International Journal of Research in Medical Sciences
Rao BVN et al. Int J Res Med Sci. 2020 Sep;8(9):3386-3388
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20203700

Case Report

Belching on exertion - coronary artery disease

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Received: 15 July 2020
Accepted: 08 August 2020

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ABSTRACT

Belching is a ubiquitous symptom in clinical practice. It could be due to gastrointestinal disease or behavioral, functional and physiological causes. It's association with acute myocardial infarction, more frequently, with inferior myocardial infarction, has been well established. But exertional belching as a cardinal symptom of coronary artery disease is not well documented and its presence is not mentioned in any standard textbooks. It is rarely reported in the literature. Here we present a female diabetic, who presented with exertional belching as a lone complaint. She was confirmed to have significant coronary artery disease necessitating an intervention. So it may be prudent if clinicians are aware of the fact that exertional belching could be of cardiac origin and needs further evaluation and intervention.

Keywords: Belching, Exertion, Coronary artery disease, Inferior myocardial infarction, Right coronary artery

INTRODUCTION

Belching or eructation is defined as an audible escape of air from the esophagus or the stomach into the pharynx. [1] It may be voluntary or involuntary and involuntary belching usually follows a meal. Belching is considered abnormal if it is excessive and disturbing. Belching is classified as supragastric or gastric depending on the origin of refluxed gas.[2] Individuals suffering from belching usually have aerophagia. It may also be associated with gastroesophageal reflux disease and functional dyspepsia. In patients with isolated symptoms of excessive belching, psychological and behavioral factors play an important role.

It has been established that myocardial infarction or ischemia may present as dyspepsia, belching and indigestion. But exertional belching without chest pain or upper abdominal pain, as a cardinal sign of significant coronary artery disease (CAD) is not yet established. There are no randomized trials to answer the question. Medline literature search from 1966 to 08/2001 done by Jason Smith and Simon Carley of Manchester Royal Infirmary found only two relevant papers.[3]Both papers were questionnaire studies. The studies revealed belching as a symptom of inferior myocardial infarction with 84 % of specificity and belching as a symptom of cardiac ischaemia with positive predictive value of 72%.[4,5]

In view of the paucity of information on the association of belching with coronary artery disease, we are presenting an interesting case with exertional belching as a sole symptom of coronary artery disease.

CASE REPORT

Fifty two year old female patient came to our hospital medical outpatient department with a history of belching for the last two months. She visited a gastroenterologist for relief from her disturbing complaint. She underwent upper gastrointestinal endoscopy, which revealed mild, non-erosive gastritis. Gastro physician prescribed her a Pantoprazole and Domperidone long acting combination to be taken once daily before food and later increased to twice a day as there was no response. In addition, she was given an antacid containing Magnesium hydroxide, Aluminum hydroxide and Dimethicone to be taken three times a day after meals. Her belching was not relieved with this therapy, hence she visited our hospital. She is a known diabetic on oral hypoglycemic agents for the last

ten years. Her diabetes was under control, and she had no complications related to diabetes.

Her belching was not related to meal or act of swallowing. It was precipitated by climbing the stairs or carrying weights. Even on an empty stomach, she used to suffer from belching when going up stairs in her duplex house to serve her husband a morning coffee. Belching on exertion was much worse after a meal. She did not notice a chest pain or sweating. She used to feel breathless during repeated belching which used to disappear along with belching.

As her symptoms were suggestive of coronary origin than gastrointestinal, electrocardiography (ECG) and echocardiography (ECHO) were done. T waves were inverted in inferior leads of the ECG (Figure1). ECHO did not reveal any abnormality. She couldn't perform a treadmill test due to knee osteoarthritis. She was subjected to coronary angiogram (CAG) in view of abnormal ECG and exertional belching, an equivalent of unstable angina. CAG revealed 50% stenosis of mid left anterior descending (LAD) (Figure 2) coronary artery and 95% stenosis of mid right coronary artery (RCA) (Figure 3). She underwent percutaneous transluminal coronary angioplasty (PTCA) with implantation of a third generation everolimus eluting stent (Figure 4). She hasn't been belching on exertion since then. At one year of follow up, she was asymptomatic.

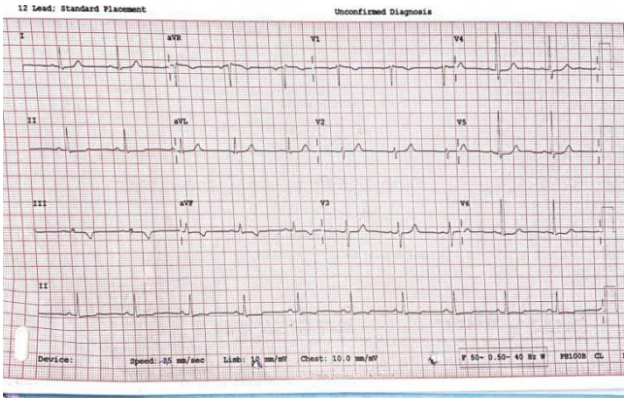

Figure 1: ECG depicting inversion of T waves in leads L2, L3, and AVF.

