

Anaemia Evaluation- Celiac Disease Must Be Ruled Out

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1. Abstract

1.1. Introduction

Celiac disease has immune based autoimmune disease which is noticed in genetically predisposed persons and is due to gluten allergy. It was initially thought that it is disease of children and presents with typical or classical symptoms associated with gastro-intestinal tract like pain abdomen, diarrhea or constipation. Now, it has been proven that it is commonly seen in adult age also and in half of cases presents with atypical or unclassical symptoms which are mainly due to nutrients or minerals deficiency. Thus, patients can have hematological (anemia) neurological, psychiatric, dental or reproductive problems.

1.2. Case Report

We report a case of sixty-two-year-old female presented with recurrent iron deficiency anemia and was transfused parenteral iron and repeated blood transfusions in past. She developed pain abdomen and diarrhea for two months and sought general physician help who advised for ultrasonogram abdomen which was normal. In view of non-relief of symptoms on symptomatic therapy, contrast enhanced computed tomography abdominal scan was done which revealed mid jejunal thickening with some reactionary lymph node. Hence, for ruling out jejunal malignancy, double balloon enteroscopy was done which showed scalloping of jejunal folds and histopathology showed Marsh 3 grade as per celiac classification. The serum IgA TTG antibody test was done which was significantly raised to 349 I.U./ml. She was put on strict gluten restricted diet and on follow up, she was symptomatically better with resolution of diarrhea, pain abdomen and improvement in anemia status. On enquiring, his son was also diagnosed celiac disease eight years back and is asymptomatic on strict gluten restricted diet.

1.3. Conclusion

Celiac disease has varied atypical presentations and can present at any age group, including in elderly people. Patient can present with selective iron deficiency anemia and typical symptoms of diarrhea can present later on, as in our case. Hence every anemia patient

should be screened for celiac disease. The treating physician, patient and family members should all strive for complete gluten restricted diet, not only for clinical improvement but also for decreasing morbidity and mortality associated with celiac disease.

2. Introduction

Celiac disease has immune based autoimmune disease which is noticed in genetically predisposed persons and is due to gluten allergy [1-3]. The global prevalence of CeD has been estimated at around 1.7% based on positive serology and 0.7% based on biopsy-confirmed CeD [4]. It was initially thought that it is disease of children and presents with typical or classical symptoms associated with gastro-intestinal tract like pain abdomen, diarrhea or constipation. Now, it has been proven that it is commonly seen in adult age also and in half of cases presents with atypical or unclassical symptoms which are mainly due to nutrients or minerals deficiency. Celiac disease is an autoimmune response to gluten that damages the lining of the small intestine, specifically duodenum where damage starts and it is responsible for absorbing nutrients like iron. This damage, known as villous atrophy, prevents the body from absorbing iron and other nutrients properly. Iron is a key component of haemoglobin, the protein in red blood cells that carries oxygen throughout the body.

Without enough iron, the body cannot produce enough healthy red blood cells, leading to iron deficiency anaemia. This is a very common finding at the time of diagnosis, sometimes being the only symptom. Treatment involves a strict gluten-free diet, which allows the intestine to heal, but it may take months to years to resolve the anemia completely. Oral iron supplements are sometimes needed and even some patients require intravenous iron.

3. Case Report

We report a case of sixty-two-year-old female presented with recurrent iron deficiency anemia and was transfused parenteral iron and repeated blood transfusions in past. She developed pain abdomen and diarrhea for two months and sought general physician help who advised for ultrasonogram abdomen which was normal. In

view of non-relief of symptoms on symptomatic therapy, contrast enhanced computed tomography abdominal scan was done which revealed mid jejunal thickening with some reactionary lymph node. Hence, for ruling out jejunal malignancy, double balloon enteroscopy was done which showed scalloping of jejunal folds and on histopathological examination proved it to be celiac disease with Marsh Grade 3 stage. The serum IgA TTG antibody test was significantly raised to 349 I.U./ml. She was poorly built, malnourished with low BMI of 16 and her weight was only 35 kg. The biochemical evaluation revealed low hemoglobin of 8 gm% with microcytic hypochromic picture suggestive of iron deficiency anemia. The rest parameters including blood sugar, thyroid & lipid profile, viral

screen was normal except for slightly low level of serum calcium and serum Vitamin D3 level. She was put on strict gluten restricted diet and on follow up, she was symptomatically better with resolution of diarrhea, pain abdomen and improvement in anemia status. On enquiring, his son was also diagnosed celiac disease eight years back and is asymptomatic on strict gluten restricted diet. It lays stress on strict and complete family screening in patients of celiac disease, as there are five percent prevalence of celiac disease in family members. In our case, if the primary physician would have ruled out celiac, then it could have saved patient from double balloon enteroscopy and early diagnosis of celiac disease.

