CASE REPORT

Diagnosis of Celiac Disease in a Patient with Isolated Refractory Dyspepsia and GERD: A Case Report

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Abstract

Celiac disease is a chronic autoimmune illness that develops in genetically susceptible persons who consume gluten that causes damage to the small intestine. The average global prevalence of CD is between 0.5 and 1%, despite regional variations in the disease's frequency.

In this report, we present a 34-year-old patient with a complaint of epigastric pain and burning with a history of nausea and vomiting. She complained of severe gastric pain, bloating, discomfort, burning, and digestive problems.

Endoscopy and colonoscopy were performed due to her lower abdominal pain and it showed that the asymptomatic with isolated dyspepsia patient was diagnosed with celiac disease. Every six months, anti-TCG, IgG, and IgA levels were monitored and they improved at the same time that the patient's symptoms did. Endoscopy must be performed in young patients, who have no signs of celiac disease and have a positive laboratory test.

Keywords: *Celiac disease, GERD, endoscopy, EGD, anti TTG.*

INTRODUCTION

In genetically susceptible people, gluten consumption causes celiac disease (CD), an autoimmune disorder defined by a particular serological and histological profile [1]. The term "gluten" refers to the alcohol-soluble proteins found in a variety of cereals, such as rye, barley, spelled, and kamut [2]. Foods with gluten damage the small intestine and reduce nutrient absorption which results in celiac disease. The average global prevalence of CD is between 0.5 and 1%, despite regional variations in the disease's frequency [3]. It may impact up to 1% of the population and manifest clinically as diarrhea, abdominal distension, and failure to thrive [4]. Enteropathy-induced GI malabsorption shown as diarrhea, weight loss, steatorrhea, and hypoalbuminemia characterizes the "typical" subtype of CD [4]. CD can also cause a wide range of extra-intestinal complications, including endocrine manifestations. 2 Metabolic bone disease including osteoporosis and osteopenia, vitamin D deficiency, secondary hyperparathyroidism, and less frequently osteomalacia can be seen [5]. Duodenal biopsies, which indicate lymphocytosis, crypt hyperplasia, and villous atrophy in cases with active celiac disease, are the gold standard for diagnosing the condition [6].

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CASE REPORT

A 34-year-old woman presented to the Gastroenterology department of Medicare General Hospital Karachi in July 2022 with chronic dyspepsia and severe nausea and vomiting for three years. She complained of severe gastric pain, bloating, discomfort, burning, and digestive problems. The patient's clinical history included epigastric pain with burning for five years associated with nausea. It usually occurs during the day and she did not have any pain at night. She had extensive lab workup done in five years but did not have any endoscopy or colonoscopy. She was on multiple medications including PPI and prokinetics.

Esophagogastroduodenoscopy (EGD) and colon were performed to examine the lining of the oesophagus, stomach, and upper part of the small intestine called the duodenum. Due to the patient's complaints, elevated antibody levels, and iron deficiency anemia, a colonoscopy was conducted. The results revealed a normal mucosa with small internal hemorrhoids.

For epigastric pain and vomiting, an endoscopy was done and the results showed normal-looking mucosa GEJ at 38cm and duodenum was nodular D2 concluding the severe pan gastric erythema, duodenitis with nodular mucosa and decreased duodenal folds with fissuring seen **(Fig. 1)**. Biopsy reported celiac disease as TTG showed IgA of more than 100. The case reported that the asymptomatic patient with isolated refractory dyspepsia and GERD was diagnosed with celiac disease by endoscopy. **Fig. (2)** shows marked villous blunting.

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Table **1** shows laboratory investigations of the patient ordered in July 2022. Hemoglobin levels and iron profile were suggestive of hypochromic, microcytic anemia, About 50% of patients experience iron-deficient anemia, which is the most common extraintestinal symptom of celiac disease [7, 8]. Villous atrophy of the mucosa in the upper portion of the small intestine impairs iron absorption, which is linked to the mechanism of anemia [6, 7]. Vitamin D levels were suggestive of vitamin D deficiency. Changes in the absorption of calcium and vitamin D3 are linked to changes in bone mineral density, such as osteopenia or osteoporosis, which impact approximately 70% of patients at diagnosis [9]. White blood cell count, platelets, liver function tests, Urea, creatinine, electrolytes, and other reports were normal. Ultrasound abdomen was unremarkable.

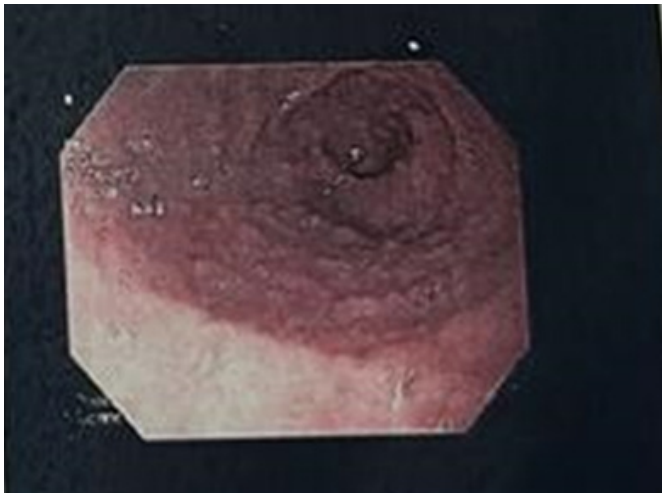

Fig. (1): Endoscopy showed duodenum nodular D2.

