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CASE REPORT

Celiac disease hidden by cryptogenic hypertransaminasemia mistaken for fatty liver

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Abstract: A variety of signs and symptoms have been reported in regards to the typical and atypical presentations of CD. It is now well recognised that its onset may occur at any age and that atypical forms of CD are much more prevalent than its classic form (1).
In this case, where the patient presented with high BMI and evidence of grade I of fatty liver disease, CD was suspected due to mildly abnormal bloating, cryptogenic hypertransaminasemia, abnormal LFT and poor response to fatty liver treatment. This presentation type is not uncommon; diagnosis was confirmed by the presence of subtotal villous atrophy in the biopsy specimen, positive specific antibody screening (AGA, tTG and EMA antibodies), negative antibody screening and normalization of liver enzymes on a gluten-free diet *(Tab. 2, Ref. 13)*. Full Text in PDF *www.elis.sk.*
Key words: celiac disease hidden, cryptogenic hypertransaminasemia, fatty liver, atrophy, liver enzymes.

Celiac disease (CD) is an enteropathy triggered by ingestion of gluten-containing grains in susceptible subjects. The etiology of CD is not fully understood but genetic and immunologic factors play an important role in the pathogenesis of this condition. Roughly 1 % (1 in 100) of the general population is thought to be affected by CD in Iran (1, 2). Recent scientific data suggest that CD, as a multisystem autoimmune disorder, can also involve extraintestinal organs such as skin, pancreas, heart and liver (3). This is a case report of a male adult who presented with oral aphthous ulcerations and fatty liver disease.

Case report

A 38-year-old male (healthy, BMI 28), was referred to a gastroenterology clinic due to his abnormal liver function test results (LFT) and recurrent oral aphthous ulcerations he had suffered from for the past six years. He had failed to respond to fatty liver treatment and his liver enzymes had not returned to normal after the treatment. He had no history of alcohol/drug abuse or hepatitis and presented with normal liver span; splenomegaly and K-F rings were not detected.

At the time of admission to the GI clinic, biochemical tests revealed lower levels of albumin and platelets compared to normal (Tab. 1). The patient did not suffer from iron deficiency; levels of Ca, P, Mg, K, TG, Chl, FBS as well as serum levels of thyroid-stimulating hormone (TSH) and free thyroxine (FT4) were within the normal range. While the patient had no history of viral hepatitis, an ultrasound scan of the liver revealed fatty liver disease, grade 1. The levels of urine copper (19 mg/24 h) and ceruloplasmin (18.5 mg/dl) were normal; furthermore, the patient presented with normal serology for HBV, HCV, ANA-ASMA and anti- LKM Ab. A liver biopsy was performed due to the abnormal LFT and the evidence of chronic liver disease; it showed focal architectural distortion of the liver parenchyma due to fibrosis and infiltration

Tab. 1. Serology screening for patient at admission.

At admission		At admission	
Bili	1.5+ 0.3	ANA	negative
AST	56	Anti LKm Ab	negative
ALT	131	ASMA	negative (ref: <1/10)
ALP	247	AGA	60 (ref: <15)
TG	120	tTG	positive
Cholesterol	218	AEM	27 (<15)
HDL	37	Ferritin	88
LDL	218	TSH	1
Hb	13.6	T4	6.9
PT	13	ESR	14
PLT	145000	HCV Ab	negative
FBS	102	HBs Ag	negative
GGT	102	HBc Ab	< 10
Mg	1.7	TIBC	300
Alb	45	Ceruloplasmin	18.5 mg/dl (15–36)
P	0.9	Urine 24 h	19 mg/24 h

Tab. 2. Serum levels of GGT, AST, ALT and ALP in patient before and after GFD.

Patient	GGT	AST	ALT	ALP
Before GFD	102	56	131	247
One year after GFD	115	28	22	97
Use gluten containing foods	–	47	62	331
After GFD	–	30	33	268

ALT – Alanine aminotransferase; ALP – Alkaline phosphatase; Gamma-glutamyl transpeptidase, CD – Celiac Disease; LFT – Liver function test

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of the fibrous tract containing dense lymphocytic infiltration with diffuse periportal activities. Some plasma cells in the reticulum staining showed fibrous expansion of all portal tracts and frequent bridging fibrosis. The liver biopsy revealed grade II/stage 4 of chronic autoimmune hepatitis and could not confirm fatty liver disease due to cryptogenic hypertransaminasemia. As the patient suffered from autoimmune liver disease and recurring aphthous ulcers, he underwent serological screening for celiac disease despite the absence of typical CD symptoms; human anti-tissue transglutaminase (tTG) antibodies, anti-endomysial antibodies (EMA) and anti-gliadin antibodies (AGA), IgAs, were positive. Endoscopic view of the duodenum showed scalloping of the duodenal folds. (Scalloping, however, is not specific for CD and has been seen in other conditions such as eosinophilic GE, Giardiasis, amiloidosis, tropical sprue and HIV enteropathy). Four biopsy specimens were taken for pathological investigation. According to modified Marsh classification (4), the duodenal biopsy specimens showed subtotal villous atrophy with crypt hyperplasia and infiltration of lamina propria with lymphocytes (Marsh IIIb), confirming CD.

The patient was subsequently put on a gluten-free diet; after 12 months, liver enzymes were back to normal and serology revealed that the patient was anti-tTG and EMA-negative. On reintroduction of gluten food, LFT enzymes elevated quickly within one month (Tab. 2). Once the patient was taken off gluten food again, the liver enzyme levels normalized. Additionally to his gluten-free diet, folic acid, prednisolone and azathiopurine were introduced to supplement the treatment of his autoimmune hepatitis.

Discussion

Descriptive reports of liver histological features in celiac disease (CD) are sparse, and the effect of a gluten-free diet (GFD) on the course of liver disorders is poorly understood. Evidence suggests that the prevalence of CD may be considerably higher than previously thought; key factors in this development may be the increased awareness of subclinical, mildly symptomatic and asymptomatic presentations of this condition and its subsequent detection in patients (5).

A variety of signs and symptoms have been reported in regards to the typical and atypical presentations of CD. It is now well recognised that its onset may occur at any age and that atypical forms of CD are much more prevalent than its classic form (1).

In this case, where the patient presented with high BMI and evidence of grade I of fatty liver disease, CD was suspected due to mildly abnormal bloating, cryptogenic hypertransaminasemia, abnormal LFT and poor response to fatty liver treatment. This presentation type is not uncommon; diagnosis was confirmed by the presence of subtotal villous atrophy in the biopsy specimen, positive specific antibody screening (AGA, tTG and EMA antibodies), negative antibody screening and normalization of liver enzymes on a gluten-free diet.

In previous studies, the prevalence of elevated transaminases in patients with CD was 36–55 % (6–8). Alavi-Moghaddam et al (2011) reported that 8.1 % of adult CD patients suffered from cryptogenic liver disorder (9). Dicky et al (1995) identified that 15 % of cases showed elevated levels of AST and ALT in their study (10). In a large population of children with CD, Di Biase et al (2010) found that 40 % of CD patients had isolated hypertransaminasemia and 2 % had autoimmune liver hepatitis (11). Volta et al (1998) found that of 55 patients with unexplained liver dysfunction, 5 had celiac disease (12).

In similar cases with abnormal LFT above 100 (abnormal ALT & AST). Routine screening for CD is strongly recommended. As recently reported, cryptogenic and autoimmune hepatitis in patients with CD might represent distinct clinical, histological, and immunohistochemical entities, rather than two ends of a spectrum of liver injury (13).

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