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Romheld's Gastrocardiac Syndrome, diagnosing a complex of cardiologic and gastroenterologic symptoms

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Abstract

In clinical practice among cardiac patients, symptoms of palpitations diagnosed as premature beats or episodes of atrial fibrillation (AF) are very frequently reported. One of the most common diseases in the field of gastroenterology is gastroesophageal reflux disease (GERD) . However, it may happen that the coincidence of the above-mentioned disease entities may predispose to the development of arrhythmias.

In this article we describe the case of a 65-year-old man, without previously diagnosed diseases, in whom a clear association of arrhythmias with gastrointestinal complaints was observed.

The presence of a burning sensation in the lower sternal region and typical symptoms resulting from esophagitis aggravated by triggers allows us to suspect esophageal reflux disease. Diagnostic tests performed for concomitant cardiac diseases did not reveal an organic cause of the arrhythmia. The recurrent course of symptoms observed in the present case and the analysis of the cause-effect course made us to diagnose gastrointestinal syndrome, also referred to as Romheld's Syndrome.

Keywords: gastrocardiac syndrome, arrhythmia, gastroesophageal reflux, atrial fibrillation, Romheld syndrome

Introduction

Gastroesophageal syndrome, also called Romheld syndrome, is a disease entity at the borderline of gastroenterology and cardiology. The clinical manifestation of the above syndrome combines typical gastroesophageal and also cardiac symptoms. (1)

The involvement of topography and anatomical proximity of the left atrium and esophagus, as well as the action of inflammatory factors, has been described in the etiology of the disease. (2),(3) In addition, there are many common predisposing features in the pathogenesis of atrial fibrillation as well as gastroesophageal reflux disease, such as older age or obesity. (4)

Consumption of certain foods, especially hearty, spicy foods, as well as alcohol or coffee, may also contribute to impaired lower esophageal sphincter relaxation, reflux formation and exacerbation of the above symptoms.(5)

An additional risk factor is also an increase in abdominal crowding pressure predisposing to further aggravation of lower esophageal sphincter (LES) insufficiency and increased inflammatory processes due to acidic gastric contents entering the esophagus.(6) With the increase in pressure, there is secondary distension of the stomach and esophageal walls which causes an increase in vagus nerve tone which can also contribute to arrhythmias. (7)

The occurrence of these symptoms, as well as the demonstration of a temporal relationship between them, raises suspicion of the possibility of gastrointestinal syndrome.

Case report

Male, 65 years old, not previously hospitalized, never a smoker, not taking any medications on a regular basis, including non-steroidal anti-inflammatory drugs, with no known comorbidities, hypertension or diabetes.

