

Reversible Atrial Fibrillation Secondary to a Megaesophagus

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Abstract

Case Report

Background: Atrial fibrillation is the most common clinically significant cardiac arrhythmia. It occurs when a diffuse and chaotic pattern of electrical activity in the atria suppresses or replaces the normal sinus mechanism. This disorder is a major cause of morbidity, mortality, and health care expenditure. **Case Presentation:** In this article, we will present a rare case of a 93-year-old men who was admitted with atrial fibrillation secondary to megaesophagus that was reversible to sinus rhythm after dilation and removal of food debris from the esophagus. **Conclusion:** The megaesophagus can lead to atrial fibrillation by compression of the left atrium, which is reversible after dilatation sessions and the evacuation of food debris in the esophagus.

Keywords: Megaesophagus, atrial fibrillation, sinus rhythm, manometry, esophageal dilation.

Abbreviations: AF: atrial fibrillation

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BACKGROUND

Megaesophagus also known as cardiospasm or achalasia, is a rare disorder of unknown origin. It characterized by the absence of the esophageal peristalsis and by an incomplete or an absent relaxation of the lower oesophageal sphincter. Esophageal manometry is the gold standard diagnostic tool because it can show the absence of esophageal body peristalsis, the elevation of lower esophageal sphincter pressure and the absence of complete relaxation of the lower esophageal sphincter during swallowing.

Atrial fibrillation is the most common clinically significant cardiac arrhythmia. It occurs when a diffuse and chaotic pattern of electrical activity in the atria suppresses or replaces the normal sinus mechanism. This disorder is a major cause of morbidity, mortality, and health care expenditure. The chance of developing atrial fibrillation at age 40 years or older is about 25% in men and women. This arrhythmia accounts for about one-third of all strokes, and 30% of all patients with atrial fibrillation have a family history of the disease [1].

We present a rare case of a patient who presented to the cardiology department for palpitation and vomiting. The diagnosis of atrial fibrillation was made and echo cardiography objectified a compressive mass of the left atrium and paraclinical explorations showing a compressing megaesophagus.

CASE PRESENTATION

A 93-year-old men, presented at the cardiology department of military teaching hospital Mohammed V with 10 days history of palpitations, associated with post prandial vomiting and chest pain. The associated signs were: regurgitation, cough and progressive dysphagia. Our patient has no medical or surgical history.

Clinical examination revealed a stable hemodynamic state with an irregular heartbeat; the rest of the clinical exam was normal apart from the dehydration folds.

An electrocardiogram (ECG) showed heart rhythm in atrial fibrillation with heart rate between 130-150 beats/min (Figure 1).

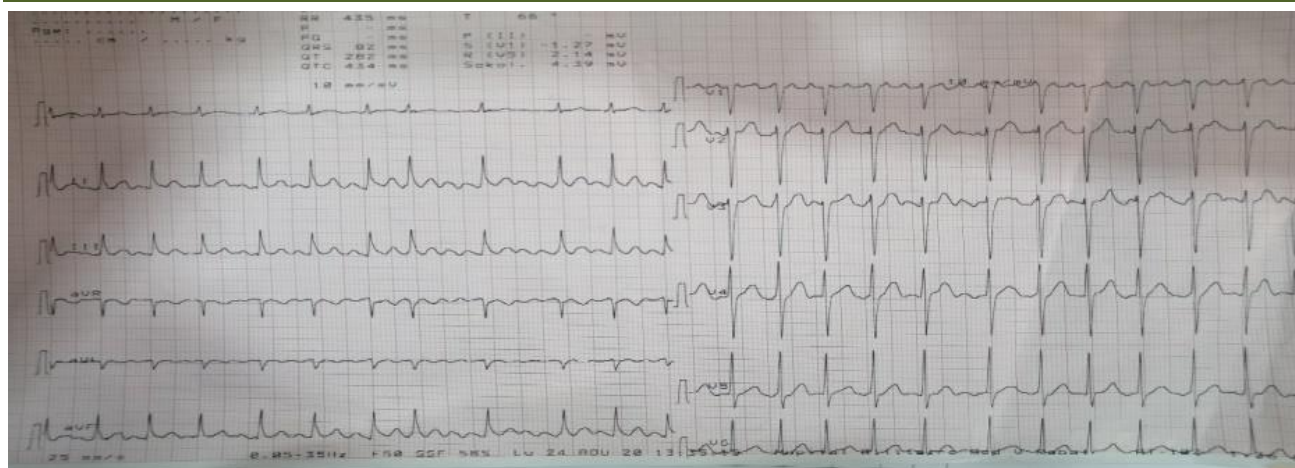


Figure 1: ECG with atrial fibrillation

Echocardiography was performed and shows a compressive mass around the left atrium without impact on left ventricular function, with an ejection fraction

(EF):80% (Figure 2). The rest of the biological investigations are normal.



