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Case Series

Cutaneous Manifestations Associated with Autoimmune Thyroiditis in Males: A Case Series of Five Uncommon Presentations

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ABSTRACT

Background: Autoimmune thyroiditis is a common organ-specific autoimmune disorder with a well-recognized female predominance. Cutaneous manifestations may occasionally provide an early clue to underlying thyroid autoimmunity. Although several dermatoses have been associated with autoimmune thyroid disease, their occurrence in male patients is relatively uncommon and may be under-recognized.
Case series: We report a series of five male patients with autoimmune thyroiditis presenting with distinct cutaneous manifestations. The clinical spectrum included lichen planus pigmentosus in a 32-year-old man, bilateral pretibial myxedema in a 48-year-old man, genital lichen sclerosus et atrophicus in a 45-year-old man, alopecia areata in a six-year-old boy, and chronic spontaneous urticaria in a 52-year-old man. Thyroid dysfunction was detected biochemically in all cases. Autoimmune thyroid disease was supported by raised thyroid-stimulating hormone levels and thyroid autoantibody positivity where available. Notably, some patients had minimal or no systemic symptoms of thyroid dysfunction, with dermatological findings being the major presenting complaint.
Conclusion: This case series highlights the diverse cutaneous spectrum of autoimmune thyroiditis in males. Pretibial myxedema, alopecia areata, and chronic urticaria are recognized associations of autoimmune thyroid disease, whereas lichen sclerosus et atrophicus is less commonly reported and lichen planus pigmentosus appears to be a particularly unusual association. Screening for thyroid dysfunction and thyroid autoantibodies should be considered in selected patients with chronic, autoimmune, or treatment-resistant dermatoses, even in the absence of classical thyroid symptoms.

Keywords*: Autoimmune thyroiditis; male; cutaneous manifestations; lichen planus pigmentosus; pretibial myxedema; lichen sclerosus et atrophicus; alopecia areata; chronic urticaria.*

INTRODUCTION

Autoimmune thyroiditis, most commonly represented by Hashimoto thyroiditis, is among the most frequent organ-specific autoimmune disorders.It is defined by immune-mediated thyroid damage, the presence of thyroid autoantibodies (especially anti-thyroid peroxidase and anti-thyroglobulin antibodies) and thyroid dysfunction, which may range from subclinical disease to overt hypothyroidism. It is highly prevalent in women, with a female to male ratio of 10:1.[1]

The skin is a key target organ for thyroid disease, and cutaneous symptoms may be the presenting or dominant feature of thyroid disease. Hypothyroidism can present with xerosis, coarse skin, hair changes and myxedematous changes, and autoimmune thyroid disease has been reported in association with a number of immune-mediated dermatoses. Cutaneous manifestations include alopecia areata, chronic urticaria, vitiligo and thyroid dermopathy, including pretibial myxedema.[2]

A number of the dermatoses reported in the current series have been reported in association with thyroid autoimmunity. Alopecia areata and chronic spontaneous urticaria are well-recognized autoimmune-associated dermatoses in which thyroid dysfunction or thyroid autoantibodies may be found in a proportion of patients.[2] Pretibial myxedema (thyroid dermopathy) is classically associated with autoimmune thyroid disease, especially Graves' disease, but may also be seen in more general autoimmune thyroid disease settings.[2] Lichen sclerosus has also been reported in autoimmune conditions, including autoimmune thyroid disease, although the male presentation is less commonly highlighted than the female presentation.[3,4]

Lichen planus pigmentosus is an acquired pigmentary condition that is a variant of lichen planus. The link between thyroid dysfunction and lichen planus pigmentosus has been investigated in a few studies, which report a higher incidence of thyroid dysfunction or thyroid autoantibodies in patients with lichen planus pigmentosus. But this link is not fully understood, and its presentation as a cutaneous sign of autoimmune thyroiditis, especially in a male patient, is rare.[5]

While autoimmune thyroiditis is prevalent, a series of cases in which all patients are male and present with a variety of skin conditions is unusual. In our series, five men presented with a variety of skin diseases: lichen planus pigmentosus, bilateral pretibial myxedema, genital lichen sclerosus et atrophicus, alopecia areata, and chronic urticaria. In some cases, the dermatological symptoms were the primary reason for consultation, while thyroid dysfunction symptoms were absent, mild, or initially unnoticed.

