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CASE REPORT

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A Rare Presentation of Coeliac Disease; Intractable Itching with Recurrent Heart Attack and Dermatitis Herpetiformis

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ABSTRACT

Coeliac disease (CD) is a systemic disease of the unwarranted immune reaction to gluten and is associated with a 10% increased risk of cardiovascular disease. Here we present a patient with recurrent myocardial ischemia and intractable itching who was eventually diagnosed with CD. A 53-year-old man presented to the allergy department due to intractable itching that was resistant to antihistamine therapy. In addition, despite successful percutaneous intervention with stent implantation to the right coronary artery, there was an ST segment elevation with myocardial infarction (MI) in the lower wall that had occurred three times. After dermatitis herpetiformis was reported as a result of the biopsy performed from the lesions, duodenal biopsy confirmed the diagnosis of CD. Diagnosis of CD with atypical presentation can be difficult. Cardiovascular risk is increased in patients with celiac disease compared to the normal population. Itching is an important symptom that needs to be evaluated in detail, even without the typical gastrointestinal manifestations of CD.

Keywords: Allergy, coeliac disease, dermatitis herpetiformis, myocardial infarction, omalizumab, recurrent stenosis

INTRODUCTION

Coeliac disease (CD) is a gluten-induced systemic immune-mediated disease seen in genetically susceptible individuals. CD may present with variable clinical presentations, characterized by varying degrees of damage to the small intestine mucosa as a result of a specific serum autoantibody response (1). Peptides appearing due to incomplete digestion of gluten; binds to alleles of patients carrying the human leukocyte antigen (HLA) -DQ2 and HLA-DQ8. This situation induces the inflammatory response of T cells and leads to crypt hyperplasia, intraepithelial lymphocytosis and villous atrophy in the small intestine (2). Although we say that CD primarily affects the small intestine, it demonstrates itself in the form of diarrhea, abdominal discomfort / pain and weight loss, and can affect every tissue in the body (3). Complications of untreated CD may include neurological disorders. (4) atherosclerosis and cardiovascular diseases (5), and dermatitis herpetiformis (DH) (6). Extraintestinal components of CD and their prevalence are shown in Table I.

DH is an inflammatory skin disease characterized by typical histopathological and immunopathological findings with a chronic recurrent course (7) and is also the best defined extraintestinal sign of CD (8). Affected patients typically develop itchy inflammatory papules and grouped polymorphic lesions of erythema, and urticarial plaques on the sacral region, knees, scalp, neck or buttocks (7). All patients with DH have some degree of CD and it is very likely that these patients reflect the full spectrum of histological and clinical CD (8).

Studies have exposed that particular cardiovascular diseases, such as myocarditis, cardiomyopathies or arrhythmias and also early atherosclerosis, are more common in patients with CD than in those without the

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Table I: Extraintestinal manifestations of Coeliac Disease.

Manifestation	Prevalence
Anemia	Common
Reduced bone density	Common
Arthritis	Common
Dermatitis Herpetiformis	Uncommon
Eczema or psoriasis	Uncommon
Gluten ataxia	Rare
Autism	Not clearly associated
Schizophrenia	Not clearly associated
Peripheral neuropathy	Common
Short stature	Common in pediatric populations
Delayed puberty	Uncommon
Hepatitis	Common
Cardiovascular manifestations	Not clearly associated
Splenic manifestations	Uncommon
Renal manifestations	Rare
Pulmonary manifestations	Rare
Pancreatic manifestations	Uncommon
Reproductive manifestations including impaired fertility	Uncommon
Dental	Uncommon

disease. (9). CD is associated with a 19% higher increased risk of ischemic heart disease (10) and 43% all-cause mortality 1 year after myocardial infarction, compared to the general population. (11). With this case we wanted to emphasize the increased cardiovascular risk in an undiagnosed CD patient without additional risk factors.

Here we present a patient who had persistent myocardial ischemia and intractable itching as well as neurological disorders and was finally diagnosed with CD. The consent of the patient for submitting the case in the form of an article was requested and photographs were taken with his consent.

CASE REPORT

A 53-year-old male with a known diagnosis of hypertension and coronary artery disease presented to the allergy department with generalized itching in January 2017. His history revealed that his complaints had started after angioplasty for myocardial infarction two months ago. He had a history of recurrent inferior myocardial ischemia and a suspicion of allergy to the stent material. He stated that the itching was accompanied by his current complaints. In February 2015, he had his first inferior MI. There was no risk factor except for a 20 pack year smoking history which he quitted thereafter. There were LDA d1 ostial 80% stenosis, ostial 90% stenosis in Cx Om1, RCA 95% thrombus stenosis, and PLA 70% PDA 60% stenosis on the coronary angiography. A Simflex brand stent had been placed to the RCA, and Simchrone brand Cobalt Chromium containing stents to the PLA, PDA and Om1.

