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Cerebral Venous Thrombosis Revealing Celiac Disease: A Rare Case Report

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Abstract: Celiac disease (CD) is a systemic, chronic autoimmune disease. CD can present with or without gastrointestinal manifestations. Cases of venous thrombosis associated with celiac disease have been rarely published. We report a case of cerebral venous thrombosis revealing celiac disease.
Keywords: celiac disease, cerebral venous thrombosis, hyperhomocysteinemia.

INTRODUCTION

Celiac disease (CD) is a common gastrointestinal autoimmune disorder that occurs in genetically predisposed individuals. This disease can be responsible for neurological complications such as ataxia and peripheral neuropathies but also thrombotic events. The thrombosis is usually of atypical site (abdominal veins) [1]. Cerebral venous thrombosis (CVT) is rarely reported during CD and is exceptionally a revealing mode. The cause of the vascular disorders seen in patients with CD remains controversial. We report the case of female patient with CD revealed by CVT.

CASE REPORT

A 32-year-old woman, with history of anemia, presented to the emergency department with a new onset of a generalized convulsive status epilepticus. Her family described progressive worsening of sharp headaches within 72 hours accompanied by nausea and vomiting.

On presentation, her blood pressure was 100/60 mm Hg, and her heart rate was 62 beats per minute. She was afebrile, her glycaemia was 1.09 g/l and her neck was supple.

On neurologic examination, she was somnolent with right hemiparesis without facial paralysis. Funduscopic examination revealed bilateral papilledema. Cranial nerve examination was otherwise normal, and the remainder of her neurologic examination was unremarkable. A Cranial CT revealed a right frontal hypodense lesion without contrast enhancement (figure 1). Cerebrospinal fluid analysis and the pressure were normal.

Brain MRI showed an acute thrombosis of the Superior Sagittal Sinus, with bilateral venous infarction (figure 2). Biological investigations revealed iron deficiency anemia of 9.4 g/dl. Testing for thrombophilia, including protein C, protein S, antithrombin deficiency, antiphospholipid syndrome, prothrombin G20210A mutation, MTHFR mutation and factor V Leiden was normal. The blood level of vitamin B12 was normal and homocysteine was high with titer of 27.54umol/l (normal < 11 µmol/l).

Gastroesophageal endoscopy and duodenal biopsy objectified a villous atrophy (figure 3). Anti-tissue transglutaminase antibodies (IgA) were positive with a titer of 29.17(normal <10 UI/ml), anti-tissue transglutaminase antibodies (IgG) were positive with a titer of 14.15 (normal <10 UI/ml), anti-endomysial antibodies (IgG) were positive with a titer of 33 (normal <25) and antigliadin antibodies were not performed.

The diagnosis of CVT associated with celiac disease was retained. The patient received adequate anticoagulation initially with heparin and continued with vitamin K antagonists, she also received antiepileptic drugs and a lifelong a gluten-free diet was recommended.

The outcome was good, the symptoms resolved and the patient was discharged.

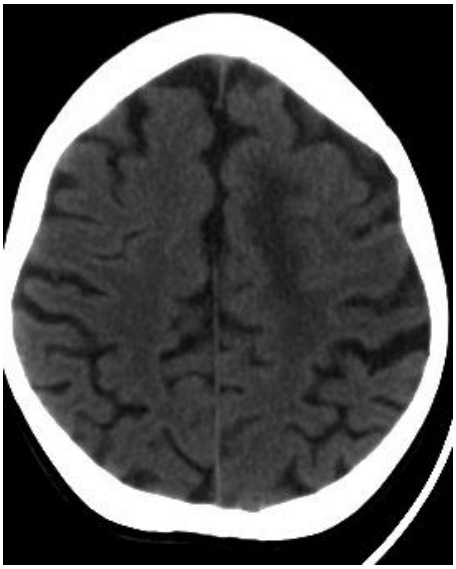
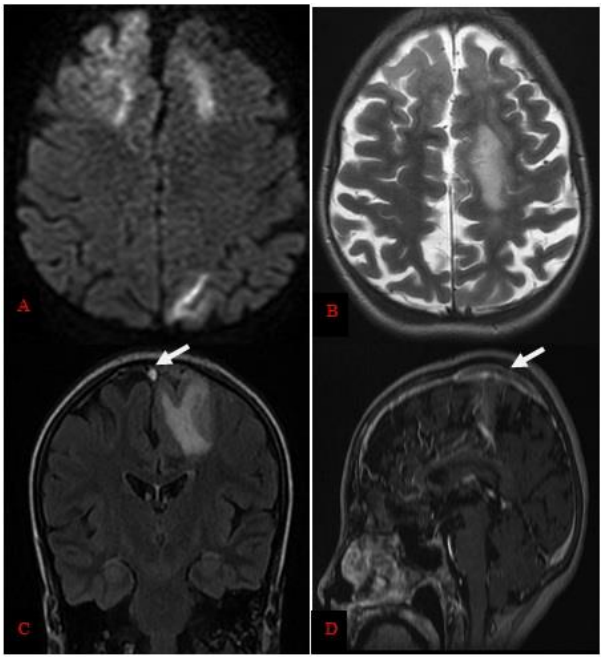


