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Association of Celiac Disease with Inflammatory Bowel Disease and Colonic Cancer and liver Involvement in a Case of β-Thalassemia Minor.

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Abstract:

Introduction: A review of the literature suggests a potential association between celiac disease and inflammatory bowel disease (IBD), which may explain why both disorders are often present concurrently in one patient or in her/his first-degree relatives. In addition, a wide spectrum of liver injuries in patients may be related to celiac disease, including: Reactive hepatitis, autoimmune liver diseases, acute liver failure, cryptogenic cirrhosis and hepatocellular carcinoma. Mangiagli et al (2) reported a case of celiac disease in an adolescent with thalassemia major characterised by anorexia, arrest of weight gain and short stature. Another case of celiac disease and thalassemia major was reported in a study performed by Acquaviva (1) in Italy.

Conclusion: Revealing the association between celiac disease and β-thalassemia highlights why a low threshold for the diagnosis of celiac disease should be considered in β-thalassemia patients with a history and/or clinical indications that are suggestive of celiac disease. Likewise, it is also recommended that diagnosis thresholds are lowered for thalassemic patients who present with short stature. Patients with celiac disease have a greater predisposition to IBD and liver involvement. Therefore, we also recommend colonoscopy and screening for asymptomatic and symptomatic liver diseases in celiac patients, as well as screening for celiac disease in all patients with IBD and autoimmune or cryptogenic liver disorders.

Key words: Celiac disease; β-Thalassemia minor; Ulcerative colitis; Autoimmune liver disease; Cryptogenic liver disorder

Introduction:

Celiac disease is an enteropathy caused by the consumption of gluten in genetically susceptible individuals. Celiac disease is one of the most common genetically based diseases, occurring in 1 out of 100 to 300 persons in the general population.

β -Thalassemia major is an inherited disorder with a reduced or absent β –globin chain synthesis. Acquaviva et al [(1)] and Mangiagli and et al [(2)] have both reported the concurrent incidence of celiac disease and thalassemia major in their respective patients, suggesting a possible relationship between the two diseases.

Liver involvement in patients with celiac disease was first described in 1977. Celiac disease may present as a cryptogenic liver disease which is found in 5-10% of patients with persistent and cryptogenic elevation of serum aminotransferases (AST, ALT).

A wide spectrum of liver disorders in patients may be related to celiac disease, such as: [(1)] mild asymptomatic parenchymal damage that is suggestive of chronic liver disease. This may be associated with non-specific histological findings, and is reversible on a gluten free diet; [(2)] chronic inflammatory liver damage with an autoimmune mechanism, including acute or chronic autoimmune hepatitis, primary sclerosing cholangitis and primary biliary cirrhosis. These complications may lead to cirrhosis which frequently cannot be treated with a gluten free diet alone, but requires immunosuppressive therapy as well; [(3)] severe liver failure, which may be treated with gluten withdrawal.[(3)]

Several case series report an association between celiac disease and inflammatory bowel disease (IBD). Yang et al [(4)] studied the co-occurrence of these conditions in a cohort of patients with celiac disease. In their study, 455 patients with celiac disease, IBD was identified in 10 (5 had ulcerative colitis and 5 had Crohn's disease). Among their cohort of patients with celiac disease, IBD was found to be significantly more common than it is in the general population.[(4)]

Case Report:

A 28 year-old male who had been misdiagnosed with thalassemia intermedia and who had received frequent blood transfusions was admitted with iron deficiency anemia (IDA) and bloody diarrhea at the Emam Khomeini Hospital in Urmia, Iran. The patient had a history of pemphigus vegetans and chronic diarrhea since childhood. A physical examination revealed pallor, short stature, clubbing and splenomegaly.

Laboratory tests: Ferritin = 3, Iron = 63, TIBC = 453, PT = 17, PTT = 45, AST = 53, ALT = 63, Alk = 715, Alb = 3.8, γ-GT = 149, total bill = 3.11, direct bill = 1.12, Ca = 7.7. HBS Ag, HCV Ab, ASMA, LKM Ab, ANA were all negative.

WBC = 9500, Hb = 11.8, PLT = 450000, MCV = 63, MCH = 21.8, MCHC = 30.1. Anti tTG (IgA) = 45(+>15), normal serum IgA.

Stool Exam: Trophosite of entamoeba histolytica.

Prior Hb Electrophoresis: Hb A2=4.3% (β- thalassemia minor). (Normal Hb electrophoresis on admission due to concomitant IDA).
Abdominal Ultrasound: Liver with coarse paranchymal echogeinicity and splenomegaly.
Small bowel series: Decreased in duodenal folds and mild inflammation also occured in the duodenal folds. A normal jejunom and ileum were suggestive of celiac disease.
Colonoscopy: Diffuse erythema, pseudo polyps and pathological ulcerative colitis with mucosal dysplasia and adenocarcinoma of the splenic flexure.
Liver Biopsy: Chronic Hepatitis stage 3,grade 2 according to modified HAI score .
Duodenal biopsy was performed 3 day after starting a gluten free diet, and was reported as normal.
The patient was also eligible for total colectomy and multiple small intestine biopsies while under surgery.

Discussion:

A review of the literature reveals several cases where a patient was diagnosed with celiac disease and β-thalassemia major concurrently. This suggested a possible association between celiac disease and β-thalassemia, and highlights the importance of screening for celiac disease in β-thalassemia patients. Because patients with celiac disease have a greater predisposition to IBD and liver involvement, we recommend performing a colonoscopy and screening for asymptomatic and symptomatic liver diseases in celiac patients. In addition, it is also recommended that patients with IBD and autoimmune or cryptogenic liver disease are screened for celiac disease.

Conclusion:

The discovery of an association between celiac disease and β-thalassemia illustrates how a lowered threshold for celiac disease diagnosis should be considered in patients with β-thalassemia and a history and/or clinical indications suggestive of celiac disease. In addition, diagnosis thresholds for celiac disease should be lowered in thalassemic patients who present with short stature. Patients with celiac disease have a greater predisposition to IBD and liver involvement than the general population. Therefore, colonoscopy and screening for asymptomatic and symptomatic liver diseases should be performed in celiac patients, as should screening for celiac disease in patients with IBD and autoimmune or cryptogenic liver diseases.

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