

Case report



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Recurrent miscarriages and celiac disease: case report

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Abstract

Celiac disease (CD) is an autoimmune disease resulting from the exposure of a genetically predisposed individual to a food antigen represented by gluten. It can lead to reproductive disorders and pregnancy complications (unexplained infertility problems and recurrent miscarriage). We report through this work the case of a woman who consulted for repeated miscarriages whose etiology was finally linked to celiac disease, the removal of gluten from her diet allowed her to get a pregnancy after 8 months.

Introduction

Celiac disease is a common immune-based disease that often affects the small intestine, which is also known as gluten sensitive enteropathy. It affects genetically predisposed patients (HLA DQ2/DQ8). Its prevalence is estimated at around 1% of the general population. It is associated with a high risk of fertility problems and complications during pregnancy, including recurrent miscarriages. We report the case of a patient with several miscarriages whose etiology has finally been linked to celiac disease.

Patient and observation

A 34-year-old patient with no significant pathological history, blood grouping B+, nulliparous, who consults for repeated early abortions without other associated clinical anomalies. Clinical evaluation for recognized causes of recurrent pregnancy loss (RPL) was performed at the discretion of the physician and included a hysterosalpingography, a spermogram, infectious assessment, the search for thrombophilia (circulating anticoagulants, anti-thrombin deficiency, anti-native DNA antibody, anti-nuclear antibody, protein C deficit, protein S deficit, search for antiphospholipid antibody syndrome, search for hyperhomocysteinemia), endocrinopathy (search for diabetes, thyroid check-up), karyotypic abnormalities and everything was negative. Furthermore, there were no clinical digestive abnormalities or biological malabsorption syndrome. The search for anti-transglutaminase antibodies and anti-endomysium IgA antibodies was positive at a very high rate. The jejunal biopsy showed the presence of subtotal villous atrophy with cryptic hyperplasia and 45% intraepithelial lymphocytosis compatible with celiac disease. The patient has since started to follow the gluten-free diet. 8 months later, the patient had a pregnancy, she continued her diet throughout the pregnancy. The pregnancy was uneventful and she gave birth to a newborn baby in good condition with normal birthweight.

Discussion

In 1970, Moriss *et al* were the first to report the case of three infertile women in whom the discovery and treatment of celiac disease led to normal pregnancies and childbirth [1-3]. Reproductive disorders and pregnancy complications are frequent symptoms of the celiac disease which rarely make seek this pathology [2,4,5]. Indeed, 19.4% of women with this disease have amenorrhea but also, oligo-hypomenorrhea, dysmenorrhea and metrorrhagia [6]. There is also a strong correlation between celiac disease and early miscarriages, threat of abortion, preeclampsia and intrauterine growth restriction (IUGR) [7]. The pathogenesis of all these gynecobstetric problems is not completely clear. However, two main hypotheses can be made, autoimmune origin and malnutrition [8]. As part of the research into the physiopathology of these disorders, some authors are interested in vitamins and trace elements such as folic acid, selenium and zinc. These are essential nutrients for a woman's reproductive function, and are poorly absorbed in celiac disease [2]. These authors have shown, among other things, that the zinc deficiency causes a disorder in the secretion and the action of LH and that of FSH which disturbs the ovarian functioning. This may partly explain the problems of infertility and early miscarriages caused by celiac disease. Based on this physiopathogenic hypothesis, some authors have managed to restore good reproductive function by correcting these deficits alongside a gluten-free diet in infertile women with celiac disease [9]. However, other studies have shown that simply correcting this nutrient deficit, without combining a gluten-free diet, is not enough to achieve pregnancies. The authors concluded that the infertility problem associated with celiac disease is more complex than a simple deficiency in vitamins and trace elements [10,11].

The other physiopathological path explored to try to understand the mechanism of these disturbances of the genital life associated with celiac disease is that of autoimmunity. In this sense,

some authors have compared the serum of healthy women to those of women with active celiac disease with gynecological-obstetrical manifestations. They have shown that women with CD often show increased levels of serum auto-antibodies, including anti-transglutamines and anti-thyroid antibodies [12]. The gluten-free diet significantly reduces the risk of developing recurrent pregnancy loss. In a prospective study, 13 women with CD who had 22 RPL were followed for ten years after their gluten-free diet, six of them carried pregnancies to term without any RPL [12]. A before-after type study comparing 12 untreated pregnant women with celiac disease to 12 treated with a gluten-free diet found a risk of RPL reduced by 9.18 (95% CI = 1.05-79.9) (117). The efficiency of the gluten-free diet therefore underlines the importance of detection for celiac disease in women prone to spontaneous recurrent miscarriage, even asymptomatic. This clinical case, illustrates the association between celiac disease and recurrent miscarriages. It also clearly shows the clinician's difficulty in relating the symptom "abortive disease" to this pathology. Finally, the case we present supports the opinion of many authors who consider that untreated celiac disease is more likely to provide these complications [13]. Indeed, it has been shown a correlation between the higher rate of antibodies in the case of active celiac disease and the clinical gynecological-obstetrical manifestations [14,15].

