

Atrial Fibrillation and Anemia Associated Hiatal Hernia

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ABSTRACT

Atrial fibrillation (AF) is the most common cardiac arrhythmia. It is an irregular and often rapid heart rate that can increase your risk of strokes, heart failure and other heart-related complications. There are many reasons in the etiology of AF. Hiatal hernia (HH) is rare but one of them.

Case report: In this case, we present a case of AF associated with HH. HH causes protrusion of the abdominal contents into the chest cavity, and can directly impinge on the left atrium.

Conclusion: The anatomical proximity of the left atrium to herniated gastric contents raises the possibility of mechanical irritation of the atria, autonomic neural connections or inflammation that may increase the risk for AF.

Keywords: Atrial Fibrillation; Anemia; Hiatal Hernia

INTRODUCTION

Atrial fibrillation (AF) is the most common cardiac arrhythmia. It is an irregular and often rapid heart rate that can increase your risk of strokes, heart failure and other heart-related complications. There are many reasons in the etiology of AF.¹ Hiatal hernia (HH) is rare but one of them. HH causes protrusion of the abdominal contents into the chest cavity, and can directly impinge on the left atrium. The anatomical proximity of the left atrium to herniated gastric contents raises the possibility of mechanical irritation of the atria, autonomic neural connections or inflammation that may increase the risk for AF. Chronic disease such as diabetes mellitus, chronic heart failure, obesity, hypertension, thyroid hormone dysfunctions and anemia can be associated with AF.²⁻⁵ In this case, we present a case of AF and anemia associated with HH.

CASE REPORT

A 77 year old woman with hiatal hernia, cholelithiasis and AF presented to our hospital with hematemesis for 2 days. The patient did not have any hematemesis before. She didn't have history of chronic obstructive pulmonary disease and heart failure. She was not taking any medication regularly. The patient was not a smoker. On physical examination, her blood pressure was 120/80 mm Hg, temperature was 37 °C and pulse rate 140 beats per minute, arrhythmic. Her electrocardiography showed AF with rapid ventricular response. There were no pathological findings on the physical examination. Chest radiogram of the patient displayed increased gastric fundus air above diaphragmatic level (Figure 1). Pleural fluid accumulation (PFA) was observed in the right costophrenic angle. PFA can be occurred due to HH induced mechanic compression and cardiac insufficiency. Hemoglobin 9.8 g/dl, hematocrit 28.9%, platelet 241.000/mm³, leukocyte 5.050/mm³ were

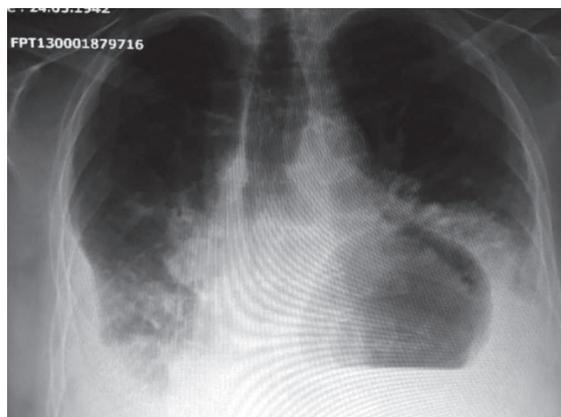


Figure-1: Chest radiogram of the patient

found in the patient's hemogram. Oral intake of the patient was closed. Gastroscopy of the patient revealed an ulcer in the antrum of the stomach and hiatal hernia. Biopsy taken from ulcer site. There was no active bleeding in the ulcer. The patient was treated with Proton pump inhibitor 40 mg, alginate acid and IV isotonic hydration.

Mild tricuspid and mitral regurgitation and biatrial expansion were detected on transthoracic echocardiography. Thyroid disease and any other potential metabolic causes for tachycardia were excluded. The patient had a hernia to the left thoracic region in the chest X ray and thorax CT. The patient's hemorrhage findings were regressed. Three days later, complaints were regressed. She started oral soft food intake. The patient was discharged after ten days without complaint. She started to take 40 mg Proton pump inhibitor orally once a day for 8 weeks, Calcium channel blocker 60 mg orally and Low-molecular-weight heparin 0,6 ml subcutaneously twice a day. The patient was then referred to the internal medicine outpatient clinic for control.

DISCUSSION

AF is the most common cardiac arrhythmia in the community. The RR interval is irregular and P waves is seen in some leads, there are no distinct P waves. AF is generally seen

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more frequently in male patients and in older age. It is also a potent risk factor for ischemic stroke and heart failure.⁶ The risk of a stroke in atrial fibrillation depends on your age (you have a higher risk as you age) and on whether you have high blood pressure, diabetes, a history of heart failure or a previous stroke, and other factors. Hiatal hernia are characterized by a protrusion of the stomach into the thoracic cavity through a widening of the right crus of the diaphragm.⁷ Although the etiology of most hiatus hernias is speculative, trauma, congenital malformation, and iatrogenic factors have been implicated in some patients with HH. Hiatal hernia is associated with an increased prevalence of AF in patients. The occurrence of AF in patients with HH are higher than AF without HH.⁸ It has been observed in the literature that AF develops in cases with hiatal hernia. AF was found to be resistant in cases with hiatal hernia. Atrial compression is seen as the cause of this condition. Large HH can cause extensive posterior cardiac compression, including frequent compression of the basal inferior left ventricular wall, with such changes resolving post HH repair.⁹

CONCLUSION

This case report suggests that AF may be caused by a hiatus hernia. These cases are more resistant to treatment. Hiatal hernia should be investigated as a potential pathogenetic mechanism in patients with AF. Cases with HH should be closely monitored for the development of AF.

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