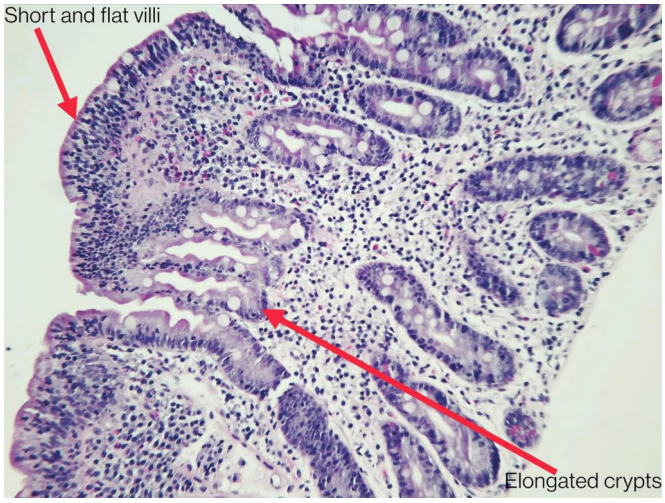

Fig. (2): Marked Villous Blunting.

DISCUSSION

The term celiac disease refers to an intolerance to a protein found in some cereals, particularly wheat, which results in immune-mediated damage to the small intestine mucosa.

Table 1: Laboratory results.

Laboratory Investigations	Patient Results
Haemoglobin	9g/dl
MCV	62 fl
Serum Iron	15 µg/dl
Serum TIBC	320 µg/dl
Serum ferritin level	50 ng/ml
TLC	8000 /µl
Platelet count	240,000 /µl
Total Bilirubin	1.0 mg/dl
Direct Bilirubin	0.8mG/dl
SGPT	42 µ/l
Alkaline Phosphatase	142 µ/l
Gamma GT	28 µ/l
TSH	1.42 µIU/mL
Vitamin B12	150 pg/mL
Urea	20 mg/dL
Creatinine	0.8 mg/dL
Electrolytes	Na: 142mmol/L, K: 3.8 mmol/L, Cl: 98 mmol/L, HCO_3: 22 mmol/L
Albumin	3.4 G/dl
HBsAg	Negative
Anti-HCV	Negative
Vitamin D	6 ng/mL
IgA	>100 U/mL
IgG	>25 U/mL
Ultrasound Abdomen & Pelvis	Unremarkable Scan

Research shows that celiac disease is very common in young individuals and that its prevalence is 29.3% in the Pakistani population [10]. The prevalence of celiac disease is rising in the adult and elderly populations, and it manifests as a variety of symptoms and related disorders. Even though it has been much less frequent over time, diarrhea is still the most typical gastrointestinal symptom upon presentation [11]. Chronic abdominal pain and frequent vomiting are less common gastrointestinal complaints. However, the general population has gastrointestinal symptoms occasionally, but there is no correlation between this fact and undiagnosed celiac disease [12].

Our patient's reports were suggestive of iron deficiency anemia which was crucial in making the diagnosis and highlighting the possibility of a gluten-sensitive enteropathy. A few practitioners recommend that individuals with iron-deficiency anemia undergo routine screening for celiac disease [7]. The CD is still critically underdiagnosed, with only 15% to 20% of patients being identified with current techniques, even though adult CD

may be diagnosed with great certainty by CD-specific serology and biopsy of the duodenal mucosa by upper gastrointestinal endoscopy [13]. Malabsorption resulting from celiac disease is one of the recognized causes of vitamin D insufficiency [14]. In our study patient was found to be vitamin D deficient. Vitamin D supplements were prescribed to the patient and levels were checked after 6 months.

A study assessed the impact of a gluten-free diet on the frequency of recurrence of symptoms associated with gastroesophageal reflux disease (GERD). The finding that a gluten-free diet reduced the incidence of GERD-related relapses raises the possibility that esophagitis is directly linked to the fundamental celiac disease [15].

After following a gluten-free diet, the mucosa will begin to histologically normalize six to twelve months later, with partial or complete restoration of the mucosal morphology. The patient's prognosis improved in both the clinical and biochemical domains. A favourable long-term prognosis was also revealed by the quick clinical response, which reduced the likelihood of developing benign and malignant consequences. The problem with this patient's case is that a young woman with mild iron deficiency anemia should never be disregarded or dismissed as perhaps related to gynaecological conditions; instead, it should immediately raise the alarm and require additional digestive system testing.

CONCLUSION

The patient profiled in the Case Report serves as an example of the extraintestinal symptoms connected to CD. Importantly, extra-intestinal signs, as opposed to the traditional malabsorption symptoms, frequently result in a delayed diagnosis of CD [16].

Endoscopy must be performed in young patients, who have no signs of celiac disease and have a positive laboratory test. Patients who have had epigastric burning and pain in the past may have celiac disease even though they don't exhibit any outward signs of the disease.

TREATMENT

To treat celiac disease, people must primarily cut out gluten from their diets and follow a gluten-free diet, which is linked to a relapse of gluten antibodies but does not completely cure the condition [17]. The patient was put on a rigorous gluten-free diet along with vitamin and mineral substitutions and parenteral iron therapy. After a few days, there was a noticeable improvement in the overall status and the normalization of the bowel habits. To ensure a positive clinical outcome and a reversal of mucosal abnormalities, the patient was instructed to maintain a gluten-free diet for the rest of their lives.

FOLLOW UP

Every six months, anti-TCG, IgG, and IgA levels were monitored and they improved at the same time that the patient's symptoms did.

CONSENT FOR PUBLICATION

Informed consent is obtained from the patient to publish the data concerning this case.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGMENTS

Declared None.

AUTHORS' CONTRIBUTION

This study was designed and developed by AR conducted their preliminary literature review. AR was in charge of data gathering, assembly, and patient evaluation. The manuscript was written by FN. The last critical review and changes were completed by SR. On behalf of all other authors, AR is the corresponding author.

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