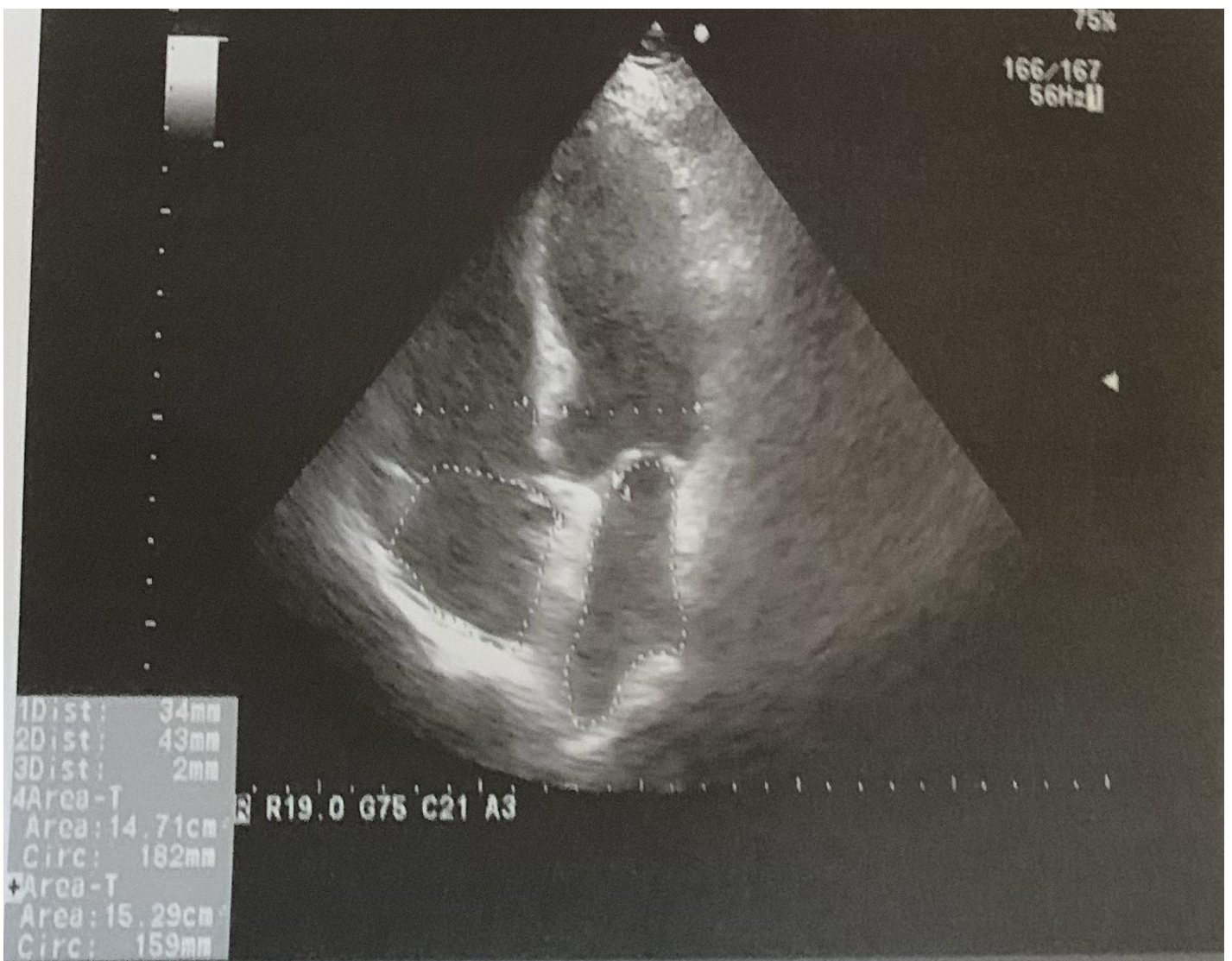
The patient reported complaints of palpitations, esophageal symptoms and periodic burning sensations in the lower retrosternal area. Gastrointestinal symptoms were exacerbated after exercise especially when bending over, also during stressful situations. Increased physical activity, especially bending work, on the other hand, never caused stenocardial complaints or cardiac arrhythmias. In addition, the aggravation of the above symptoms was accompanied by the intake of

