FAITS CLINIQUES

Uveitis revealing coeliac disease : a case report

Uvéite révélant une maladie coeliaque : à propos d'un cas

Abdaoui Mouna*, Ben Abderrazek Atf, Jabri Ahmed, Khallouli Asma, Maalej Afef, Rannen Riadh

Department of Ophthalmology, Military Hospital of Tunis, Tunis, Tunisia

Keywords
coeliac disease, uveitis, gluten-free diet

Abstract

Introduction. Coeliac disease is an autoimmune disease triggered by gluten consumption, While coeliac disease is associated with extraintestinal manifestations, ocular involvement is rare. .
Observation. We report the case of a 14-year-old male with a history of diabetes mellitus type 1 who presented with redness and blurred vision in both eyes. The diagnosis of uveitis revealing a coeliac disease was made. Topical steroids and and a gluten free diet were initiated, leading to the remission of ocular symptoms.
Conclusion. Coeliac disease should be considered as a potential cause of uveitis, especially in presence of gastro-intestinal symptoms. Gluten-free diet remains the main treatment.

Mots-clés
maladie coeliaque, uvéite, régime sans gluten

Résumé

Introduction. La maladie cœliaque est une pathologie auto-immune déclenchée par la consommation de gluten. Bien que la maladie cœliaque soit associée à des manifestations extra-intestinales, l'atteinte oculaire est rare. .
Observation. Nous rapportons le cas d'un jeune homme de 14 ans ayant des antécédents de diabète type 1 qui a présenté une rougeur et un flou visuel bilatéral. Le diagnostic d'uvéite révélant une maladie cœliaque a été retenu. Une corticothérapie topique et un régime sans gluten ont été instaurés, entraînant la rémission des symptômes oculaires
Conclusion. La maladie cœliaque doit être considérée comme une cause potentielle d'uvéite, en particulier en présence de symptômes gastro-intestinaux. Le régime sans gluten reste le principal traitement.

Introduction

Coeliac disease (CD) is an autoimmune disease triggered by the consumption of gluten, in individuals with a genetic susceptibility [1]. CD leads to the atrophy of the villi of the small intestine, which causes the loss of certain essential nutrients, such as vitamins (particularly fat-soluble vitamins), water, and electrolytes. Studies have shown that gliadin, a component of gluten found in wheat, binds to the endomysium, which leads to an inappropriate immune response against antigens present in gluten. The presence of IgA antibodies against the endomysium (IgA-EMA antiendomysial), along with small bowel biopsy, is an important component of the diagnostic process for CD [2]. While CD has been associated with many extraintestinal manifestations, ocular involvement is rare.[3] We describe here a case of coeliac disease revealed by uveitis.

Case report

A fourteen-year-old male with a medical history of type 1 diabetes mellitus presented to our department with bilateral redness and blurred vision. His best-corrected visual acuity (BCVA) was 20/100 in both eyes. Anterior segment examination revealed small keratic precipitates with 1+ cells in the anterior chamber and 2+ flare in the vitreous, in both eyes. Intraocular pressure was 24mm Hg in the right eye and 25mm Hg in the left eye. Fundus examination revealed bilateral papillitis with no signs of choroiditis or vasculitis **(Figure 1)**. Fundus fluorescein angiography (FFA) showed early hyperfluorescence of the optic disc in both eyes **(Figure 2).**

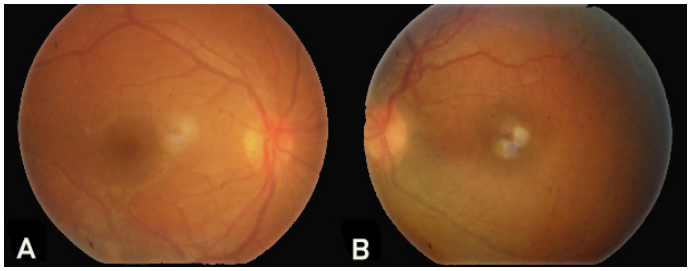

Figure 1. Fundus photography demonstrating papillitis and vitreous haze in right eye (A) and left eye (B).

