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Recurrent Urticaria in Diabetes Type 1: Don't Forget the Autoimmune Nature

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Abstract

A 32-years-old man initially presented with inaugural diabetes. He had no medical history. He developed urticaria shortly afterdiagnosis of type 1 diabetes (T1D). Investigations eliminated any atopic cause of the urticaria and confirmed the autoimmune aspect of this last. The patient presented recurrent flare under antihistamines treatment. The regulation of glycaemia blood levels lead to evanescence of urticaria.

This case improvesthe association between different autoimmune disorders specifically T1D and autoimmune urticaria witch is rarely reported without autoimmune thyroiditis.

To be practical, genetic susceptibility for autoimmunity highlights the importance of regular screening for most common autoimmune disorders in patients in whom one disorder is already present in order to ensure adequate care.

Keywords: *Type 1 diabetes, Autoimmuneurticaria, autoimmunity.*

Introduction

Autoimmune urticaria (AU) is known as arare disease which can be associated with other autoimmune disorders. Most commonly reported are autoimmune thyroiditis (Hashimoto thyroiditis and Grave's disease [1-3]. However, other organ-specific or systemic autoimmune diseases could be more rarely associated with AU such as rheumatoid arthritis, celiacdisease, systemic lupus erythematosus, Addison's disease, type 1 diabetes mellitus(T1D), and Sjögren syndrome[3-5].

Apart from classical autoimmune polyglandular syndromes (APS), the association of a T1D with AU remains exceptional and only a few sporadic cases have been reported in the global medical literature [6]. This association is more frequent in women, and represents a real diagnostic and therapeutic challenge for clinicians [2, 7].

We report an original observation of AU associated with T1D in adult male without any other organ-specific or systemic autoimmune disease.

Case Report

A 32-years-old man was referred to internal medicine department for management of his type 1 diabetes. He had no medical or allergy history and no toxic habits or any long-term drug intake. He belongs to a family with a history of diabetes type 2. DT1 was discovered initially with cardinal symptoms and ketosis. Treated with insulin and hydration protocol succeeded by insulin intensive protocol. The glycemic equilibrium was reached after nearly one month. Then, recurrent, evanescent, pruriginous and erythematous wheal-like lesions were noticed by the patient (**Fig.1,2,3, and 4**). He was reviewed by the dermatologist at our request and diagnosis of urticaria was carried. Antihistamines did not alleviate his symptoms, and multiple other flare-ups was reported and documented with photos by the patient.

On physical examination, he had a preserved general state. Vital signs were stable. Cardio-vascular, pulmonary and abdominal examinations were normal. His thyroid gland was not palpable, and he had neitheradenopathy.

