

Biochemical Particularities in a Patient with Celiac Disease

A case presentation

COSMIN ALEXANDRU CIORA¹, VLAD DUMITRU BALEANU^{2*}, DRAGOS VIRGIL DAVITOIU³, CARMEN PLAISANU⁴

¹Carol Davila University of Medicine and Pharmacy, Discipline of Gastroenterology and Hepatology, 8 Eroii Revolutiei Blvd., 050474, Bucharest, Romania

²University of Medicine and Pharmacy of Craiova, Surgery Department, Clinical Emergency Hospital Sf. Pantelimon Bucharest, 340-342 Pantelimon Road, 021659, Bucharest, Romania

³University of Medicine and Pharmacy of Bucharest, Surgery Department, Clinical Emergency Hospital Sf. Pantelimon Bucharest, 340-342 Pantelimon Road, 021659, Bucharest, Romania

⁴Gastroenterology and Hepatology, Fundeni Clinical Institute, 258 Fundeni Str., 022322, Bucharest, Romania

Celiac disease is an autoimmune disease with many systemic manifestations and almost no specific symptoms. Report the case of a young woman with abdominal pain (colic type), bloating and up to 10 loose stools (day and night) associated with progressive weight loss that has been diagnosed with celiac disease in the gastroenterology and hepatology department. After full adherence to the gluten-free diet all biochemical abnormalities disappeared and the patient became normoponderal.

Keywords: Celiac Disease, Gastroenterology, Miscarriages

Failure to recognize these symptoms may lead to a delay in the diagnosis, a late disease onset and major long term complications. Once upon a time considered to be a rare disease, the celiac disease is now present in 1/100 persons [1,2]. Despite the high prevalence, more than 95% of the affected individuals remain undiagnosed probably because approximately 38% of them have asymptomatic disease and the doctors associate their symptoms with other diseases. Classic celiac disease involves the existence of gastrointestinal symptoms or consequences due to malabsorption. It is the most documented form of the disease. Patients have nausea, bloating, tympanites, discomfort, abdominal pain, abnormal stool, usually diarrhea. Classical symptoms include also weight loss despite a normal appetite, more frequent in children, which have failure to thrive. Fatigability and weakness are the result of the low absorption of nutrients in the small intestine and also because of the iron deficiency anemia [3].

Experimental part

Atypical celiac disease is characterized by the absence of gastrointestinal manifestations or poor gastrointestinal symptoms. The extra intestinal symptoms like iron deficiency anemia, failure to thrive, osteoporosis or infertility are to the fore. Paradoxically, this form of celiac disease is more common than the *classic* form but because of the absence of gastrointestinal symptoms is often underdiagnosed [4,5].

We will present you the case of a 35 years old female, married for 7 years, 1 children 3 years old. The patient addressed our clinic for the emission of 10 loose stools per day since the last 12 months associated with significant weight loss, about 12 kilograms.

Clinical examination

Upon admission the patient had a poor general condition, she was dehydrated, with diffuse abdominal pain, bloating, nausea and vomiting. She denied smoking, alcohol use or drugs. She had a weight of 47 Kg and a height of 165 cm with a BMI of 17.2 Kg/m² - underweight. Her's usual weight was 59 Kg. From her personal medical history we

noticed two years history of iron deficiency anemia, two spontaneous miscarriage and appendectomy in childhood. Her first period was at the age of 14. Her periods have always been irregular and she had amenorrhea for the last 6 months. Her family medical history was negative for celiac disease or inflammatory bowel disease.

Laboratory findings

Her blood panel showed a mild hypochromic microcytic anemia (Hb: 10.5 g/dL, MCV: 72 fL, MCHC: 29g/dL), serum ferritin 9 ng/dL, transferrin saturation 17%, folate = 2ng/mL, vitamin B12 = 100pg/mL. Beside an elevated ASAT and ALAT more than twice the upper limit of normal and VSH = 50mm/hr, the rest of the biochemistry panel was within normal values. She was tested negative for hepatitis B and C. Also, serology for autoimmune hepatitis and Wilson's disease were negative. Her stool analysis was negative for bacteria and parasites. Fecal calprotectin was also normal. Anti tTG antibodies were positive (102.62 U/mL) and anti gliadin antibodies were positive too.

