Not Acute Myocardial Infarction in a Teenager Due to Adderall XR

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The case report of Sylvester and Agarwala [4] purports to be that of a myocardial infarction in a teenager receiving methylphenidate. The electrocardiogram (ECG) shown is typical of early repolarization changes that are a normal variant and that often cause concern when a young (usually male) patient presents to the emergency room with chest pain. This presentation is, of course, also typical of acute inflammatory pericarditis.

Although there is an impression that raised serum levels of cardiac enzymes are specific for myocardial infarction, this is not necessarily the case. Certainly, when the clinical picture is that of myocardial ischemia, these raised serum levels of cardiac enzymes are extremely helpful in establishing or excluding myocardial infarction. When the clinical picture is not that of myocardial ischemia, then they should not automatically be attributed to myocardial infarction, and there are many noncardiac causes [2].

The most likely cause for the reported patient's disorder is acute pericarditis or possibly myopericarditis, although with the latter, even higher levels of cardiac enzymes might have been expected. The headache for several days before the presentation would be typical of a viral prodrome, which in itself can cause a rise in serum troponin. Viral titers performed at presentation and in the recovery phase would have been very helpful.

Unless the ECG changes reversed completely when the pain subsided, the disorder also is highly unlikely to have been coronary spasm, in which the major ST elevation typically should have been coved upward. If it was myocardial infarction, then the ECG would have shown progressive changes.

Although some reports have described myocardial ischemia when stimulant medication for attention deficit hyperactivity disorder (ADHD) has been used in overdose or abuse [1, 3], this case does not add to these concerns with normal dosing.

References

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