The aim of this case series is to raise awareness of the wide range of rare dermatological manifestations of autoimmune thyroiditis in males. We highlight the importance of thyroid screening in certain patients with chronic, autoimmune, atypical or resistant dermatoses, despite the absence of typical thyroid symptoms, through these five cases.

Case 1: Lichen planus pigmentosus

A 32-year-old man reported to the dermatology outpatient clinic with six months of asymptomatic hyperpigmented macules on the trunk and abdomen. No history of previous erythema, scaling, photosensitivity, or drug use, or other lesions. He denied feeling tired, gaining weight, coldness, constipation, voice hoarseness, or any other symptoms that might indicate thyroid dysfunction.

Cutaneous examination showed several hyperpigmented macules scattered on the trunk and abdomen. No scaling, induration, atrophy, or mucosal involvement was present. A diagnosis of lichen planus pigmentosus was considered based on the clinical morphology.

One of the representative pigmented lesions was biopsied on the skin. The histopathological analysis revealed focal epidermal atrophy. The dermis was melanin incontinent with a low density of perivascular lymphocytic infiltrate. These results were in line with lichen planus pigmentosus.

As part of the systemic evaluation, thyroid function testing was performed. The patient's thyroid profile revealed reduced T3 level of 0.67, reduced T4 level of 2.32, markedly elevated thyroid-stimulating hormone level of more than 100, suggestive of severe primary hypothyroidism and elevated anti-thyroid peroxidase antibody levels of 215.8 IU/mL Although the patient had no overt clinical symptoms of thyroid dysfunction, the biochemical findings were significant and were suggestive of underlying autoimmune thyroiditis in the clinical context of this case series.

The patient was counselled regarding the chronic nature of lichen planus pigmentosus, photoprotection, and avoidance of friction. Topical anti-inflammatory therapy was advised for active lesions. In view of the markedly elevated thyroid-stimulating hormone level, he was referred to the endocrinology department for further evaluation and initiation of thyroid hormone replacement therapy.

The final diagnosis was **lichen planus pigmentosus associated with autoimmune thyroiditis presenting as severe biochemical hypothyroidism in an otherwise asymptomatic male patient** (Figure 1).

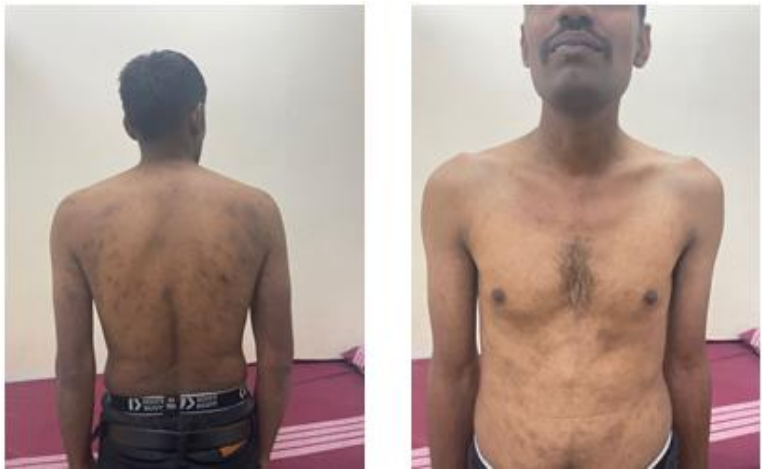

Figure 1: Clinical image of lichen planus pigmentosus showing hyperpigmented macules over the trunk and abdomen.

