Case Report

Helicobacter pylori associated with chronic urticaria

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Abstract

Chronic urticaria is one of the most frequent skin diseases in medical practice. Urticaria is defined as acute if the whealing persists for less than six weeks and as chronic if it persists for longer. Chronic urticaria that lasts for several years to decades significantly impairs the quality of life. There is evidence that *Helicobacter pylori* has a critical role in different extragastric diseases such as chronic urticaria. We present a case of chronic urticaria in an adult patient with *H. pylori* infection and disease regression after triple anti-*H. pylori* therapy. In contrast to the autoimmune mechanisms involved in chronic urticaria against which no specific treatment strategy has been developed, infections with *H. pylori* could be treated with triple therapy. It is suggested that laboratory tests for the detection of this pathogen should be performed in patients with chronic urticaria.

Key words: chronic urticaria; *Helicobacter pylori*; eradication therapy

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Introduction

Chronic urticaria is one of the most frequent skin diseases encountered in medical practice. Urticaria is defined as acute if the whealing persists for less than six weeks and as chronic if it persists for longer [1]. Chronic urticaria, which can last for several years to decades [2,3,4], can significantly impair the quality of life [5]. *Helicobacter pylori* has become a highly suspected etiological factor in chronic urticaria [2,6,7,8]. Treatment and eradication of *H. pylori* was reported to be associated with remission of chronic urticaria [6,7 8]. However, the association remains controversial and the pathogenic mechanisms have never been confirmed [9]. We present a case of chronic urticaria in an adult patient with *H. pylori* infection and chronic urticaria disease regression after triple therapy for *H. pylori* was instituted.

Case report

A 50-year-old woman had a history of seizures since the age of 20 and had been treated with carbamazepine 2400 mg three times daily since 1992. In 2005, she developed hypothyroidism and thyroid function was equilibrated by levothyroxine 200 µg and atorvastatine 20 mg once-daily. Anti-thyroglobulin and anti-thyroid peroxidase antibodies were not detected. Her family history was significant for hypothyroidism. In July 2007, she started to complain of pruritus accompanied with diffuse urticaria wheals. Cutaneous lesions presented every day. For over six months, she was successively treated with mequitazine 5 mg and dexamethasone 4 mg, cetirizine 10 mg and desloratidine 5 mg, then with fenoxidine 120 mg and hydroxyzine 25 mg. The patient had a mild remission of symptoms. Allergic history was negative. A full screening for urticaria was made but chest radiography, abdominal echography, immuno-allergic and routine serum tests (including total and specific IgE) were normal. Allergies to food and penicillin were also excluded. All drugs taken by the patient were discontinued without any remission of urticaria. Serologic tests for circulating immune complexes, C1 esterase inhibitors, anti-nuclear, anti-mitochondrial and anti-smooth muscle antibodies were negative. In January 2009, an ELISA Kit (Bio-Rad, Marnes-la-Coquette, France) was used to search for anti-*H. pylori* IgG antibodies and revealed a positive result of 16.6 AU (arbitrary units)/ml (normal levels ≤ 8 AU/ml). The sensitivity and specificity of the test was 85% and 80%, respectively [10]. Treatment for *H. pylori* infection was instituted using amoxicillin 1 g twice daily and clarithromycin 500 mg twice daily and omeprazole 20 mg twice daily, for two weeks despite the absence of gastric symptoms. Pruritus and urticaria wheals disappeared in three weeks after therapy was started. The patient continued her treatment with carbamazepine, atorvastatine and

levothyroxine (200 µg once daily) without any further episodes of urticaria. The patient was monitored for *H. pylori* eradication by serologic tests and skin examination, over a period of nearly 11 months post therapy. A negative ELISA result was obtained after seven months and there was no recurrence of urticaria during the follow-up period.

Discussion

This case suggests a causal relationship between the eradication of *H. pylori* and the disappearance of chronic urticaria. Time of onset of cutaneous symptoms seems to exclude an allergic reaction to levothyroxine, atorvastatine, or carbamazepine. This hypothesis is confirmed by the asymptomatic cutaneous response to these drugs when they were resumed.

Although an association between hypothyroidism with high autoantibodies titres and chronic urticaria has been reported [11], the anti-thyroglobulin and anti-thyroid peroxidase antibody results were negative in our case.

Multiple publications have advocated a role for *H. pylori* infection in causing a variety of extraintestinal manifestations [12, 13,14]. Increasing evidence supports *H. pylori* infection as a cause of sideropenic (refractory iron deficiency) anemia [15,16,17] and immune thrombocytopenic purpura [18]. Lastly, several case reports have documented associations between *H. pylori* infection and rosacea, aphthous stomatitis, atopic dermatitis, Schoenlein-Henoch purpura and Sjögren syndrome [18,19,20,21,22,23]. It has been reported that the remission/improvement rate of patients with chronic urticaria who had been successfully treated for *H. pylori* infection nearly doubled compared to the untreated *H. pylori* -positive or *H. pylori*-negative controls ($p < 0.001$) [2].

The mechanism whereby *H. pylori* infection causes dermatologic disease is unknown. Although it has been recently suggested that chronic *H. pylori* infection may increase gastric permeability, predisposing infected children to the development of food allergies [24], others have demonstrated that infection had no effect on specific IgE antibodies to major food allergens in children [25].

An autoimmune mechanism has been hypothesized in which molecular mimicry between *H. pylori* lipopolysaccharide (LPS) and Lewis blood group antigens can occur in autoimmune type-B gastritis [26,27]. In this regard, positive autologous serum skin tests have been associated with *H. pylori* infection in chronic urticaria [28]. Interestingly, in some but not all patients with chronic urticaria, autologous serum skin tests became negative after *H. pylori* eradication [2].

On the other hand, the severity and exacerbation of urticarial symptoms might depend on the density of *H. pylori* infection and the intensity of inflammatory infiltration in the gastric biopsy and bacterial eradication may lead to symptom improvement, even though it may not be directly involved in its etiology [29].

Until the exact mechanism of chronic urticaria has been definitively determined, it is recommended that patients with symptoms of this skin disease who are also infected with *H. pylori* could be treated with traditional triple therapy. Therefore, the diagnostic workup for patients with chronic urticaria should include tests for the presence of *H. pylori*.

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