Coexistence of Hidradenitis Suppurativa with Autoimmune Thyroiditis: Report of Three Cases

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Introduction

Hidradenitis suppurativa (HS) or acne inversa is a chronic, recurrent skin disease causing inflammation, suppuration and scarring in the apocrine-gland-bearing areas of the body, usually the axillary, inguinal and anogenital regions [1]. The estimated prevalence rates of this condition range from 0.05 to 4% [2, 3]. The exact aetio-pathogenesis of HS is still poorly understood, although the current level of knowledge suggests that follicular occlusion of the pilosebaceous unit by infundibular hyperkeratosis is the primary event [1, 4]. Several factors such as smoking, obesity and hormonal imbalance may contribute to these histopathological changes. Recent clinical and experimental studies have demonstrated an important implication of the immune system in the pathogenesis of HS [4, 5], including involvement of the interleukin 12 (IL-12)/Th1 and the IL-23/Th17 pathways [6], elevated tumour necrosis factor α (TNF-α) levels in the skin and serum [7], and a deficiency of IL-22 and IL-20 in lesional HS skin [8].

HS has been associated with a number of diseases, including endocrine disorders, such as diabetes, acromegaly and Cush- ing’s disease [9]. Autoimmune thyroiditis (AT), also called Hashimoto’s thyroiditis, represents the most common organ-specific autoimmune disorder, and it is the most common cause of hypothyroidism [10]. Coexistence of AT with skin diseases has been described [10]. However, to the best of our knowledge, the co-occurrence of AT and HS has not previously been described in the English literature. Herein we report 3 patients with AT coexisting with HS.

Case Reports

Case 1

A 43-year-old male smoker was sent to our outpatient clinic because of a medical history of HS. At the age of 28, he began to experience recurrent abscesses, nodules and fistulas bilaterally in the axillae, inguinal and perianal regions. The disease had a protracted course. He had been unsuccessfully treated with multiple topical and sys-
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Dermatology 2016;232:162–164
DOI: 10.1159/000439562

Since AT is the prototype of autoimmune disease, the occurrence of HS and AT may support the claim of a dysregulation of the immune system function as the underlying mechanism in HS. Shared precipitating factors may have contributed to the coexistence of these two diseases in our patients. With respect to this, it is worth noting that our 3 patients were smokers, and a smoking history is known to be a risk factor for the development of HS [20]. However, current evidence suggests that smoking may have a protective effect against Hashimoto’s thyroiditis [14].

In conclusion, although further studies are needed to determine whether the coexistence of HS and AT is the result of some shared autoimmune mechanisms, based on our findings, we feel that the assessment of thyroid function and antithyroid antibodies should be considered in patients with HS.

Statement of Ethics

The authors have no ethical conflicts to disclose.

Disclosure Statement

The authors declare no conflict of interest and no financial interest.

Case 2

A 49-year-old female smoker presented to the hospital with a 3-year history of recurrent nodules, abscesses and some sinus tract in the axillary and the anogenital regions. She was clinically diagnosed with moderate HS (Sartorius score of 55; fig. 2). Treatment with topical and systemic antibiotics yielded an improvement of the cutaneous manifestations. One year before consultation she had also been diagnosed with AT by means of suggestive symptoms of hypothyroidism, elevated TSH (15.45 UI/ml) and raised anti-thyroid-peroxidase antibodies (659 UI/ml). She had been under synthetic thyroid hormone levothyroxine therapy since then. At the time of diagnosis of HS, free thyroxine and free tri-iodothyronine were within normal limits.

Case 3

A 38-year-old female smoker presented with a 6-year history of multiple nodules, abscesses and some fistulas involving the axillary and inguinal regions. A clinical diagnosis of moderate HS (Sartorius score of 42) was made. She had been treated with several cycles of topical and systemic antibiotics and surgery with variable clinical response. At the age of 36, the patient had also been diagnosed with AT on the basis of elevated TSH (8.19 UI/ml) and raised anti-thyroid-peroxidase antibodies (802 UI/ml); free thyroxine and free tri-iodothyronine were within normal limits at that time. She was under treatment with the synthetic thyroid hormone levothyroxine when she was assessed at the dermatology outpatient clinic.

Discussion

In a retrospective study recently reported by Shlyankevich et al. [12], ‘thyroid disorders’ were detected in 22% of patients with HS. However, no information on the type of thyroid disorder was specified in that study. Herein we report the first 3 well-documented cases of HS coexisting with AT.

The underlying mechanisms that could link HS with AT are unknown. In this regard, we cannot exclude that this coexistence might have occurred by chance. Since HS and AT are both frequent diseases, this association could be the result of co-occurrence of two common diseases, especially in the presence of a condition like HS that may lead to a more exhaustive study of the patient, including the search for an underlying autoimmune disease. Nevertheless, HS and AT share several similarities; namely: (i) both conditions occur predominantly in women – women outnumber men in both conditions, the women-to-men ratio is 3:1 in HS [13], and it ranges between 5:1 and 10:1 in AT [14]; (ii) an interaction between environmental and genetic factors is thought to play a role in the development of both diseases; (iii) the IL-23/Th17 pathway has been implicated in the pathogenesis of both HS and AT [6, 15]. Interestingly, this cytokine pathway was found to be associated with Crohn’s disease, a condition associated with HS [16–19].

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A clinical diagnosis of severe HS (Sartorius score of 95 [11]) was made in our department (fig. 1). Treatment with the anti-TNF-α monoclonal antibody adalimumab yielded a dramatic improvement. Two years before, at the age of 41, he had been diagnosed of having hypothyroidism and AT. The diagnosis was established because of hypothyroidism symptoms, clinically increased thyroid size, markedly elevated thyroid-stimulating hormone (TSH) of 34.59 mU/l (range 0.35–5.5) and raised anti-thyroid-peroxidase antibodies (659 UI/ml). She had been under synthetic thyroid hormone levothyroxine when she was admitted to the hospital with a 3-year history of recurrent nodules, abscesses and some sinus tract in the axillary and anogenital regions. She was clinically diagnosed with moderate HS (Sartorius score of 95, fig. 1). Treatment with the anti-TNF-α monoclonal antibody adalimumab yielded a dramatic improvement. Since AT is the prototype of autoimmune disease, the occurrence of HS and AT may support the claim of a dysregulation of the immune system function as the underlying mechanism in HS. Shared precipitating factors may have contributed to the coexistence of these two diseases in our patients. With respect to this, it is worth noting that our 3 patients were smokers, and a smoking history is known to be a risk factor for the development of HS [20]. However, current evidence suggests that smoking may have a protective effect against Hashimoto’s thyroiditis [14].

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