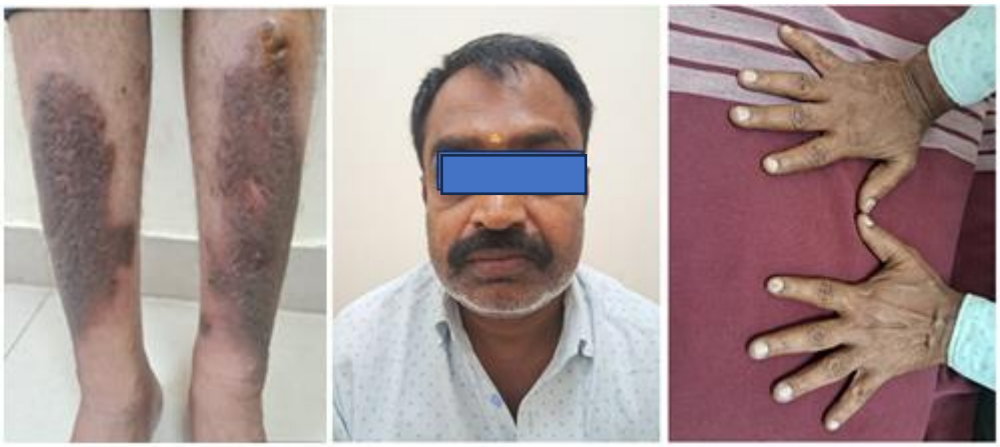

Figure 2: Bilateral pretibial myxedema showing hyperpigmented, waxy, indurated plaques with peau d'orange appearance over both pretibial areas.

Figure 3: Genital lichen sclerosus et atrophicus showing a well-demarcated ivory-white atrophic plaque over the glans penis.

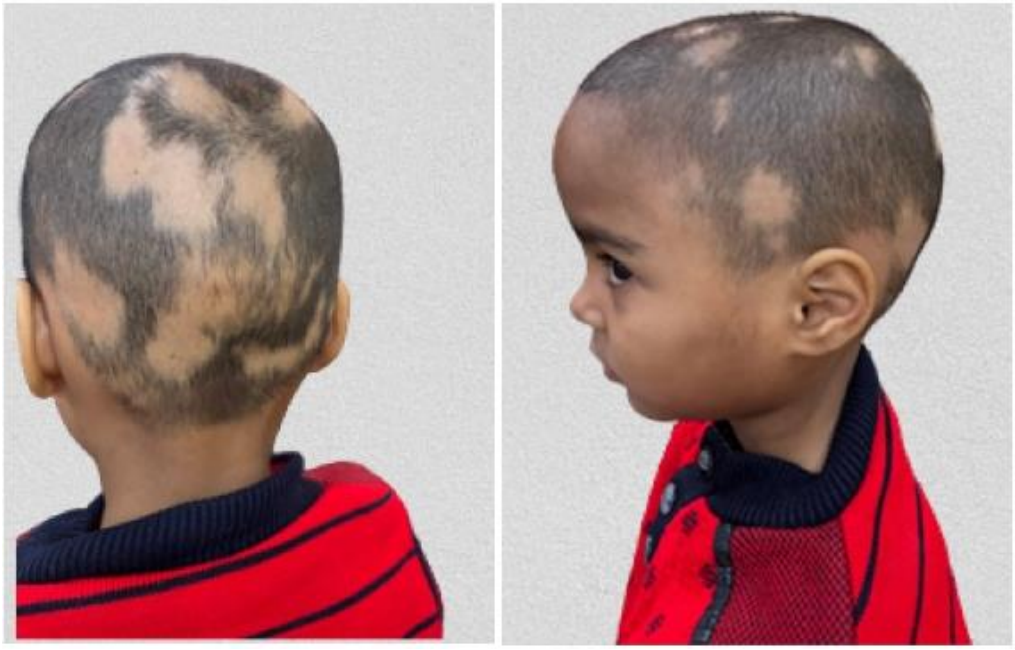

Figure 4: Alopecia areata showing well-defined, smooth, non-scarring alopecic patches over the scalp

Case 2: Bilateral pretibial myxedema

A 48-year-old man came to the dermatology outpatient department with a history of eight months of asymptomatic plaques on both pretibial regions. The lesions were not painful, discharging, or ulcerated and had developed over time without any history of trauma. He denied fatigue, heat intolerance, hand tremors, constipation, unexplained weight gain, voice change, or other symptoms indicative of thyroid dysfunction. He was neither a known diabetic nor hypertensive. No smoking or alcohol history, and his family history was normal.