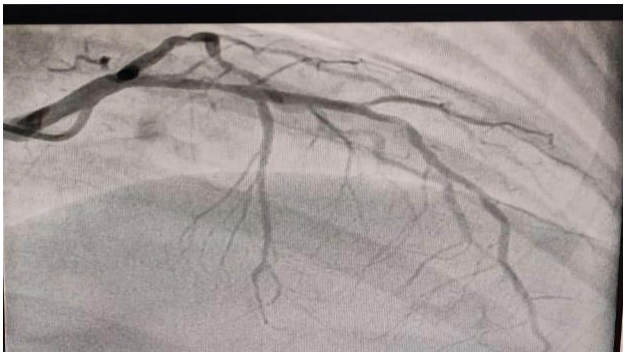

Figure 2: CAG showing 50% stenosis of mid LAD.

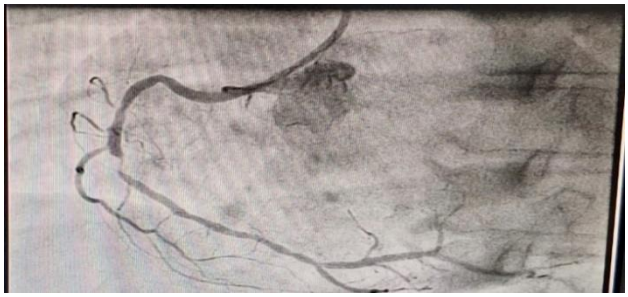

Figure 3: CAG Showing 95% stenosis mid RCA.

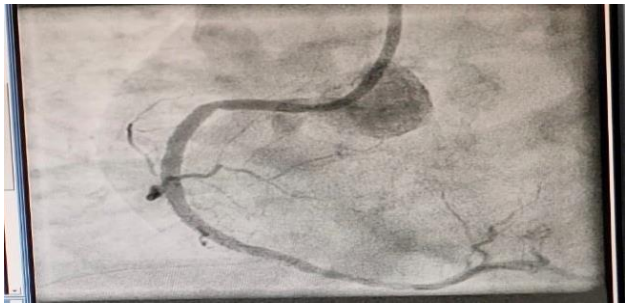

Figure 4: CAG post PTCA showing good flow through RCA.

DISCUSSION

Belching and eructation are very common symptoms in clinical practice. Its association with Inferior myocardial infarction along with other symptoms of chest pain, epigastric pain, breathlessness, vomiting, diaphoresis and brady arrhythmia was well established.[6] Partial relief of anginal pain by belching had been reported. [7] El-Shafie had published a case of belching by exertion of two month duration, as the only complaint in a 63 year male patient, who was found to have 98% occlusion of the right coronary artery and remained asymptomatic post coronary artery bypass surgery.[8] At times It may be difficult to differentiate angina like esophageal pain and cardiac pain by history alone. The symptoms that point to esophageal pain were poor correlation to exertion, pain that continued as a background ache, retrosternal pain without lateral radiation, pain that disturbs the sleep, and presence of esophageal symptoms.[9]

It may not be true that coronary artery disease presents with typical chest pain. In a study by Herman, et al it was found that the patients presenting with typical angina were no more likely to have inducible myocardial ischemia on stress testing than the patients with atypical symptoms.[10] Acute myocardial infarction presenting with atypical chest pain has higher long term mortality compared with typical chest pain.[11] Yarrows, et al reported a case of coronary artery disease presenting with belching. A 68-year male physician presented with burping during exercise of 4-6 month's duration. He had 80 % stenosis of a large left anterior descending artery that also was feeding distal and mid inferior walls. [12] Often, gastrointestinal symptoms and belching were

produced by right coronary artery occlusion inducing vagal stimulation as depicted in our patient. Nora Turi-kovrts et al described an elderly 83-year-old woman, a known case of chronic ischemic disease presented with a new symptom of loud uncontrollable belching. She was found to have significant coronary occlusion requiring intervention.[13]

Though belching as a lone symptom of CAD was rarely encountered, its occurrence must be recognized by the clinician. Delayed diagnosis may lead to complications and irreversible myocardial damage. Early further evaluation of such complaints with exercise testing (TMT) or coronary angiography is warranted. As the patient may not reveal such complaint to the physician presuming a gastric origin, the physician should interview for such occurrence positively.

CONCLUSION

Exertional belching is a symptom of significant coronary artery disease. Warrants prompt attention, further investigation and coronary intervention if required.

ACKNOWLEDGEMENT

The authors sincerely thank Dr. C. Vijayalakshmi, FRCOG, Chairperson of Queen's NRI Hospital, Visakhapatnam for permission to publish this work.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not Required

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Cite this article as: Rao BVN, Mahesh G. Belching on exertion - coronary artery disease. Int J Res Med Sci 2020;8:3386-8.