A 37-year-old man with recurrent fainting: a short communication

Marina Leitman1*, Itzhak Zyssman1, Shalom Abuhatzera1, Margarita Vasserman2, Christina Ben Baruh1, and Zvi Vered1

1Department of Cardiology, Assaf Harofeh Medical Center and Sackler School of Medicine, Tel Aviv University, Israel; and 2Department of Radiology, Assaf Harofeh Medical Center and Sackler School of Medicine, Tel Aviv University, Israel

Received 6 December 2009; accepted after revision 20 February 2010; online publish-ahead-of-print 26 March 2010

The possible influence of the oesophageal diseases on the heart is well known. Deglutition syncope and pre-syncope have been described in relation to arrhythmias or mechanical problems. We report here a case of recurrent pre-syncope in a patient after gastric banding.

Keywords
- Gastric banding
- Syncope
- Left atrium

Introduction

The left atrium is an inferoposteriorly located low pressure chamber with thin wall, vulnerable to impression from the adjacent structures, in particular the oesophagus and the descending aorta, which are located very near the left atrium.1 Oesophageal disorders may affect the heart. Syncope/pre-syncope can be associated with swallowing due to atrioventricular block triggered by hypersensitive vagotonic reflex2 and paroxysmal atrial fibrillation associated with gastro-oesophageal reflux.3 Syncope has been associated with oesophageal Schatzki ring and nutcracker oesophagus,4 and also with compression of the left atrium by a hiatal hernia.5,6 We describe here a case of recurrent pre-syncope in a patient 2 years after gastric banding.

Case description

A 37-year-old man, with a history of gastric band 2 years ago, complained of recurrent pre-syncope during the last 3 months. The patient had consulted his surgeon several months ago, and the surgeon inflated the balloon of his gastric band. Vital signs on admission and electrocardiogram were normal. Echocardiography revealed a mass, which appeared to compress the left atrium and cause a collapse of the left atrium (Figure 1). Morning fasting computed tomographic (CT) scan revealed wide oesophagus in a close proximity to the left atrium (Figure 2). A repeat echocardiography next morning demonstrated that the mass is extra-cardiac, but less prominent than in the first echo exam (Figure 3).

Comment

Syncope post-swallowing is a rare phenomenon, while loss of consciousness may occur during or following deglutition, mainly due to pharyngeal or oesophageal pathology.7 Oesophageal syncope results from exaggeration of the normal vaso-vagal reflex and is associated with extreme bradycardia, asystole,7 and supraventricular tachycardia.8,9 The mechanoreceptors in the lower oesophagus may play an important role in post-swallowing syncope10 and can explain vaso-vagal mechanism of the deglutition syncope. In our patient, fainting occurred during swallowing and heart rate disturbances were not observed. Extreme mechanical compression of the left atrium by displacement of the stomach into the mediastinum resulted in pulmonary congestion and improved after decompression of the stomach.11 The heart may be affected by masses originating from the anterior, posterior, or superior mediastinum; by encroachment and compression. Encroachment means distortion or partial displacement of one or more cardiac chambers by a contiguous mediastinal mass, without adverse haemodynamic effect, and compression results in clinical manifestations similar to tampo-nade. Anterior masses tend to compress the right heart chambers, whereas posterior ones (hiatal hernia, oesophageal carcinoma) the left atrium and ventricle.12 Left atrium can be compressed by a bronchogenic cyst,13 lymphoma.14 The heart haemodynamics can be affected by the pressure on the superior vena cava from a thymoma, simulating constrictive pericarditis physiology.15 Pressure on the pulmonary veins by lung metastases can cause effort dyspnoea.16 van Rooijen and van den Merkhof1 divide
structures that can encroach or compress left atrium into four categories: category A: gastrointestinal structures, category B: mediastinal structures, category C: aorta and intrapericardial structures, and category D: pulmonary structures.

Megaoesophagus, a rare complication of gastric banding, occurs in 1.9%, with the mean interval to development \(\approx 32\) months following banding (range 24–36). Careful history of our patient revealed that he had consulted his surgeon several months ago, and the surgeon inflated the balloon of his gastric band. Since then, he has experienced five episodes of sudden fainting mostly shortly after meals.

The first echo (Figure 1) was performed in the evening, after several meals, and revealed almost complete collapse of the left atrium, compressed with a dilated oesophagus. The second echo was performed in the morning, while still fasting, and the oesophagus was empty. CT scan also was performed in fasting condition, early morning, and revealed a dilated oesophagus. The proposed mechanism of the syncope in our patient was mechanical compression of the left atrium with dilated oesophagus after a large meal, resulting in decreased filling of the left ventricle and a transient reduction of cardiac output. The patient was referred to the surgeon for deflation of the balloon of gastric band.

Left atrial compression can be easily detected by transthoracic echocardiography and determine further diagnostic procedures.

**Supplementary data**

Supplementary data are available at *European Journal of Echocardiography* online.

**References**