Figure 2: Echocardiography with a compressive mass around the left atrium

Given the worsening of the digestive symptomatology: post prandial vomiting with dysphagia, the patient was transferred to the gastroenterology department after having administered a beta bloker for the atrial fibrillation.

We realized in the first place the upper endoscopy which shows an enlarged esophagus with significant food stasis.

We completed by a chest scan which objectified a megaesophagus without organic lesion (Figure 3).



Figure 3: Megaesophagus without organic lesion

Esophageal manometry confirmed the diagnosis of achalasia. We realized two esophageal dilation sessions with evacuations of the food debris,

the results were favorable; on the digestive level: the patient no longer presents dysphagia or vomiting, on the cardiac level: the arrhythmia becomes sinus rhythm.

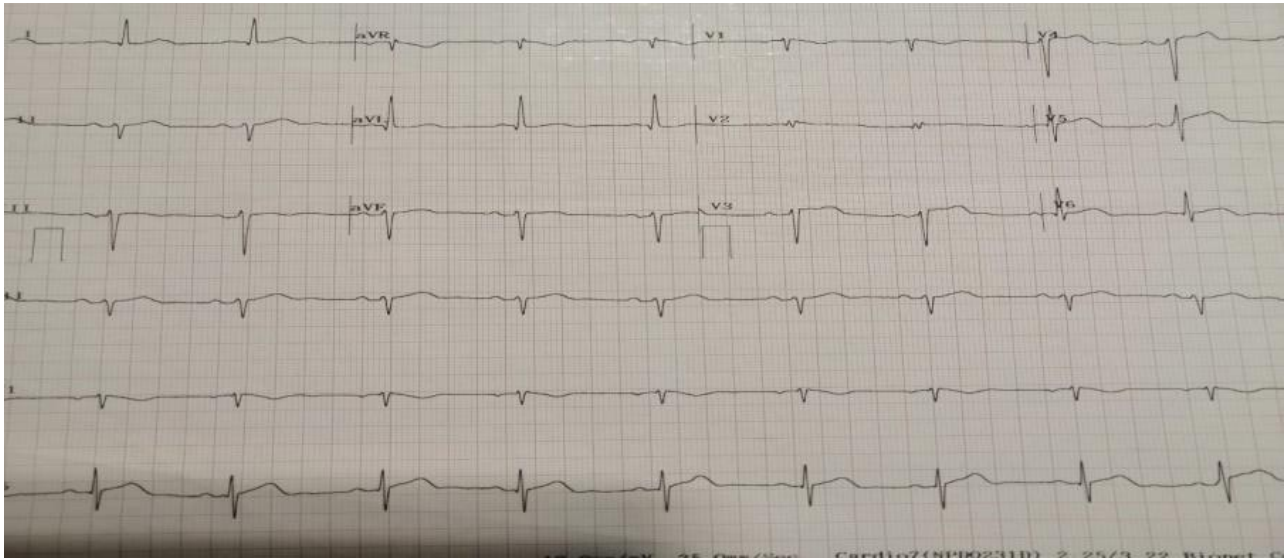


Figure 4: ECG with sinus rhythm

DISCUSSION

The elderly population is increasing significantly throughout the world. Estimated that the world population aged over 65 will double over the next 40 years [2, 3]. Moreover, it is known that with advancing age there is a decrease in function in several body organs, and among the several changes observed, motility of the digestive tract is also included [4-9]. It has been shown manometric findings similar to those observed in patients with achalasia (decrease in distal esophageal amplitude and complete relaxation of LES) in asymptomatic elderly people with no comorbidity [10, 11, 8, 12].

Many studies has demonstrate an association between cardiac arrhythmia and achalasia [13]. In patients with achalasia, food transit can temporary be improved by the valsalva maneuver [14]. Left atrial radiofrequency ablation can get complicated by esophageal perforation and mediastinitis this is explained by The anatomical proximity of the esophagus with the left atrium [14].

There are studies that have proven that abnormal vagal function can contribute to the pathogenesis of achalasia, using 3 non-invasive tests; 7 of 15 patients with achalasia present abnormalities of cardiovascular reflex function, in patients with autonomic neuropathy there have been abnormal heart rate responses to the valsalva maneuver, deep breathing and standing [15].

There is an understandable reluctance to subject frail elderly patients to cardiomyotomy [16]. However, cardiomyotomy is a remarkably safe operation [17] and a laparoscopic approach to it is an

additional option; the outcome in elderly patients is not yet well defined [16].

The transformation of the heart rhythm of atrial fibrillation into sinus rhythm is the consequence of the evacuation of food debris from the cervical esophagus this can be justified either by vagal repression, or by the relief of the pressure effect carried out at the atria by the volume of food debris [18].

CONCLUSION

There is an association between atrial fibrillation and the megaesophagus which was proven by several studies. In our case, the esophageal dilation associated with the evacuation of food debris to cause the conversion of the heart rate into sinus rhythm.

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