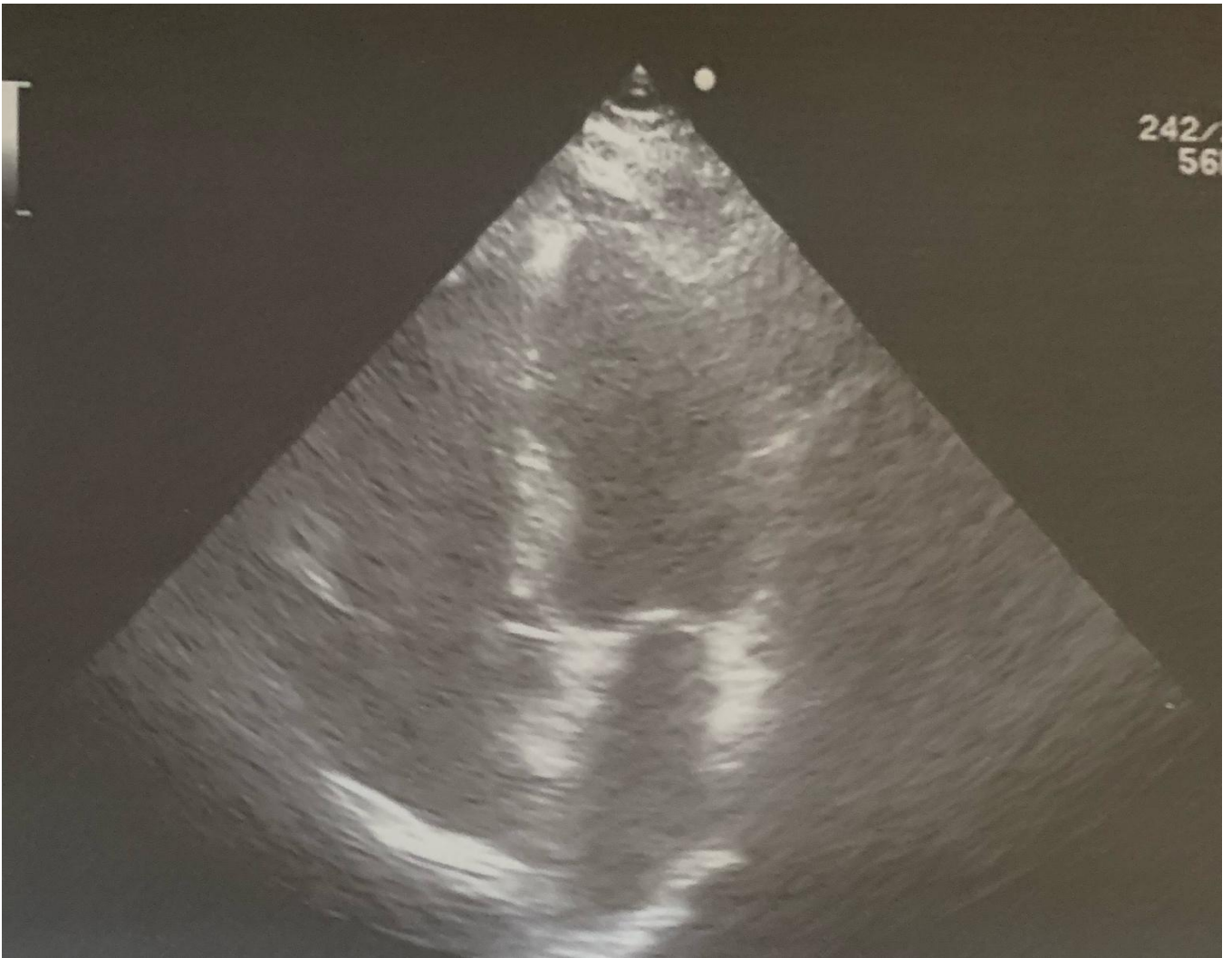
heavy meals, especially in the evening, immediately before bedtime, the consumption of coffee and even small amounts of alcohol.

A set of examinations was performed at the Internal Medicine Department of the Independent Health Care Facility in Krasnystaw, based on which conclusions were drawn as to the coincidence of the following gastrointestinal and cardiac symptoms. The results of laboratory tests were not abnormal: glycemic measurement was normal, lipid profile was not elevated, electrolyte determinations including potassium ions were also within the reference norms, TSH levels were also determined, which further excluded hyperthyroidism as a potential cause of atrial fibrillation.

In order to diagnose the patient's perceived incidents of cardiac arrhythmia, an electrocardiogram was performed, which showed sinus rhythm, steady at 75/minute. The heart axis was intermediate, with no signs of ischemia, ventricular hypertrophy or conduction disturbances.

Extended cardiac diagnostics in the form of echocardiography, however, also showed no pathological conditions that could predispose to cardiac arrhythmias. No valvular lesions, normal systolic and diastolic function and volume of the heart cavities. Ejection fraction normal.