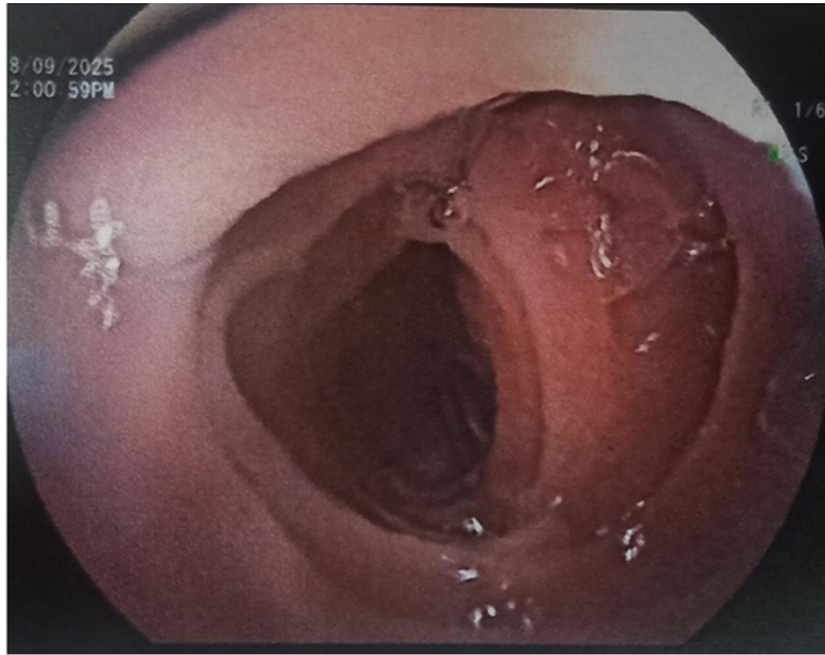


Figure 1: Double Balloon Enteroscopy Showing Scalloped Jejunal Folds Suggestive of Celiac Disease.

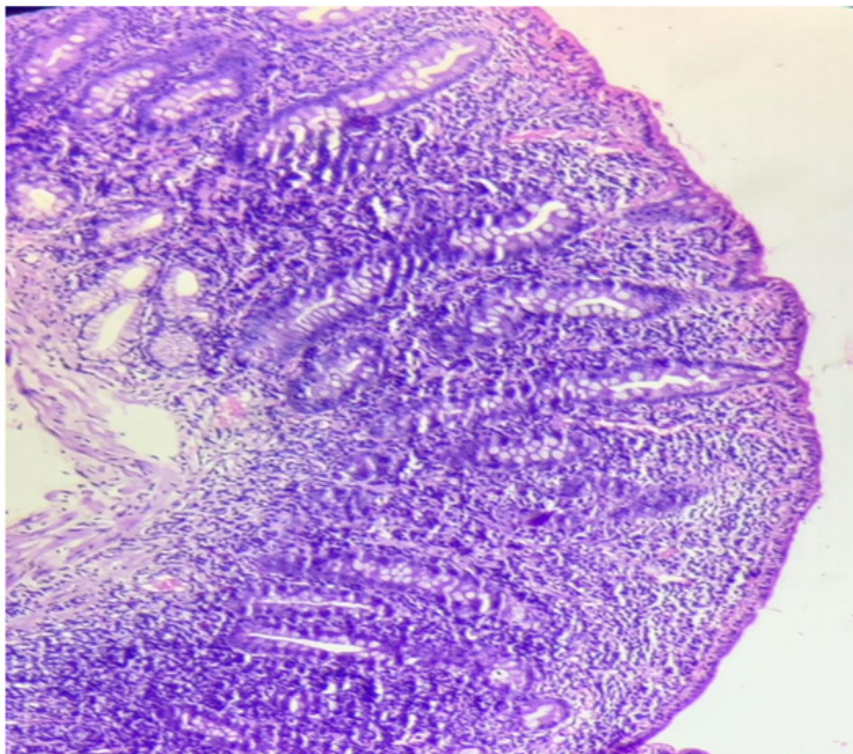


Figure 2: Showing Marsh 3 grade on histopathology examination.

4. Discussion

Celiac disease (CD) is an autoimmune disease affecting the small bowel mucosa linked to gluten ingestion in genetically predisposed subjects [5,6]. The diagnosis of CD in adults is based on clinical manifestations, serology, genetics, and histopathological changes of intestinal mucosa which usually shows, intraepithelial lymphocytosis (IEL), crypt hyperplasia, and villous atrophy [6,7]. Since CD affects the duodenum, which is the tract that adsorbs iron from the diet, iron-deficiency anemia (IDA) represents a frequent clinical sign of CD both in children and in adults. Often the IDA is the only sign in subclinical/atypical forms of CD [8-10]. Other factors contributing to IDA include blood loss from intestinal lesions and chronic inflammation, during which pro-inflammatory cytokines sequester iron from the serum and reduce erythropoietin production [11,12]. Kochhar et al. reported that 39% out of 434 CD patients had anemia as the only presenting feature [8]. In an Italian multicentre study, including 1026 patients with subclinical/silent CD, the most frequent extra-intestinal manifestation was IDA, in about 39% of cases [13]. In fact, the most frequent extra-intestinal manifestation (EIM) of CD is IDA, with a prevalence between 12 and 82% in patients with new CD diagnosis [14]. In another study on association of celiac disease with anemia, selective iron-deficiency has been reported [15]. In our case also there were many misses in making a diagnosis by various health specialists who treated the patient. She was being treated for repeated iron deficiency anemia with oral or parenteral iron and even blood transfusions but no body got tested for celiac disease which is important cause of selective iron-deficiency anemia. The type of anemia can even tell extent of involvement of gut by celiac disease. The only iron deficiency anemia hints at involvement of only duodenum from where iron is absorbed and dimorphic picture indicates involvement uptill terminal ileum where vitamin B 12 and folic acid absorption occurs. Moreover, in our patient her low BMI and weight in background of iron deficiency anemia which hinted towards celiac disease was also missed. Lastly, family history was positive in this case, as son of the patient was diagnosed eight years back with celiac, thus keeping familial prevalence in mind, patient could have been screened for celiac much early. Moreover, like in our case, presentation first can be with atypical symptoms like iron deficiency anemia followed by typical symptoms like diarrhoea and pain abdomen.

5. Conclusion

Celiac disease has varied atypical presentations and can present at any age group, including elderly one. Patient can present with selective iron deficiency anemia and typical symptoms of diarrhea can present later on, as in our case. Hence every anemia patient should be screened for celiac disease. The treating physician, patient and family members should all strive for complete gluten restricted diet, not only for clinical improvement but also for decreasing morbidity and mortality associated with celiac disease.

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