Case report

A case of myocardial infarction with an atypical presentation

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Abstract

A 34-year-old male attended the outpatient department (OPD) of a private clinic with the history of dyspepsia and when evaluated was found to have angina with an atypical presentation. He was eventually referred to a tertiary care center. Coronary angiogram was done and the patient was found to have a single vessel disease which was managed medically. The case has been presented for its atypical presentation.

Key words: angina, coronary artery disease, myocardial infarction

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Introduction

India is one among the countries that have undergone metamorphosis due to globalization and modernization. With this increasing trend, the life style, food habits and the psychosocial stress levels of Indians have changed to varied extents. This leads to various cardiovascular morbidities and mortalities. According to American Heart Association (AHA) statistics, 17.3 million deaths every year occur due to cardiovascular disease globally and this may follow an increasing trend to about 23.6 million by 2030[1.] They have also stated that 80% of deaths due to cardiovascular diseases occur in low and middle income countries. According to the report of the Registrar General of India (2009), cardiovascular diseases contribute to the leading cause of death in all socioeconomic classes.[2]

Case Report

A 34-year-old married male painter, who was a non-smoker and an alcoholic, who had stopped consuming alcohol for the last one month, had complaints of discomfort in the abdomen and abdominal pain, vomiting and mild breathlessness while having his lunch at his work place. He attended the outpatient department (OPD) of a nearby clinic, where he was examined and found to have normal vital signs. A proton pump inhibitor was administered intravenously and an electrocardiogram (ECG) was taken as a routine measure.

As the ECG showed T wave inversion in lead II, lead III and V2-V6 leads (as shown in Figure 1), the patient was immediately referred to a tertiary care hospital. He went home as he was relieved of the symptoms. The next day he consulted another physician for the same complaints and another ECG was taken. The second ECG also showed T wave inversion in lead II, lead III and V2-V6 leads (as shown in Figure 2).

Figure 1: ECG taken on Day 1 showing T wave inversion in Leads II, III and V2- V6.

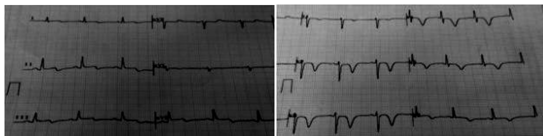
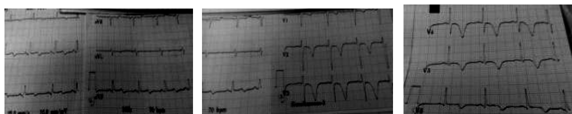


Figure 2: ECG taken on Day 2 showing T wave inversion in Leads II, III, V2-V6 and avF



The patient was explained about the risks of the condition and referred to the tertiary care center immediately, where he was admitted in the Intensive Care Unit (ICU), under the care of a cardiologist. Cardiac enzymes were tested and and creatine kinase MB (CK-MB) was found to be elevated (30ng/dl). Troponin I was positive. The lipid profile examination revealed that high density lipoprotein (HDL) was very low (34 mg/dl). The other blood investigations were found to be normal. The cardiologists planned to do a percutaneous angiogram.

The angiogram revealed that the Left Anterior Descending artery (LAD) was re-canalised with a 30% residual lesion in the LAD. The Right Coronary Artery (RCA) was dominant and the Left Circumflex Artery (LCX) was a non dominant vessel. The patient was advised medical management, life style modifications and regular follow-up with cardiologists and discharged. The course of illness in the hospital was uneventful.

Discussion

Atypical presentation: The case has been presented for its atypical presentation, in a young male with predominant abdominal symptoms and mild breathlessness, who after evaluation was diagnosed to have Non ST Elevated Myocardial Infarction (NSTEMI), Coronary Artery Disease (CAD) and treated medically. In a meta- analysis done by Chauhan *et al.*, there was an increasing trend observed in the prevalence rates of cardiovascular diseases in the age group of 20- 69 years in both genders.[3] Also the prevalence of cardiovascular diseases was found to have increased in the lower socioeconomic group in their study[3]. In an analytical study by Briedger *et al.,* gastrointestinal or respiratory symptoms like nausea, vomiting and abdominal discomfort and dyspnea, in the absence of chest pain were included as an atypical presentation.[4] Policy makers need to focus on creating an awareness about this and about the need for avoiding the risk factors, in order to prevent future mortality. Since in our case scenario too, the patient presented with vomiting and abdominal symptoms, and as the other blood investigations for acute pancreatitis or alcoholic gastritis were found to be normal but ECG changes were present, it is being considered as an atypical presentation of myocardial infarction.

Cardiac markers: The troponin markers are normally not present in the blood of healthy individuals. In approximately 30% of individuals presented with rest pain, cardiac markers have been found to be present and this is highly associated with NSTEMI (Non ST Elevated

Myocardial Infarction) as reported by Braunwald *et al.* in their guidelines for management of coronary artery disease.[5] Among the various serum markers, CK-MB is identified as being a much more cardiac specific marker for the diagnosis of acute myocardial infarction. It is detectable within four to six hours of onset, attaining its peak in 12- 24 hours and it reaches the normal value in two to three days.[6]

Pathophysiology: Based on the INTERHEART study, Gupta *et al.* reported that the standard risk factors like smoking, abnormal lipids, hypertension, diabetes, increased waist hip ratio, sedentary life style habits, psychosocial stress and insufficient intake of fruits and vegetables lead to more than 90% of acute cardiovascular events in the South Asian region.[7] Atherosclerosis leading to plaque formation and stenosis of the vessel is the major patho-physiological mechanism in coronary artery disease. Also disruptions of the plaques represent a 'solid –state' predisposing to thrombosis. Now the treatment is directed in two phases initially focusing on the culprit lesion and then stabilizing the plaques.[8]

Conclusion

Patients with myocardial infarction can sometimes present with atypical symptoms. As many deaths occur due to cardiovascular disease in all socioeconomic classes throughout the world, the clinician should be suspicious of the atypical presentations of acute coronary events and a widespread awareness regarding the problem and the prevention of risk factors should be created by the policy makers.

Acknowledgement: Nil

Conflicts of interest: Nil

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