An etiological assessment was carried out to rule out an infectious or inflammatory origin, but no underlying cause was found. Laboratory tests revealed anemia. On further questioning, the patient described joint pain and recurrent diarrhea. Due to the history of type 1 diabetes mellitus (DM1) and the digestive symptoms, a biopsy of the small intestine was conducted, revealing crypt hyperplasia and mild intraepithelial lymphocytosis. Anti-transglutaminase antibodies and anti-endomysium antibodies were positive. A small bowel biopsy confirmed celiac disease. Topical steroids and beta-blocker eye drops were initiated, and a gluten-free diet was started. Six weeks later, ophthalmological examination showed no signs of uveitis with a remission of gastrointestinal symptoms **(Figure 3).**

*Corresponding author :
Mouna Abdaoui
e-mail: drabdaouimouna@gmail.com
Department of Ophthalmology, Military Hospital of Tunis, Tunis, Tunisia

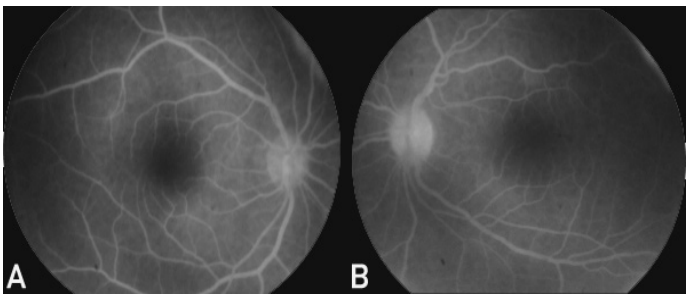

Figure 2. Fluorescein angiography revealing early hyperfluorescence of optic disc in right eye (A) and left eye (B).

Discussion

Coeliac disease (CD) has been associated with a wide range of extraintestinal manifestations, such as dermatological, neurological, and hepatic manifestations, that may occur in up to 50% of patients. Ophthalmologic symptoms are part of the extraintestinal manifestations and can be classified as autoimmune disorders or due to nutrient deficiency [3]. CD-induced malabsorption can cause vitamin deficiencies, specifically in Vitamin A, which can lead to dry eye syndrome, as well as nyctalopia, keratomalacia, and corneal ulceration [4]. If CD is present, cataract formation is also a risk for younger patients as it can lead to the malabsorption of vitamins and trace elements, as well as dehydration induced by diarrhea. Low levels of serum vitamin D and calcium can also increase the risk of cataractogenesis by disturbing lens calcium homeostasis [5]. Additionally, thyroid-associated orbitopathy (TAO), an autoimmune disorder affecting the orbit and periorbital tissues, is known to be associated with Graves' disease or Hashimoto thyroiditis, and can be more common in CD patients because proinflammatory cytokines released from CD can reinforce the immune pathways of autoimmune thyroid diseases [6]. Uveitis can also be linked to CD. Anterior uveitis was found in 5% of patients with celiac disease [7]. A nationwide cohort study from Sweden found that CD patients have a higher risk of uveitis and that the risk remains even five years after diagnosis. Shared immunological factors such as the human leukocyte antigen (HLA) system and production of interferon may explain the association between CD and uveitis, and gluten-free diets may improve its course and outcome [8].

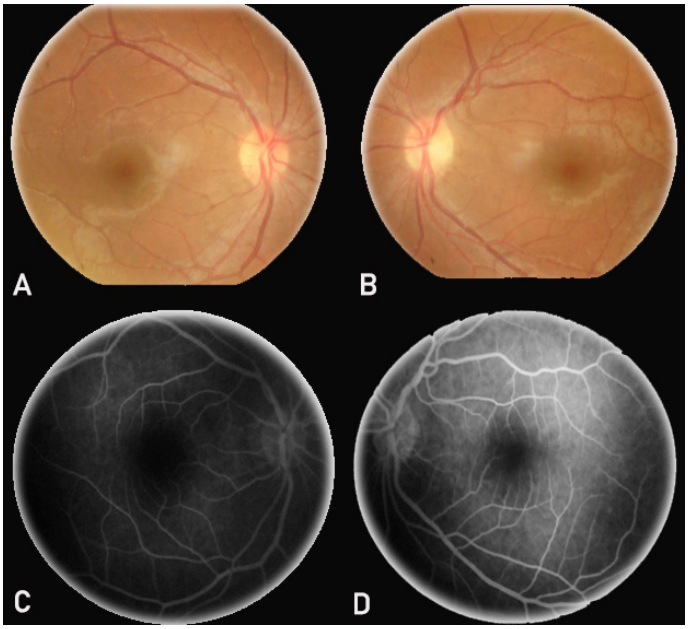

Figure 3. At 6-week follow-up, Colour fundus photos (A) and Fundus fluorescein angiography (B) were completely normal