Fig-1: Non contrast Brain CT scan showing left frontal venous infarct



Fg-2:Axial diffusion (A), axial T2-weighted (B) and coronal FLAIR (C) MR images show bilateral frontal venous infracts with hypertensity of the longitudinal sinus on coronal FLAIR image (C). Sagittal T1-weighted MR image with contrast-enhanced (D) shows thrombosis of superior sagittal sinus

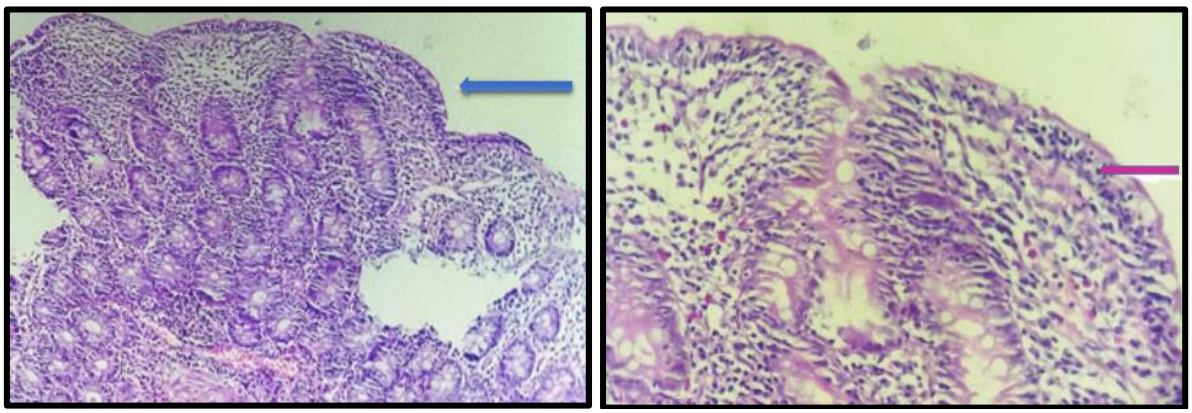


Fig-3: Duodenal mucosal biopsy demonstrated villi atrophy and significant lymphocytic proliferation

DISCUSSION

CD is the most common autoimmune food intolerance in the world. It is a chronic disorder of the digestive tract that results in an inability to tolerate gliadin, the alcohol-soluble fraction of gluten. When patients with celiac disease ingest gliadin, an immunologically mediated inflammatory response occurs that damages the mucosa of their intestines, resulting in maldigestion and malabsorption of food nutrients [2].

CD typically presents with gastrointestinal symptoms such as diarrhea, abdominal distension and failure to thrive, but there has been an increasing awareness of extra-intestinal manifestations, including neurologic symptoms [3]. The first observations were reported in 1908 when two patients with celiac disease developed peripheral nerve damage [4]. Subsequently, other neurological disorders were described like cerebrovascular thrombosis with twelve publications found in the literature concerning this association stroke and celiac disease [5].

The occurrence of thromboses during CD is reported in the literature of both adults and children, with an estimated prevalence of 8% [6-7]. These thromboses can be inaugural of the disease and essentially affect the venous territories with the predilection of the unusual seats. The hepatic veins represent the most frequent localization, followed by the involvement of the portal trunk [6]. More rarely, CVT has been reported [8-9].

CVT can occur in CD patients, even in absence of gastrointestinal symptoms [10] as was for our patient. CD should be considered as a possible etiology for CVT, whether gastrointestinal manifestations are evident or not.