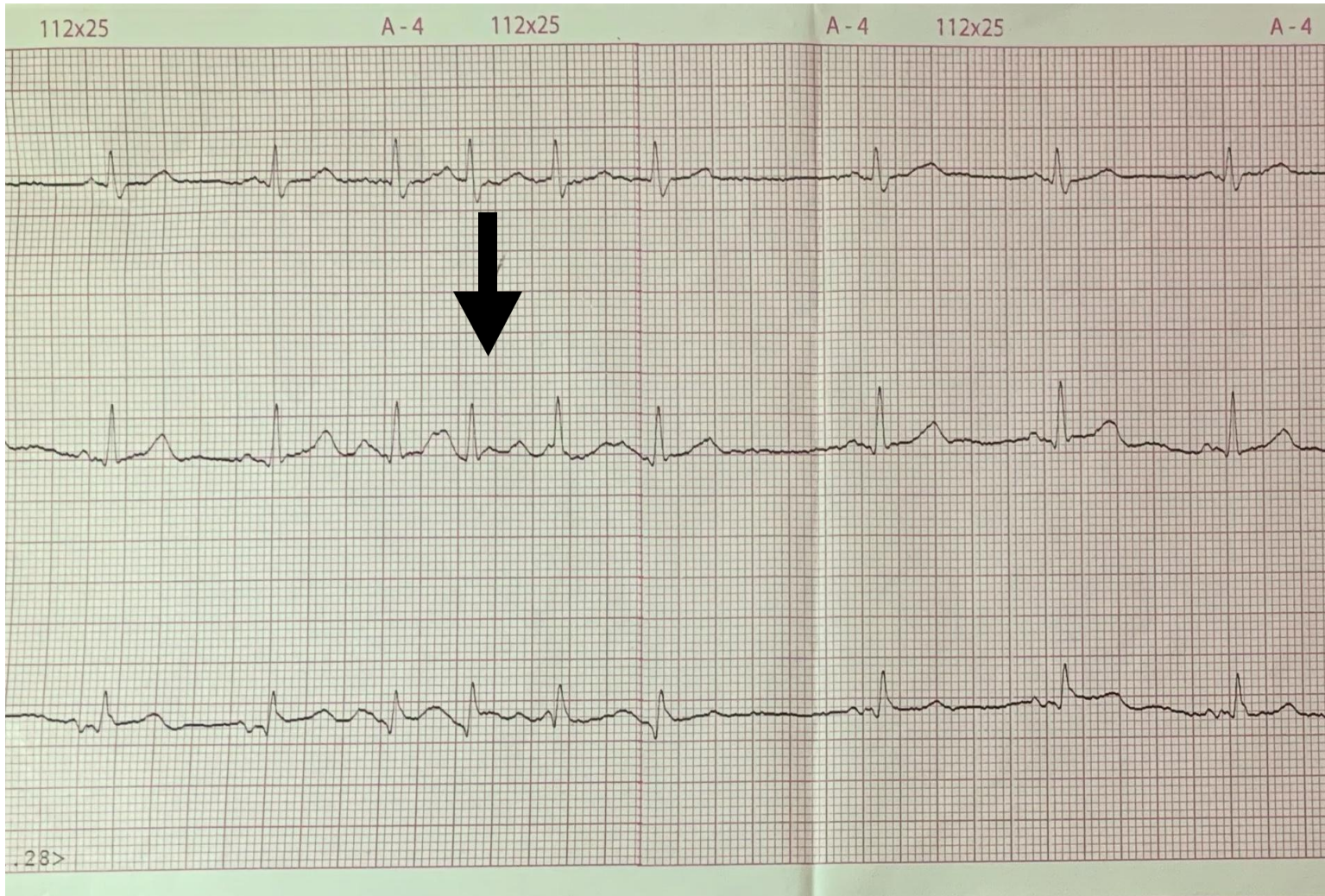




Echocardiography images showing normal four-chamber view

After ruling out an organic cardiac cause, the patient was initially ordered to eliminate products that aggravate esophageal reflux disease, in addition, proton pump inhibitors and sleeping with the head elevated were included. Adherence to non-pharmacological regimens and the use of medications contributed to the resolution of symptoms. Two months later, an electrocardiogram (ECG) was again performed when the patient again noted erratic heart rate activity after introducing small amounts of coffee into his diet. The patient indicated that the symptoms felt at the time occurred only in the early morning hours. During the follow-up examination, an interesting phenomenon was found, the patient noted that he was experiencing the occurrence of arrhythmias as a result of provoked swallowing, which was documented in the electrocardiographic record in the form of premature supraventricular beats.