However, there is no specification of the type of uveitis described in CD in the literature. In our case, CD was suspected in a young patient with DM1 who had neglected gastrointestinal symptoms. CD diagnosis was based on histological signs found on intestinal biopsy. The patient was started on a gluten-free diet. Appropriate diet is believed to lower the self-specific antibodies which may explain the significant improvement of the ocular symptoms in few weeks. Only a few similar cases have been described in the literature. Laghmari and al. reported one case of CD among 20 cases of pediatric uveitis [9]. Hyrailles et al. reported a case of uveitis complicating coeliac disease in a patient who stopped the gluten-free diet [10]. Klack et al. described another case of uveitis revealing CD in a 28-year-old patient with a complete remission of ocular manifestations in few weeks following GFD introduction [11]. Krifa et al. reported a similar case of a 9-year-old type 1 diabetic patient who had uveitis as a first manifestation of coeliac disease, with significant improvement by GFD [12]. More recently, Chiguer et al. described a case of panuveitis occurring in a 14-year-old child with coeliac disease and DM1. The symptoms disappeared after a strict GFD [13].

Conclusion

In conclusion, celiac disease (CD) is a systemic disease and not solely involving the intestinal tract. Although ocular manifestations are rare, Celiac disease (CD) should be considered as a potential cause of uveitis, especially in association to gastrointestinal symptoms. Gluten-free diet (GFD) remains the main treatment and can lead to a significant improvement of ocular symptoms in few weeks.

Disclosure statement

Declaration of conflicting interests. The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding. The author(s) received no financial support

References

[1] Singh P, Arora A, Strand TA et al. Global Prevalence of Celiac Disease: Systematic Review and Meta-analysis. Clin Gastroenterol Hepatol 2018;16: 823-836.

[2] Cianci R, Cammarota G, Lolli S, Gasbarrini GB, Pandolfi F (2008) Abnormal synthesis of IgA in coeliac disease and related disorders. J Biol Regul Homeost Agents 22(2):99–104

[3] Fousekis, F. S., Katsanos, A., Katsanos, K. H., & Christodoulou, D. K. (2020). Ocular manifestations in celiac disease: an overview. International Ophthalmology, 40(4), 1049-1054.

[4] Karatepe Hashas AS, Altunel O, Sevinc E, Duru N, Alabay B, Torun YA. The eyes of children with celiac disease. J AAPOS. 2017 Feb;21(1):48-51.

[5] Brown CJ, Akaichi F (2015) Vitamin D deficiency and posterior subcapsular cataract. Clin Ophthalmol 9:1093–

[6] Mormile R (2016) Celiac disease and Hashimoto's thyroiditis:a shared plot? Int J Colorectal Dis 31(4):947

[7] Martins TGDS, Miranda Sipahi A, Dos Santos FM, Schor P, Anschütz A, Mendes LGA, Silva R. Eye disorders in patients

[8] Mollazadegan K, Kugelberg M, Tallstedt L, Ludvigsson JF. Increased risk of uveitis in coeliac disease: a nationwide cohort study. Br J Ophthalmol. 2012 Jun;96(6):857-61.

[9] Laghmari M, Karim A, Guedira K, Ibrahimy W, Dahreddine M, Essakalli NH, et al. Uveitis in children: about 20 cases. J Fr Ophtalmol 2003;26:609—13.

[10] Hyrailles V, Desprez D, Beauerère L, de Ferrier F, Larrey D, Ramos J, et al. Uveitis complicating celiac disease and cured by glutenfree diet. Gastroenterol Clin Biol 1995;19:543—4.

[11] Klack K, Pereira RM, de Carvalho JF. Uveitis in celiac disease with an excellent response to gluten-free diet: third case described. Rheumatol Int. 2011 Mar;31(3):399-402.

[12] Krifa F, Knani L, Sakly W, Ghedira I, Essoussi AS, Boukadida J, Ben Hadj Hamida F. Uveitis responding on gluten free diet in a girl with celiac disease and diabetes mellitus type 1. Gastroenterol Clin Biol. 2010 Apr-May;34(4-5):319-20.

[13] Chiguer S, Yousfi M, Mchachi, Benhmidoune, Rachid R, El Belhadji M. Pan-Uveitis in Celiac Disease: A Case Report. Sch J Med Case Rep, Feb, 2023; 11(2): 140-143.