Uveitis responding on gluten free diet in a girl with celiac disease and diabetes mellitus type 1

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Available online 28 April 2010

Summary A 9-year old girl with a history of diabetes mellitus type 1, presented with visual loss of the left eye. The right eye examination was unremarkable. Slit-lamp examination revealed few small and fine keratic precipitates. We noted 2+ flare in the vitreous. There was no choroiditis, papillitis or retinal vasculitis. No aetiology was found. The patient was treated by topical and systemic corticosteroids without any improvement. Celiac disease was discovered by the presence of celiac antibodies in the work-up of joint pain and diabetes mellitus type 1. Antiendomysium antibodies and anti-transglutaminase antibodies were both positive. A small bowel biopsy confirmed celiac disease. A gluten free diet was set up and corticosteroids were tapered off. Recovery of the uveitis was obvious during gluten free diet and normalized within two months.

Introduction

Celiac disease (CD) is an autoimmune disorder triggered in genetically susceptible persons by the ingestion of a single dietary factor — wheat, rye and barley-derived gluten. It is characterized by the presence of typical autoantibodies and mucosal abnormalities of the small bowel mucosa. CD is treated with a gluten-free diet (GFD), which leads to resolution of the clinical disease and the normalization of the histology. Ocular manifestations are rarely associated with CD [1,2]. We report a case of intermediate uveitis in a young girl in whom the diagnosis of CD has been done fortuitously.

Case report

A nine-year old girl was hospitalized in the Department of Ophtalmology because of visual loss of the left eye. The
right eye examination was unremarkable. The medical history revealed a diabetes mellitus type 1 (DM1) since one year.

Best-corrected visual acuity in the left eye was 2/10. Slit-lamp examination revealed few small and fine keratic precipitates. There were no cells or flare in the anterior chamber. After pupillary dilatation, there were no posterior synechiae. We noted a 2+ flare in the vitreous. There was no chorioiditis, papillitis or retinal vasculitis.

Laboratory tests and imaging studies were performed screening for main infectious causes (tuberculosis, syphilis) and inflammatory causes (sarcoidosis, juvenile idiopathic arthritis) of uveitis. No aetiology was found.

The patient was treated by topical and systemic corticosteroids without any improvement.

During her hospitalization our patient described a joint pain. Work-up for this in relation with DM1 and uveitis was performed. Anti-endomysium antibodies and anti-transglutamnase antibodies were determined and were both positive. A small bowel biopsy showed subtotal villous atrophy with increased intraepithelial lymphocytes (Marsh III B), which confirms the diagnosis of CD. To verify if the CD was really asymptomatic, direct enquiry with patient’s mother has been done and revealed hypoglycaemic episodes and weight loss. Laboratory tests showed anaemia (Hb 10.7 g/dl).

A GFD was set up and corticosteroids were tapered off. Within two months after starting GFD, uveitis disappeared and improvement in metabolic control and a decrease in hypoglycaemic episodes have been observed. Joint pain also disappeared.

The patient is now under GFD for 2 years. She did not have recurrence of uveitis and DM1 is well controlled.

Discussion

Extraintestinal manifestations of CD are more frequent than typical symptoms, but ocular manifestations are uncommon [1]. Uveitis is rare. It has been reported that among 20 patients with childhood uveitis, only one has also CD [3]. Furthermore, a case of uveitis has been reported in a 23-year old man who was known to have CD since the age of 18 months and who stopped the GFD at the age of 15 years. Within five months after restarting GFD, uveitis disappeared [4]. Klack et al. described another uveitis case in 28-year old women who after 3 months on a GFD demonstrated significant improvement of gastrointestinal symptoms and uveitis, as well as a reduction of anti-endomysium antibodies. After 6 months, there was complete remission of gastrointestinal symptoms and total control of uveitis [2]. In our patient, uveitis was resistant to corticosteroid and improvement by GFD was obvious.

Our patient had DM1 since one year. CD may be associated with various autoimmune disorders such as DM1 [5]. In our previous study about screening for CD in 205 children with DM1, the prevalence of biopsy-proven CD was 5.3 and 9.8% of girls had anti-endomysium antibodies [5]. However CD is underdiagnosed in this at-risk population because it is often screened only in DM1 patients who have typical clinical signs of CD. Our patient didn’t complain of diarrhoea or other gastrointestinal symptoms. However she had weight loss, anaemia and hypoglycemic episodes but CD remained unfortunately undiagnosed until she had uveitis. CD was diagnosed by the discovery of anti-endomysium and anti-transglutaminase antibodies.

A diagnosis of CD should be considered if main causes of uveitis are ruled out. The spectacular improvement on GFD seems very suggestive. The pathogenic mechanisms of gluten induced extraintestinal manifestations of CD are not understood. A general and disease specific phenomenon is the occurrence of circulating gluten dependent autoantibodies which target transglutaminse 2. In fact, CD autoantigen is widely accessible to the intestinally produced circulating celiac autoantibodies throughout the body. Based on clinical evidence of the occurrence of extraintestinal manifestations, CD should be regarded as a systemic disease and not solely involving the intestinal tract [6]. Ocular complications are rarely described in association with CD. It is sometimes difficult to consider a condition as associated with CD or an extraintestinal manifestation of CD.

CD should be considered among causes of uveitis even when gastrointestinal symptoms are lacking. In fact, it may cause visual loss. Corticosteroids are ineffective and GFD might be the mainstay of treatment.

Conflicts of interest

No conflicts of interest.

Acknowledgement

We would like to thank Dr. C.J. Mulder for reviewing the manuscript and providing us with his valuable comments.

References