Bilateral hyperpigmented to erythematous, waxy, indurated plaques with peau d'orange appearance present over the lower two-thirds of both legs on dermatological examination. No clinical evidence of active infection, ulceration, or venous insufficiency. General examination did not show clinical signs of hypothyroidism or hyperthyroidism. No apparent neck swelling.

Based on the characteristic morphology and distribution of the lesions, a clinical diagnosis of bilateral pretibial myxedema was considered. Thyroid evaluation was performed to assess for underlying thyroid disease. His thyroid profile showed total T4 of 4.7 mcg/dL, which was below the reference range of 5.9–13.29 mcg/dL; total T3 of 0.89 nmol/L; and elevated thyroid-stimulating hormone of 21.914 µU/mL, above the reference range of 0.27–4.2 µU/mL. Thyroid autoantibody testing revealed markedly elevated anti-thyroid peroxidase antibody levels of more than 1000 IU/mL and elevated TSH receptor antibody levels of more than 40 IU, supporting an autoimmune thyroid disorder.

The patient was managed with potent topical corticosteroid therapy under occlusion, limb elevation, and compression support. He was referred to endocrinology for further evaluation and optimization of thyroid status. Thyroid hormone replacement was advised as clinically indicated in view of biochemical hypothyroidism.

The final diagnosis **was bilateral pretibial myxedema associated with autoimmune thyroid disease presenting in a male patient with biochemical hypothyroidism and markedly positive thyroid autoantibodies**(figure2).

Case 3: Lichen sclerosus et atrophicus

A 45-year-old man reported to the outpatient dermatology with eight months of persistent, pruritic white patches on the genital area. The lesions were slowly progressive and were accompanied by occasional itching. During the same time he also complained of mild fatigue and cold intolerance. No history of genital ulcer, discharge, trauma, high-risk sexual exposure, or lesions in other areas.

The patient has dry and brittle hair on general examination. On palpation of thyroid gland diffuse, grade 1, non-tender goitre. Dermatological examination revealed a well-demarcated, ivory-white, atrophic plaque on the glans penis. At the time of examination, there was no active ulceration or secondary infection.

A punch biopsy was done on the genital plaque. Histopathological analysis revealed hyperkeratosis, follicular plugging, and Malpighian atrophy. There was a significant area of subepidermal edema and collagen hyalinization in the upper

dermis and a band-like lymphocytic infiltrate in the mid-dermis. These histopathological changes were in line with lichen sclerosus et atrophicus.

Thyroid examination was conducted in consideration of the fatigue, cold intolerance, goitre, and autoimmune clinical history. A thyroid function test showed increased thyroid-stimulating hormone levels. The thyroid autoantibody test was positive to anti-thyroid peroxidase and anti-thyroglobulin antibodies, which confirms the diagnosis of autoimmune thyroiditis. Precise values of thyroid hormones and antibody titres were not available.

The patient was prescribed potent topical corticosteroid to treat genital lichen sclerosus et atrophicus and was educated about genital hygiene and prevention of local trauma. He was recommended frequent follow-up to check on the control of symptoms, scarring, involvement of the meatal, and malignant change. Considering the autoimmune hypothyroidism, he was sent to the endocrinology department to undergo additional examination and start thyroid hormone replacement therapy as per clinical indications.

The final diagnosis was **genital lichen sclerosus et atrophicus associated with autoimmune thyroiditis in a male patient with clinical and biochemical features of hypothyroidism**(figure3).

Case 4: Alopecia areata

A six-year-old boy was brought to the dermatology outpatient department with well-defined patches of hair loss over the scalp for four months. The alopecic patches were gradually progressive and were not associated with itching, scaling, pain, discharge, or preceding trauma. There was no history suggestive of hair pulling. The child was otherwise asymptomatic; however, the mother reported that he had appeared slightly more tired than usual during school activities. There was no family history of autoimmune disease.

On dermatological examination, multiple well-defined, smooth, round, non-scarring patches of alopecia were present over the scalp. There was no erythema, scaling, follicular pustulation, scarring, or broken hair suggestive of tinea capitis or traumatic alopecia. Hair pull test was positive at the margins of the lesions, indicating active disease.

