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Celiac disease in the context of airborne allergen-associated chronic vulvo-vaginitis

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Abstract. – We present a woman with a three-year history of severe chronic urticaria and recurrent vulvo-vaginal Candidiasis in the setting of seasonal allergic rhinitis. Her past medical history was significant only for Bell's palsy in her childhood. Her review of systems was otherwise negative (specifically: no history of diarrhea, weight loss, malabsorption, anemia, nor eczema). Extensive testing revealed seasonal sensitivities to outdoor allergens and celiac disease. Repeating the evaluation six months after initiating a wheat-free diet, her vulvo-vaginal symptoms resolved.

Key Words:
Celiac disease, Chronic vaginitis, Recurrent vulvo-vaginal Candidiasis, Urticaria, Allergic rhinitis.

Case Report

A 45-year-old woman presented with severe chronic urticaria for three years with regular relapses associated with seasonal exacerbations of allergic rhinitis during spring and late summer. Allergic rhinitis and mild reactive airway disease with exercise-induced bronchospasm had been present since childhood, but until the year before, her evaluation had never led her to seek special treatment. Over-the-counter antihistamines and H_2-receptor blockers were prescribed by an allergist with incomplete symptom resolution six months prior to presentation to our institution. Her history included recurrent vulvo-vaginal Candidiasis, which manifested with discharge, itching, pain, and dyspareunia with parallel increasing severity and frequency of symptoms. Fissures involving the perianal and intergluteal area complicated the clinical course over the months preceding evaluation. Fluconazole had been used on several occasions and was noted to improve pruritus during spring and summer recurrences of urticaria. Vulvar irritation proved responsive to oral hydroxyzine. Topical treatment included nystatin, steroids, and tacrolimus without noticeable improvement. Past medical history was significant for Bell's palsy in her childhood. There was no history of chronic diarrhea, weight loss, malabsorption, or anemia. There was no history of dermatitis herpetiformis or eczema.

Intradermal skin testing demonstrated seasonal sensitivities to outdoor allergens, mostly ragweed, local tree, and grass pollen. Lesser degree skin reactivities were obtained for various molds. Airborne allergen immunotherapy was initiated based on the previously reported association of airborne allergen sensitivity compounding certain types of chronic vaginitis[1]. Celiac disease markers were ordered because of the characteristic development of fissures. Serum tissue transglutaminase IgA was present at 62 U/mL (negative < 7; positive > 10 U/mL). Antigliadin IgA was 18 U/mL (negative < 7; positive >10 U/mL). Antigliadin IgG was 21 U/mL (negative < 7; positive >10 U/mL). With the combination of three positive markers the likelihood of celiac disease was assessed as very high. Subsequent duodenal biopsy confirmed the diagnosis by demonstrating typical villous atrophy, inflammatory cell infiltration, and crypt hyperplasia. Other incidental findings included positive IgE for kiwi and pineapple. These findings were consistent with the patient's history of oral-pharyngeal symptoms upon exposure and were assessed as possible early developing latex sensitization, although there were no risk factors for latex sensitization and no symptoms associated with latex exposure. Following diagnosis, the patient was placed on a strict wheat-free diet. She was also advised to avoid fruits known to cross-react with

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latex and avoid latex products in general. At her six-month follow-up visit, the lower genital tract symptoms had completely resolved. Serum tissue transglutaminase IgA and IgG declined to negative values. A mild production of serum wheat-specific IgE and IgG, which had been detected on presentation, was also suppressed on wheat-free diet. Repeat duodenal biopsy also normalized following the wheat-free diet.

