

Syncope Revealing Celiac Disease: A Case Report and Review of the Literature

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Abstract

Celiac disease is an autoimmune disorder initially affecting the small intestine, characterized by chronic malabsorption in genetically predisposed individuals. Following the ingestion of foods containing gluten. Although previously thought to be rare, celiac disease may be present in up to 1% of the general population [1]. Celiac disease is frequently associated with iron deficiency anemia, dermatitis herpetiformis, selective IgA deficiency, thyroid disorders, diabetes mellitus and various connective tissue disorders, but it is rarely associated with cardiac damage [2]. We describe the case of a 45-year-old patient who consulted initially for syncope and in whom the immunological assessment showed serological abnormalities in favor of celiac disease. This patient had never presented any clinical signs of celiac disease. Putting the patient on a gluten-free diet helped improve his heart function.

Keywords: syncope; celiac disease; dilated cardiomyopathy; gluten-free diet

Clinical presentation

We report the case of a 45-year-old patient who presented to the emergency department of Ibn Rochd University Hospital for two episodes of syncope upon exertion. He reported no infectious symptoms and had no chest pain, palpitation or dyspnea and had no gastrointestinal symptoms other than nausea preceding syncopal episodes. The patient was not taking medications and had no symptoms, allergies. There was no family history of celiac disease or other autoimmune diseases.

Physical examination was normal. Resting electrocardiogram (ECG) showed right bundle branch block with first degree atrioventricular block. The ETT revealed an aspect of global hypokinetic heart disease in the dilated stage in severe systolic dysfunction with an LVEF of 38% and an average MI. The biological assessment revealed an anemic syndrome with anemia of 9.2 hypochromic microcytic, a ferritinemia of 10.6 ng/ml, an inflammatory syndrome on serum protein electrophoresis, positive anti-transglutaminase Iga antibodies at 132 U/ml and negative IgG at 4.2 with villous atrophy on duodenal biopsy. The coronary arteries were angiographically healthy; the phospho-calcium balance and the thyroid balance returned normal with negative viral serologies.

While in the hospital, the patient's cardiac monitor showed a highly symptomatic six-second pause with high-grade atrioventricular block after minimal walking. A pacemaker was then inserted. The patient began following a gluten-free diet. 08 months later, he experienced resolution of

his symptoms. Pacemaker interrogation showed 99% ventricular pacing before and 3.5% ventricular pacing five months after initiation of the gluten-free diet. The patient's resting ECG also returned to normal and ETT showed improvement in left ventricular ejection fraction to 40%.

Discussion

Although rare, several types of cardiac involvement have been reported in association with celiac disease. These include dilated cardiomyopathy, myocarditis, pericarditis, and conduction disturbances. As shown in two large population-based cohort studies, patients with celiac disease have an increased risk of idiopathic dilated cardiomyopathy (hazard ratio [HR] 1.73, 95% confidence interval [CI] 1.0-3.0) [3]. and atrial fibrillation (HR 1.34, 95% CI 1.24-1.44). [4]. In a cross-sectional study, Frustaci and colleagues [5]. found biopsy-confirmed celiac disease in 4.4% of 187 myocarditis patients, compared with 0.3% in the control group ($p < 0.003$). All nine patients had iron deficiency anemia without gastrointestinal disorders,

Rare cardiac manifestations of celiac disease in adults have been described in case reports and include pericardial effusion [6]. and pericarditis. [7]. Cases of heart block associated with celiac disease have been reported, but they have been associated with other contributing conditions. In two separate case reports, patients were found to have atrioventricular block in the presence of celiac disease and idiopathic pulmonary hemosiderosis. [8,9]. The authors of these reports suggested that the conduction disorder heart

disease was linked to pulmonary hemosiderosis rather than celiac disease. Dilated cardiomyopathy was a concomitant diagnosis observed in two other celiac disease patients presenting with heart block. [10,11].

Several explanations for cardiac involvement in celiac disease have been proposed. These include nutritional deficiencies, abnormal intestinal permeability increasing the absorption of luminal antigens, and a direct autoimmune reaction targeting antigens present in both the myocardium and small intestine. [12].

A gluten-free diet is the mainstay of treatment for classic celiac disease. Patients typically experience almost complete resolution of gastrointestinal symptoms within a few weeks to a few months. In patients with celiac disease-associated dilated cardiomyopathy, a small observational study documented improvement in left ventricular function in two of three patients after 28 months of adherence to a gluten-free diet.[13]. However, in previously described case reports, a gluten-free diet did not improve conduction disease in patients with celiac disease and dilated cardiomyopathy or heart block; All patients required insertion of a permanent pacemaker after 12 to 22 months of follow-up. [8–11].

Conclusion

Although further studies are needed to definitively establish a causal relationship between celiac disease and cardiac conduction disorders, clinicians should be aware of the association between celiac disease and heart diseases such as dilated cardiomyopathy or l unexplained arrhythmia.

Important messages

- Celiac disease can manifest as heart disease without gastrointestinal symptoms.
- Celiac disease should be investigated in young patients with unexplained dilated cardiomyopathy, myocarditis or conduction disorder.
- A gluten-free diet may improve cardiac symptoms in patients with celiac disease and concomitant heart disease.

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