On July 2015, the patient had presented to the neurology department with the complaint of numbness in the hands and feet and walking disruption. Hypothenar atrophy, hypoactive deep tendon reflexes in lower the extremity, and tandem gait disorder were found on physical examination. In addition, his motor power was 4/5. After MR, EMG examinations were performed. He was diagnosed with chronic demyelinating neuropathy and intravenous immunoglobulin (IVIG) therapy was started. However, there was no significant improvement in his complaints despite IVIG treatment.

Two years later, in January 2017, the patient had presented to the emergency department with dyspnea on effort, and coronary angiography was performed due to inferior MI. Angiography revealed 98% stenosis in RCA and 80% stenosis in LAD. A stent decision was made for RCA and a 4.5x20 mm rebel brand platinum chrome containing stent was placed. Between March 2017 and January 2019, he had repeatedly presented to the emergency department; one with chest pain, one with dyspnea, and one with burning in his chest. Although acute coronary syndrome was ruled out once, hospitalization and angiography were recommended at the following admissions. During this period, the patient was taking isosorbide monohydrate 50 mg, diltiazem, clopidogrel, and acetylsalicylic acid regularly. In October 2019, he had been hospitalized in the coronary intensive care unit due to inferior MI. The angiography showed Hazy LAD proximal stent, decreased vessel diameter in d1 (90%) and d2 (90%) ostial regions and total occlusion in proximal RCA . With percutaneous intervention decision for RCA, a 2.75x24 mm braun brand drug-coated stent with sirolimus release was implanted in the lesion distal to the RCA. One month later, in November, the patient was re-evaluated at the cardiology department and was referred to the allergy department for his allergic complaints. His itching did not respond to antihistamine treatment. The S-1000 European

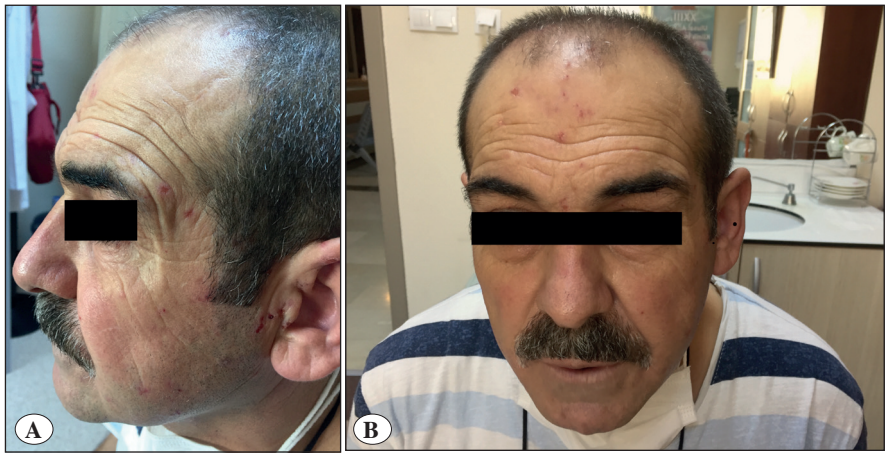

Figure 1. A,B) Grouped polymorphic lesions consisting of erythema on the forehead.

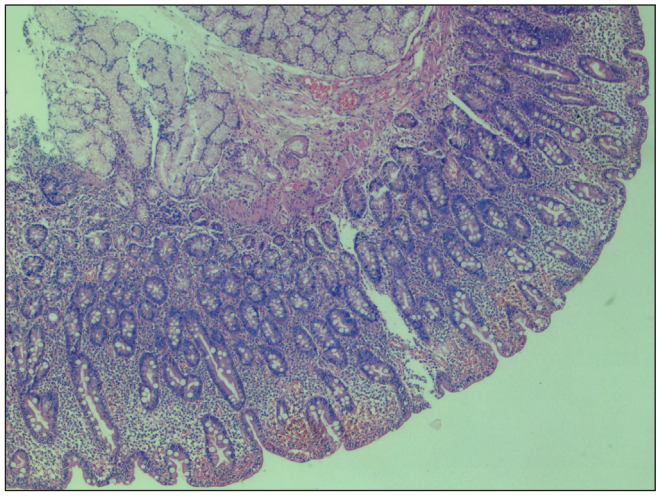

Figure 2. Thickening of nonspecific folds.

Baseline Series Chemotechnique Diognostics patch test was performed regarding hypersensitivity reactions due to stent material and it was negative. Moreover, the patch test with the chromium cobalt substance in the stent material was also negative.

In the laboratory tests performed for the etiology, general biochemistry tests were normal, hemoglobin value in complete blood count was 11.9 g/dL (13.2-17.3), MCV 84.8 fL (80-100), eosinophil 50/microL, C3 153 mg/ dl (90-180), C4 28.2 mg/dl (10-40); HBs ag, anti HBs, anti HBc, anti-HIV were all negative; sedimentation 26mm/h (0-20), C-reactive protein 1.44 mg/L (0-5), total IgE 126.9 IU/mL (0-100), TSH 1.31 uIU/mL (0.27-4.2), anti TPO 9 IU/ml (0-34), the Helicobacter pylori test was negative, d-dimer was 208 ng/ml (0-243), ferritin 17.46 ng/mL (30-400), vitamin B12 level 199 pg/mL (197-771). The patient was found to have iron deficiency anemia and B12 deficiency. After necessary replacements were suggested, he was referred to the gastroenterology department when he mentioned the occasional black stool. He was scheduled for endoscopy and colonoscopy, which he did not accept.