Discussion

We report celiac disease presenting with recurrent vulvo-vaginal Candidiasis with discharge, itching, pain, and dyspareunia and absence of clinical evidence of chronic malabsorption. While not initially recognized, it is likely that the vulvar manifestations described represented dermatitis herpetiformis altered by mechanical changes from scratching. Development of fissures was the cardinal finding which led to serum testing for celiac disease in this case. Skin lesions healed without any folate or iron supplementation as a result of a wheat-free diet. This case emphasizes the pleiotropic manifestations of celiac disease which may be overlooked and lead to diagnostic delay. Specifically, symptoms contributing to chronic vulvo-vaginitis are often attributed to recurrent yeast infections rather than investigated for the underlying etiology. Celiac disease is characterized by malabsorption with associated gastrointestinal symptoms. However, cutaneous findings may include dermatitis herpetiformis or subtle mucocutaneous manifestations with or without gastrointestinal symptoms[2]. Dermatitis herpetiformis is an uncommon disorder that most frequently occurs in the fourth or fifth decade of life and classically presents as a non-specific intensely pruritic skin eruption; commonly associated with excoriations (secondary to scratching)[3,4]. Lesions are most commonly reported on the elbows, dorsal forearms, knees, scalp, back and buttocks, and typically spare the face and groin[4]. A high index of suspicion with careful evaluation may be necessary for diagnosis, especially when the primary lesion is obscured by excoriations from scratching. Laboratory studies[5] including tissue pathology, direct immunofluorescence, and serology may be useful for the diagnosis.

Seasonal allergic rhinitis is present in some patients with chronic vulvo-vaginitis, and when treated can modify inflammatory responses at vaginal mucosal level as well as in the afferent conduction of pain and/or itching[1,6]. The clinical course of the patient's atopy, characterized by appearance and gradual worsening of allergic symptoms late in life, may be directly related to the mild character of her underlying celiac disease pathology. Celiac disease often co-exists with allergies, including wheat allergy, as is also evidenced by positive serological findings in this case. The development of unusually severe seasonal exacerbations of urticaria with progressive worsening was an indicator of an underlying specific immune disorder, which in this case turned out to be celiac disease.

This report shows that allergic responses to airborne or food allergens compounding the course of chronic vulvo-vaginal disease may themselves be part of a broader immune aberration. A possible explanation for the patient's combination of progressing chronic urticaria, allergic rhinitis, and vulvo-vaginitis may be the loss of T-cell regulatory function as a long-term sequela of advancing celiac disease since celiac disease is known to induce a status of impaired immunity and is a recognized cause of functional hyposplenism[7]. In her case, onset of severe urticaria, seasonal allergic rhinitis, and chronic vulvo-vaginitis in the fifth decade of life may be due to the mild phenotype of celiac disease with delayed loss of regulatory activity. Preservation of T-cell regulation is presumed to have kept seasonal allergies and mucosal vaginal inflammation under control for years until a critical point of immune regulatory impairment was eventually reached.

Conclusions

Celiac disease may present with non-classic signs of latent systemic manifestations rather than gastrointestinal symptoms, and its diagnosis requires a high index of suspicion for optimal treatment.

Conflict of Interest

The Authors declare that they have no conflict of interests.

Disclosures

No funding was received for this study. All procedures performed were in accordance with the ethical standards of the University of Wisconsin Research Review Committee and with the 1964 Helsinki Declaration, and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

References

1) Theodoropoulos DS, Stockdale CK, Duquette DR, Morris MS. Inhalant allergy compounding the chronic vaginitis syndrome: characterization of sensitization patterns, comorbidities and responses to sublingual immunotherapy. Arch Gynecol Obstet 2016; 294: 541-548.
2) Lynde CB, Bruce AJ, Murray JA, Rogers RS 3rd. Celiac disease. J Cutan Med Surg 2009; 13: 53-54.
3) Salmi TT, Hervonen K, Kautiainen H, Collin P, Reunala T. Prevalence and incidence of dermatitis herpetiformis: a 40-year prospective study from Finland. Br J Dermatol 2011; 165: 354-359.
4) Bolotin D, Petronic-Rosic V. Dermatitis herpetiformis, Part 1. Epidemiology, pathogenesis, and clinical presentation. J Am Acad Dermatol 2011; 64: 1017-1024.
5) Rose C, Armbruster FP, Ruppert J, Igl BW, Zillikens D, Shimanovich I. Autoantibodies against epidermal transglutaminase are a sensitive diagnostic marker in patients with dermatitis herpetiformis on a normal or gluten-free diet. J Am Acad Dermatol 2009; 61: 39-43.
6) Theodoropoulos DS, Michalopoulou AP, Cullen NA, Stockdale CK. Neuromodulation in allergic chronic vaginitis. Reprod Syst Sex Disord 2016; 5: 1-7
7) Chesney PJ. Asplenia. In CC Patrick (ed.), Clinical manifestations of infections in immunocompromised infants and children. Philadelphia: Lippincott, Williams and Wilkins 2001; pp. 307-326.