Endoscopic examination

The endoscopic examination of the second part of the duodenum revealed flattened folds and a nodular pattern of the mucosa. Six biopsies were taken each with only

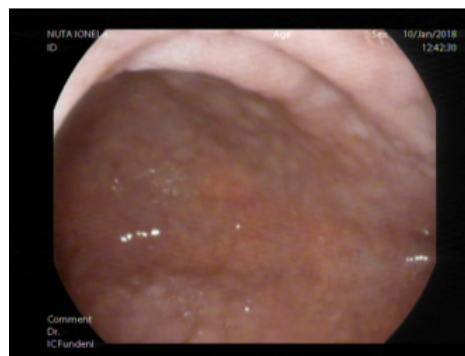


Fig. 1. DII mucosal edema, nodular aspect suggestive of gluten-sensitive enteropathy, the absence of Kerckring folds (biopsy)

* email: baleanuvlad@gmail.com; Phone: 0040765865886

one passage of the biopsy forceps and they were examined by the histopathology experts from our clinic.

Histopathology examination

Histological lesions consisting with partial villous atrophy, with intraepithelial lymphocytosis suggestive of

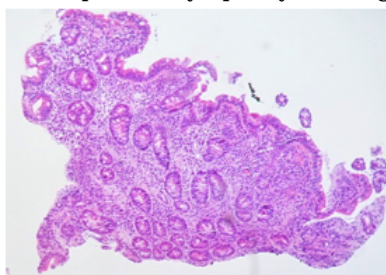


Fig..2

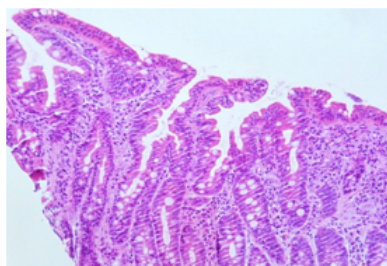


Fig..3

gluten-sensitive enteropathy Grade 3a Marsh-Oberhuber (Fig. 2, 3)

Results and discussions

The patient adheres incompletely to the gluten-free diet for 3 months, obtaining only a slight clinical improvement. All abnormal biochemical markers retained their initial values. After a new reassessment at 6 months of the gluten-free diet, the symptomatology disappears and the normalization of the biochemical tests is obtained.

There are many published clinical trials that suggest a link between celiac disease and infertility [6-10], unexplained iron deficiency anemia [11,12] and persistent elevations of serum transaminases [7]. The most common biochemical changes associated with celiac disease are ferriptive anemia and elevated transaminase values of unknown cause. There are no precise guidelines to establish the risk groups where screening for celiac disease should be recommended. Iron is an important micronutrient that may be depleted in celiac disease. Iron deficiency and ferriptive anemia may complicate well-established celiac disease, but may also be the presenting clinical feature in the absence of diarrhea or weight loss. If iron deficiency anemia occurs, it should be thoroughly evaluated, even if celiac disease has been defined since other superimposed causes of iron deficiency anemia may be present. Most often, impaired duodenal mucosal uptake of iron is evident since surface absorptive area in the duodenum is reduced, in large part, because celiac disease is an immune-mediated disorder largely focused in the proximal small intestinal mucosa [11-15].

Liver abnormalities are common extraintestinal manifestations of celiac disease. Isolated hypertransaminasemia, with mild or nonspecific histologic changes in the liver biopsy, also known as *celiac hepatitis*, is the most frequent presentation of liver injury in celiac disease [7]. More and more data suggest that women with celiac disease have a decreased fertility span due to late menarche and early menopause [8,9,13]. This case report supports once again that the gluten-free diet is mandatory all life. When this diet is neglected or avoided long term complications of celiac disease arise. One of the most

fearsome complications of this disease that affects mainly the women is infertility of unknown origin. It is very important to recognize this association because most of the cases have very few clinical symptoms or only extra intestinal manifestations. Because there are no precise guidelines for the screening of women with celiac disease, the attention must be channeled on the identification of every potential case [9]. What's so particular about this case is that the patient had increased aminotransferase levels, a finding in 20% of cases [7], late onset of the disease, and fertility disorders associated (two miscarriages, irregular period, tardive menarche).

This patient has many risk factors that could recomand screening for celiac disease: recurrent miscarriage, the late appearance of the first menstrual cycle (14 years old), amenorrhea, irregular period, unexplained iron deficiency anemia and persistent elevations of serum transaminases. However until the occurrence of specific clinical manifestations of celiac disease (dehydration, abdominal pain on palpation spontaneous and diffuse, sensation of bloating, nausea and vomiting) it has not been investigated for this pathology. Increasingly more cases of celiac disease are silent forms. Index of suspicion against a potential case must therefore be very high. Although there are no precise guidelines for the screening of certain female patients with infertility, mixt anemia, elevated trasnsaminases and chronic diarrhea, the careful identification of some potential cases is followed up by a quick success quantified as normalization of biochemical tests, weight gain and fertility recovery.

Conclusions

The mass screening in patient populations is not yet recommended by any medical practice guideline. It places great emphasis on identifying punctually each case. This can only be done by educating health professionals involved in the evaluation of women with fertility disorders, unexplained iron deficiency anemia and persistent elevations of serum transaminases.

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