As the patient continued to show allergic symptoms, omalizumab was started. After the first dose of omalizumab, complaints of itching decreased significantly and it was administered three times. Although there was no itching during this period, the patient's skin lesions were consulted to dermatology as lesions became apparent (Figure 1A,B). During the follow-up, a biopsy was planned in order to investigate the etiology of the patient's complaints. The patient was reconsulted with gastroenterology, and endoscopy and colonoscopy were performed. The corpus, small curvature and antrum mucosa of the stomach were thinned and the vascular network was clear as there was combing in the duodenal bulbus and duodenal mucosa. Biopsy was performed. The pathology result was as follows: significant atrophy in the villi, increased intraepithelial lymphocytes, plasma-rich mixed cell infiltration in the lamina propria and crypt hypertrophy were observed in the pathology material that belong to different sections of the duodenum (Figure 2). The colonoscopy was suboptimal due to insufficient cleaning. The skin biopsy result was compatible with dermatitis herpetiformis (Figure 3). When the family history was questioned in detail, he stated that there were other family members who had been diagnosed with CD recently. Finally, the patient was diagnosed as dermatitis herpetiformis due to CD and was advised to follow his diet and was referred to gastroenterology for treatment.

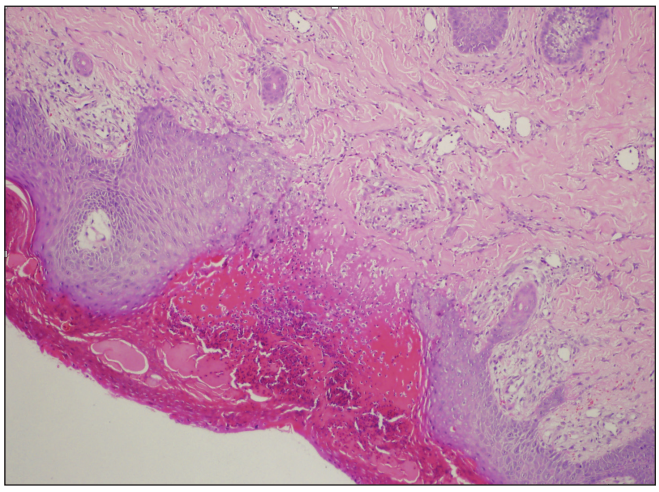

Figure 3. Tissue integrity is eliminated in the ulcer floor.

DISCUSSION

Identifying CD, particularly in case of its uncommon presentation can be difficult. CD increases the hazard of CVD in many ways. CD and atherosclerosis are chronic inflammatory processes that are related to interleukin-1 pathways and toll-like receptors are associated in the early stages of arteriosclerotic plaque reconstruction. (12). Villous atrophy leads to reduced absorption of nutrients, such as folic acid and B vitamins which decrease the plasma level of homocysteine leading to an increased hazard of adverse cardiovascular events. Villous atrophy may also lead to imperfect absorption of drugs, including cardioprotective medications (5). In adult CD patients, the absence of cardiovascular risk factors, and abnormal homocysteine, erythrocyte sedimentation rate and C-reactive protein levels may accompany the inflammation which produces arterial stiffening (13). By reviewing the cardiovascular involvement of CD, Ciaccio et al. concluded that many cardiovascular problems could occur in patients with untreated CD, but most of these tended to be resolved with gluten free diet, usually with improvement of villous atrophy in the small intestine (14).

Reflection of most diseases can be seen in the skin and itching can be a sign of a lot of illnesses. Most of the patients with CD may have various symptoms years before their diagnosis. Although the rate of diagnosis is low, the prevalence of CD is higher than expected because of its atypical presentations. About one tenth of patients with CD experience dermatitis herpetiformis, which is a severe itchy skin rash (15). Our patient had dermatitis herpetiformis on his face, which coincided with the course of poorly controlled itching. Based on the case of our patient, it is important to critically assess skin abnormalities in patients who have concomitant recurrent MI as they may help to guide the diagnosis towards CD.

Adherence to the diet, especially in those presenting with DC, seems to be the first and only treatment option for patients with DC. The current patient is under gastroenterology follow-up in this respect. For recurrent ischemia attacks, especially in the presence of typical findings in the gastrointestinal biopsy, the recovery of the malabsorption and compliance with the gluten-free diet for the absorption of the drugs used are essential. The patient's condition will be evaluated by endoscopy at certain periods. He was informed on this matter.

CONCLUSION

We presented a case with atypical manifestations of CD, including persistent myocardial ischemia, intractable itching, and neurological disorders. Serological tests and duodenal biopsy confirmed the diagnosis of CD, and a gluten-free diet was recommended. Therefore, CD should be considered when there is intractable and medication-resistant itching.

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