

Early repolarization and myocardial bridging in an adolescent with chest pain

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We present a case with chest pain who had ST-segment elevation (STE) and increased troponin and who was found to have myocardial bridging (MB). Early repolarization pattern in the inferior leads was thought to result from ischemia caused by MB which adds uniqueness to presentation.

Case:

A 17-year-old boy was admitted to the emergency department with burning, exertional chest pain that persisted for 2 hours. Initial ECG showed normal sinus rhythm with 2-mm STE in the inferior leads. On admission, his troponin was increased at 0.42 mg/ml and during 2 days it was undulant. Echocardiography showed no abnormality. Coronary artery imaging with multidetector computed tomography (MDCT) revealed a coronary myocardial bridging with a length of 12 mm in the middle tract of the left anterior descending artery (LAD). Magnetic resonance imaging (MRI) showed a reduced perfusion on segments 7 and 12 consonant with ischemia and a weak contrast uptake consonant with subendocardial infarct. These lesions matched the areas supplied by bridged segment of LAD which was defined by MDCT. An exercise stress test, based on the Bruce protocol, revealed no ischemic changes or arrhythmias. The patient was restricted from strenuous exertion. Metoprolol was prescribed and he was discharged without any problems. After 6-month follow-up, he had no cardiac symptoms, and his ECG remained normal.

Conclusion:

Differentiating STE caused by acute myocardial infarction (AMI) from all other non-AMI etiologies, especially acute pericarditis-myocarditis and ER, can be challenging. In our patient, anginal chest pain was thought to be due to myocardial bridging of the LAD considering the possibility of a systolic narrowing of the coronary artery with subsequent ischemia. MB should be included in the differential diagnosis of children presenting with chest pain and signs of ischemia even in the absence of ventricular hypertrophy.