Conclusion

Fertility abnormalities and gynecological-obstetrical disorders are part of the extra-digestive manifestations of celiac disease. Its research is therefore necessary in the etiological assessment of recurrent miscarriages.

Competing interests

The authors declare no competing interests.

Authors' contributions

CE wrote the paper. SA, AN, NZ, AL, AB contributed by correction of this paper. All the authors read and approved the manuscript.

References

1. Mehdi Kehila, Rim Ben Hmid, Imene Godcha, Hassine Saber Abouda, Oueslati Boujomaa, Mohamed Badis Chanoufi. La maladie coeliaque: cause rare de fausses couches à répétition. *Pan Afr Med J.* 2016;25: 197. **PubMed**
2. Sabri S, Hamaz S, Sadki I, Sandouno TM, Bouaguagua R, Darine H *et al.* Fausses couches à répétition: Attention à la maladie coeliaque. *Rev Med.* 2018;39(2): 234. **Google Scholar**
3. Morris JS, Adjuikiewicz AB, Read AE. Coeliac infertility: an indication for dietary gluten restriction. *Lancet.* 1970 Jan 31;1(7640): 213-4. **PubMed | Google Scholar**
4. Karandish E, Hachem C. Celiac disease. *Mo Med.* 2009 Sep-Oct;106(5): 346-50. **PubMed | Google Scholar**
5. Dubé C, Rostom A, Sy R, Cranney A, Saloojee N, Garrity C *et al.* The prevalence of celiac disease in average-risk and at-risk Western European populations: a systematic review. *Gastroenterology.* 2005;128(4 Suppl1): S57-67. **PubMed | Google Scholar**
6. Stazi AV, Mantovani A. A risk factor for female fertility and pregnancy: celiac disease. *Gynecol Endocrinol.* 2000;14(6): 454-63. **PubMed | Google Scholar**
7. Molteni N, Bardella MT, Bianchi PA. Obstetric and gynecological problems in women with untreated celiac sprue. *J Clin Gastroenterol.* 1990;12(1): 37-9. **PubMed | Google Scholar**
8. Eliakim R, Sherer DM. Celiac disease: fertility and pregnancy. *Gynecol Obstet Invest.* 2001;51(1): 3-7. **PubMed | Google Scholar**

9. Rostami K, Steegers EAP, Wong WY, Braat DD, Steegers - Theunissen RPM. Coeliac disease and reproductive disorders: a neglected association. *Eur J Obstet Gynecol Reprod Biol.* 2001 Jun;96(2): 146-9. **PubMed** | **Google Scholar**
10. Singhal N, Alam S, Sherwani R, Musarrat J. Serum zinc levels in celiac disease. *Indian Pediatr.* 2008 Apr;45(4): 319-21. **PubMed** | **Google Scholar**
11. Meloni GF, Dessole S, Vargiu N, Tomasi PA, Musumeci S. The prevalence of coeliac disease in infertility. *Hum Reprod.* 1999 Nov;14(11): 2759-61. **PubMed** | **Google Scholar**
12. Shamaly H, Mahameed A, Sharony A, Shamir R. Infertility and celiac disease: do we need more than one serological marker. *Acta Obstet Gynecol Scand.* 2004 Dec;83(12): 1184-8. **PubMed** | **Google Scholar**
13. Seissler J, Wohlrab U, Wuensche C, Scherbaum WA, Boehm BO. Autoantibodies from patients with coeliac disease recognize distinct functional domains of the autoantigen tissue transglutaminase. *Clin Exp Immunol.* 2001 Aug;125(2): 216-21. **PubMed** | **Google Scholar**
14. Molteni N, Bardella MT, Bianchi PA. Obstetric and gynecological problems in women with untreated celiac sprue. *J Clin Gastroenterol.* 1990;12(1): 37-9. **PubMed** | **Google Scholar**
15. Anjum N, Baker PN, Robinson NJ, Aplin JD. Maternal celiac disease autoantibodies bind directly to syncytiotrophoblast and inhibit placental tissue transglutaminase activity. *Reprod Biol Endocrinol.* 2009 Feb;7: 16. **PubMed** | **Google Scholar**