Infertility- Celiac Disease Not To Be Missed

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Abstract

Background: Celiac disease (CD) is a common chronic immune-mediated, inflammatory disorder of the small intestine induced by a permanent intolerance to dietary wheat, barley, and rye.

Case: A married 25 year old female presented to infertility clinic with 5 year duration of infertility who could not conceive even after 3 cycles of ovulation induction. On detailed evaluation, she was found to have stage III celiac disease (modified marsh classification). Patient was put on Gluten Free Diet (GFD).

Result: After about 3 months, diarrhoea was eradicated and patient had spontaneous conception.

Conclusion: As reproductive alterations are reversible, a timely diagnosis and the introduction of a gluten-free diet are of paramount importance.

Keywords: Celiac disease; Infertility; Gluten free diet

Abbreviations: CD: Celiac Disease; GFD: Gluten Free Diet; TG2: Transglutaminase 2

Introduction

Celiac disease (CD) is a common chronic immune-mediated, inflammatory disorder of the small intestine induced by a permanent intolerance to dietary wheat, barley, and rye [1]. Celiac disease (CD) is a permanent intolerance to gluten, for which the only treatment currently available is a lifelong adherence to a Gluten-Free Diet (GFD). Once patients are diagnosed with celiac disease and begin the gluten-free diet, 70% report symptom relief within two weeks [2]. We are reporting a case report of a 25 year old female of unexplained infertility who was diagnosed with celiac disease on detailed evaluation.

Case Report

A married 25 year old female presented to infertility clinic with 5 year duration of infertility. There was no history of contraception. She had attained menarche at age of 14 years and her menstrual cycles were normal. Physical examination revealed only mild pallor with normal secondary sexual characters. There were no signs of hirsutism and acne. Lab findings revealed normal semen analysis, hemoglobin-9gm% and normal hormonal assay. Endometrial biopsy was negative for tuberculosis and revealed secretory phase. Hysterosalpinogram was normal. She could not conceive even after 3 cycles of ovulation induction. On detailed evaluation, she gave history of intermittent and non-bloody diarrhea for past few years. Patient was referred to a gastroenterologist. In view of chronic diarrhoea and long duration of infertility, serological tests (IgATtg) for celiac sprue was suggested which was found to be positive. Upper gastrointestinal endoscopy with biopsy of 2nd part of duodenum was done which revealed stage III celiac disease (modified marsh classification) (Figure 1). Patient was put on Gluten Free Diet (GFD).

Result

After about 3 months, diarrhoea was eradicated and patient had spontaneous conception. She had spontaneous onset of labour pains and delivered a healthy baby weighing 3 kg. She is at present totally asymptomatic on gluten free diet.
The diagnosis of early developing celiac disease should be based on a combination of clinical features, histology, serology, and genetics. The majority of celiac patients visit five or more doctors prior to diagnosis, with a median time for diagnosis of five-to-11 years after initial presentation. Historically, diagnosis was suggested by positive serology and confirmed with endoscopy. Serum immunoglobulin IgA-class endomysial (EmA) and transglutaminase 2 (TG2) antibodies are powerful tools in diagnosing celiac disease with overt villous atrophy [8]. The diagnosis of celiac disease requires the presence of small intestinal mucosal villous atrophy and crypt hyperplasia.

Malnutrition and its derived symptoms most commonly present in undiagnosed females with celiac disease. This symptom can directly compromise the potential and ability to conceive due to a negative energy balance and the decreased ability to maintain fat storage in afflicted females. Those with undiagnosed celiac disease and who do not follow a gluten-free diet may intensify unfavorable conditions for conception within the body and, more specifically, within the reproductive system. Men also suffer from infertility stemming from undiagnosed celiac disease [9]. Affected males show a picture of tissue resistance to androgens. The increases of follicle-stimulating hormone and prolactin may indicate an imbalance at hypothalamus-pituitary level [10]. Hypogonadism is a known factor in male infertility and has been found in 7% of celiac males in one survey.

Conclusion
In the past years, reports on the existence of a possible association between celiac disease and reproductive tract disorders have increased. As reproductive alterations are reversible, a timely diagnosis and the introduction of a gluten-free diet are of paramount importance. Thus, the use of early CD indicators, such as vitamin and/or iron deficiencies, andrologic or endocrinologic dysfunctions, should allow a prompt adoption of prevention and treatment strategies.

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