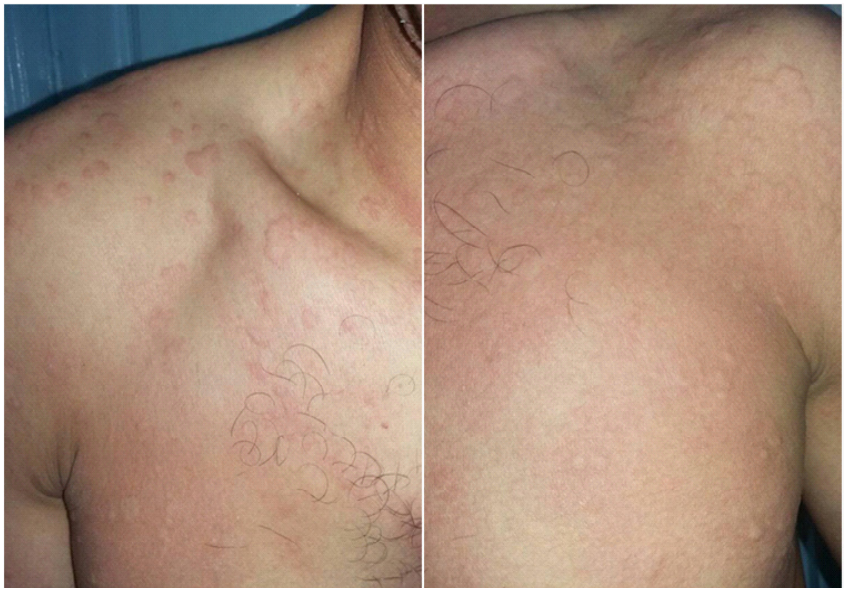

Figure 1. *Diffuse lesions of urticaria on the chest.*

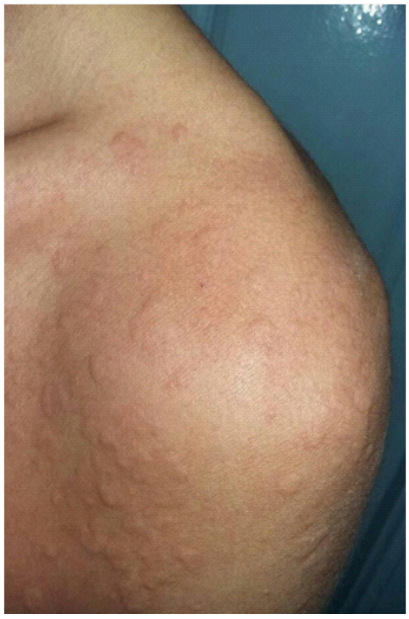

Figure 2. *Diffuse lesions of urticaria on the left shoulder.*

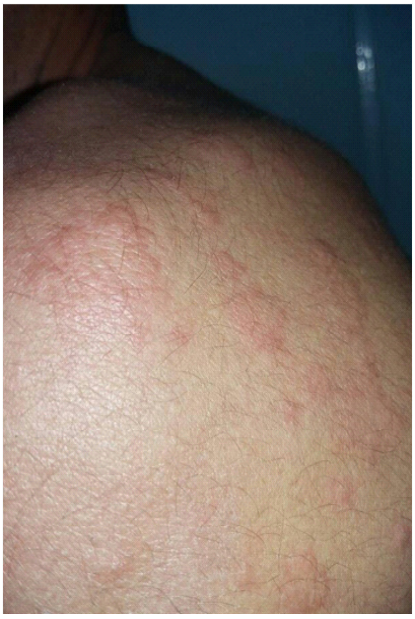

Figure 3. *Lesions of urticaria on the back.*

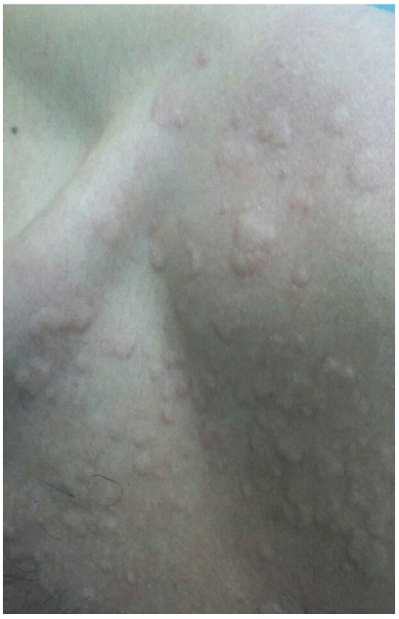

Figure 4. *Lesions of urticaria in the supra- and sub-clavicular regions (second recurrence).*

Biological investigations showedvery poorly balanced diabetes with fast glucose at 18.89 mmol/l and HbA1c at 13.5 %. Total blood count, creatinine, transaminases, ionogram, serum calcium, thyroid hormones, cortisol, and inflammatory biological markers were entirely negative.

Immunological investigation revealed positive anti glutamic acid decarboxylase (GAD) and islet tyrosine phosphatase 2 (IA2) antiantibodies with respective rates at 62 and 18 IU/ml confirming T1D.

Therate of immunoglobulin E wasnormal as well asprick tests. An anatomopathological skin sample study revealed a morphological aspect consistent with urticaria. Given the persistence of the hives, autologous serum skin test was practiced and proved positive, thereby confirming the autoimmune aspect of the disease.

So we proceeded to a symptomatic treatment for the urticaria with levocetirizine 5 mg per day and an intensification of his insulin therapy to obtain optimal

blood glucose levels. The subsequent evolution was favorable with the equilibration of the glycemic parameters.

Specific investigations did not reveal other associated autoimmune diseases: antinuclear antibodies, native anti-DNA antibodies, anti-thyroglobulin antibodies, anti-TPO antibodies, anti-TSH receptor antibodies, markers of autoimmune hepatitis, and hormonal assays were all without anomalies.

Discussion

The association T1D and AU remains rare and unusual; indeed only two cases were noted in the pediatric series of Netchiprouk E et al, of 139 patients with chronic urticaria (1.4%) [8], and only 165 cases were noted in the large population study of Confino-Cohen R and et al, of 12,778 adults with AU (1.28%) [4]. This association seems to be significantly more frequent in women than in men: 0.82% versus 0.46% [4].

This association is most often integrated in the context of autoimmune polyglandular syndromes (APS) [1-3,9,10] to the point that for some authors the AU could be considered as a "non-endocrine manifestation" of these syndromes [10].

This association remains exceptional and unusual outside APS [6]. It was reported in both adults and children [6]. Despite its rarity, this association deserves to be known by clinicians because it is statistically significant and can represent a real challenge both diagnostic and therapeutic.

Indeed, the risk of developing T1D is increased in patients with AU compared to the general population [5,11]. The odds ratio to develop D1T in AU patients is estimated at 7.703, and is more marked in women than in men: 12.92 versus 2.34 [4].

Genetic susceptibility is among these two autoimmune diseases [2,12-15] and predisposing association with HLA-DR4 has been reported for both AU [2,16] and T1D [2].

Thus, screening for anti-GAD antibodies is recommended by some authors in cases of persistent or treatment-resistant urticaria [6].

On the other hand, induction or flare-up of pre-existing urticaria can be an exceptional side effect of any blood glucose-lowering therapy including insulin [7].

Treatment of recurrent and resistant forms of AU may require the use of glucocorticoids, immuno suppressants, and even biotherapy [11].

Conclusion

As rare as it is, this association deserves to be well known by health practitioners. Screening for underlying T1D seems to be useful in case of recurrent and/or poorly controlled by standard treatments urticaria. Similarly, the autoimmune character of an urticaria occurring in a patient followed for T1D must be evoked and verified because it may require a therapeutic management completely different from that of non-autoimmune urticaria. Our observation is characterized by the isolated association T1D and AU (without APS), the male sex, and the good evolution of the cutaneous lesions with the insulinotherapy.

Conflicts of Interest

The authors state that they have no conflicts of interest.

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