The thromboses are related to blood hypercoagulability. The etiology of the hypercoagulability in CD is multifactorial, it may result from B12 vitamin or folate deficiencies, genetic predisposition (MTHFR mutations), and hyperhomocysteinemia [11-12]. Also, as an autoimmune disorder, CD can be associated with numerous pathologies of immunologic etiology with high thrombogenic risk, including systemic lupus erythematosus (SLE), Sjogren's syndrome and antiphospholipid syndrome (APS) [1]. In our case the CD was revealed by CVT with hyperhomocycteinemia and no other associated autoimmune disease or thrombophilic disorder were detected.

The hyperhomocysteinemia is an independent risk factor for arterial and venous thrombosis. It may be secondary to a deficiency of vitamin B6, B9, B12 and / or MTHFR mutations. Its prevalence during CD would be 20% [13]. The risk of venous thrombosis associated with a moderate increase in homocysteine levels in the general population and in patients with venous thromboembolism is admitted [14].

CONCLUSION

We suggest that the diagnosis of celiac disease should be mentioned even in the absence of digestive signs in patients with CVT. The search for risk factors is essential in these patients. Their correction must to be undertaken. The gluten-free diet remains the essential treatment of celiac disease.

REFERENCES

1. Beyrouti R, Mansour M, Kacem A, Derbali H, Mrissa R. Recurrent cerebral venous thrombosis revealing celiac disease: an exceptional case report. Acta Neurol Belg. 2017 Mar; 117(1):341-343
2. Green PH, Cellier C. Celiac disease. N Engl J Med. 2007 Oct 25. 357(17):1731-43
3. Shapiro M, Blanco DA. The Neurological Manifestations of Gastrointestinal Disease, Seminars in Pediatric Neurology 2017 Feb. 24(1):43-53.
4. El Moutawakil B, Chourkani N, Sibai M, Moutaouakil F, Rafai M, Bourezgui M, Slassi I. Celiac disease and ischemic stroke. Revue neurologique. 2009 Nov;165(11):962-6.
5. Edward J Ciaccio, Suzanne K Lewis, Angelo B Biviano, Vivek Iyer, Hasan Garan, Peter H Green. Cardiovascular involvement in celiac disease. World J Cardiol 2017 August 26; 9(8): 652-666
6. Berthoux E, Fabien N, Chayvialle JA, Ninet J, Durieu I. Adult celiac disease with thrombosis: a case series of seven patients. Role of thrombophilic factors. La Revue de medecine interne. 2011 Oct;32(10):600-4.
7. Ghannouchi NJ, Atig A, Bouker A, Alaoua O, Ben EJ, Khalifa M, Bahri F. Intracardiac thrombosis during celiac disease. Journal des maladies vasculaires. 2014 May;39(3):203-6.
8. Bahloul M, Chaari A, Khlaf-Bouaziz N, Kallel H, Chaari L, Hamida CB, Chelly H, Rekik N, Bouaziz M. Maladie coeliaque, thrombose veineuse cérébrale et déficit en protéine s, une association fortuite?. Journal des maladies vasculaires. 2005 Sep 1;30(4):228-30.
9. Dumic I, Martin S, Salfiti N, Watson R, Alempijevic T. Deep Venous Thrombosis and Bilateral Pulmonary Embolism Revealing Silent Celiac Disease: Case Report and Review of the Literature. Case Reports in Gastrointestinal Medicine. 2017;2017.
10. Doğan M, Peker E, Akbayram S, Bektas MS, Basaranoglu M, Cesur Y, Caksen H. Cerebral venous sinus thrombosis in 2 children with celiac disease. Clin Appl Thromb Hemost 2011 Oct;17(5):466-9

11. Lerner A, BlankM, Hypercoagulability in celiac disease—An update, Autoimmunity Reviews 13 (2014) 1138–1141
12. Belfkih R, Souirti Z, Chtaou N , Messouak O, Belahsen F. Ischemic stroke revealing celiac disease. Pan African Medical Journal. 2010; 5:2
13. Saibeni S, Lecchi A, Meucci G, Cattaneo M, Tagliabue L, Rondonotti E, Formenti S, de Franchis R, Vecchi M. Prevalence of hyperhomocysteinemia in adult gluten-sensitive enteropathy at diagnosis: role of B12, folate, and genetics. Clinical Gastroenterology and Hepatology. 2005 Jun 1;3(6):574-80.
14. M. Boucelma, Association of celiac disease and cerebral venous thrombosis: Report of two cases. Journal des Maladies Vasculaires (2013) 38, 47-5.