An excerpt from the second electrocardiogram (ECG) recording, in which premature supraventricular beats in the form of salvos are presented. As a result of provoked swallowing by the patient.



On the same day, the patient had a brief episode of atrial fibrillation. A blood test showed no electrolyte abnormalities, and the echocardiographic image did not differ from that performed during the initial onset of symptoms. During the patient's stay in the hospital, there was a spontaneous return of sinus rhythm. Analyzing the course of the above changes and the patient's report of experiencing anxiety before the onset of arrhythmia the prolonged-acting beta blocker metoprolol succinate was included in the treatment. In addition, adherence to non-pharmacological methods of preventing the aggravation of gastroesophageal reflux disease, such as avoiding eating heavy meals in the late evening hours and quitting coffee and alcohol, ultimately contributed to the resolution of both gastroesophageal and cardiac symptoms.

Discussion

The picture of the presented disease entity describes an overlapping series of symptoms. Diagnosis of gastroesophageal reflux-Romheld syndrome is not unequivocal and is based on the simultaneous occurrence of clinically related symptoms, as well as the exclusion of structural changes that are potential causes of the formation of cardiac arrhythmias. (8) Considering gastroesophageal reflux disease (GERD) in the pathomechanism of arrhythmia formation is based on history and typical complaints reported by the patient, such as burning sensation in the lower part of the sternum, aggravated by triggers.(9)

Therapeutic management boils down to a change in dietary habits and the use of medications that lower the pH of gastric innards(10),(11),(12) which contributes to the resolution of gastrointestinal complaints, in this case also to the resolution of cardiac symptoms.

In order to detect an organic cause of AF, we perform cardiac tests such as electrocardiography, echocardiography, and we also check whether electrolyte disorders such as hypokalemia or hyperthyroidism may be the cause of AF Diagnosis of occurring extra contractions should be deepened by setting up an ECG Holter. (13) On the basis of the aforementioned tests, we make decisions on further therapy. In the above case, already the introduction of non-pharmacological and pharmacological treatment of gastroesophageal reflux disease contributes to the resolution of cardiac symptoms, for this reason it seemed reasonable to continue to observe the course and occurrence of cardiac symptoms after the exclusion of abnormalities in the cardiological tests performed.

The reoccurrence of atrial fibrillation after clinical improvement at the time, which was a consequence of non-compliance with the recommendations of therapy for esophageal reflux disease, as well as the absence of abnormalities in cardiological examinations should raise the thesis of a causal sequence of the above changes to the occurrence of arrhythmias. Recognizing this correlation, we are able to protect the patient from possible invasive cardioversion therapy as a result of repeated episodes of atrial fibrillation (AF), as well as offer alternative preventive pharmacotherapy against the occurrence of further attacks. (14),(15)

Based on guidelines for the treatment of paroxysmal atrial fibrillation, the introduction of low doses of the prolonged-acting beta blocker metoprolol succinate (16) and adherence to non-pharmacological methods of preventing the worsening of reflux disease, such as abstaining from heavy meals and avoiding coffee and alcohol (17),(18) the patient was discharged from the hospital. In addition, it was also recommended to avoid intense exercise that contributes to increased

abdominal pressure. (19),(20) The effect of the above treatment proved effective, and to date there have been no recurrent episodes of atrial fibrillation.

Conclusions

The case presented here underscores the importance of a comprehensive evaluation during the collected history and vigilance in spotting the links between individual disease symptoms. Many times it can happen that one disease is caused by more than one cause, often outside of a single system.

In the described sequence of events in the patient under study, noticing the relationship in the occurrence of atrial fibrillation and the appearance of accessory contractions in relation to the current diet and the increase in abdominal pressure can prevent the performance of unnecessary attempts to restore sinus rhythm due to repeated arrhythmias, and appropriately adjust the treatment, adequate to the actual clinical condition.

DISCLOSURE

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