atrial and ventricular activities are entirely independent of each other. The condition can be congenital or acquired. Congenital condition may be an isolated anomaly associated with other structural heart disease or may be due to maternal connective tissue disorders. In the acquired type cardiac surgery is the most common cause. The other rare causes include severe myocarditis due to Lyme carditis, acute rheumatic fever, mumps diphtheria, drugs and myocardial infarction. In our patient the child presented in the ER with features suggestive of CNS disorder and a provisional diagnosis of seizure disorder was made. It was only after admission and cardiac monitoring that the cardiac dysfunction was noticed. The tonic posturing in the child was due to asystole resulting in hypoxia. The cardiac enzymes elevation further confirmed our suspicion. Viral assay done showed positive coxsackie B serology. Coxsackie B virus is a type of entero virus. Clinical manifestation are protean ranging from asymptomatic infection or undifferentiated febrile respiratory illnesses in the majority to less frequent severe disease like meningoencephalitis. The condition is reported because of the atypical presentation of myocarditis in the ER and Heart block is a rare presentation of infectious myocarditis. Thus a high suspicion is needed to diagnose mild to moderate myocarditis.

References
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