Based on the clinical morphology and positive hair pull test, a diagnosis of alopecia areata was made. Routine laboratory evaluation showed normal complete blood count and normal vitamin D levels. Thyroid evaluation revealed raised thyroid-stimulating hormone levels. Anti-thyroid peroxidase and anti-thyroglobulin antibodies were positive, supporting a diagnosis of autoimmune thyroiditis. Exact thyroid hormone values and antibody titres were not available.

The child was started on oral mini pulse therapy for patchy alopecia areata and was advised regular follow-up to assess disease activity, regrowth, and progression. In view of tiredness, raised thyroid-stimulating hormone, and positive thyroid autoantibodies, he was referred to paediatric endocrinology for further evaluation and management of autoimmune thyroiditis.

The final diagnosis was **alopecia areata associated with autoimmune thyroiditis in a six-year-old male child**.(figure4)

Case 5: Chronic urticaria

A 52-year-old male presented to the dermatology outpatient department with a nine-month history of recurrent, pruritic wheals over the trunk and extremities. The wheals were episodic, erythematous, and edematous, and typically resolved within 24 hours without residual pigmentation, scaling, bruising, or scarring. He also reported occasional episodes of angioedema. The persistent pruritus had significantly affected his sleep and daily activities.

There was no history of new medication intake, recent infection, unusual dietary exposure, or significant emotional stress preceding the onset of symptoms. He denied a personal or family history of atopy, allergies, or autoimmune disease. However, he gave a history of fatigue, weight gain, cold intolerance, and constipation, which he had initially attributed to aging.

On dermatological examination, multiple erythematous, edematous wheals of varying sizes were present over the trunk and extremities. There was no angioedema at the time of examination. There were no clinical features suggestive of urticarial vasculitis, such as painful lesions, persistence beyond 24 hours, residual purpura, or post-inflammatory pigmentation.

Initial laboratory evaluation for chronic urticaria included complete blood count with differential count, erythrocyte sedimentation rate, C-reactive protein, liver function tests, renal function tests, and urinalysis, all of which were within normal limits. In view of chronic spontaneous urticaria with associated systemic symptoms suggestive of hypothyroidism, thyroid evaluation was performed. Thyroid function testing revealed raised thyroid-stimulating hormone

levels. Anti-thyroid peroxidase and anti-thyroglobulin antibodies were positive, supporting a diagnosis of autoimmune thyroiditis. Exact thyroid hormone values and antibody titres were not available.

The patient was started on a second-generation H1 antihistamine and was counselled regarding regular use rather than only on-demand treatment. Dose escalation up to fourfold was advised if symptoms remained inadequately controlled. He was referred to the endocrinology department for further evaluation and management of autoimmune hypothyroidism. The final diagnosis was **chronic spontaneous urticaria associated with autoimmune thyroiditis in a male patient with symptoms of hypothyroidism**.

Clinical summary table:

Case	Age/ Sex	Cutaneous diagnosis	Duration	Key dermatological findings	Thyroid-related symptoms/ signs	Thyroid profile	Thyroid autoantibodies	Histopathology/other investigations	Management advised
1	32/Male	Lichen planus pigmentosus	6 months	Asymptomatic hyperpigmented macules over trunk and abdomen	No symptoms suggestive of thyroid dysfunction	T3: 0.67; T4: 2.32; TSH: >100	Anti-TPO 215.8IU/mL	Epidermal focal atrophy; dermal melanin incontinence; sparse perivascular lymphocytes, suggestive of lichen planus pigmentosus	Photoprotection, avoidance of friction, topical anti-inflammatory therapy; endocrinology referral for severe hypothyroidism
2	48/Male	Bilateral pretibial myxedema	8 months	Hyperpigmented, waxy, indurated plaques over erythematous base with peau d'orange appearance involving lower two-thirds of both legs	No clinical symptoms or signs of hypo-/hyperthyroidism; no neck swelling	Total T4: 4.7 mcg/dL; Total T3: 0.89 nmol/L; TSH: 21.914 µU/mL	Anti-TPO: >1000 IU/mL; TSH receptor antibody: >40 IU	Clinical diagnosis based on characteristic morphology and distribution	Potent topical corticosteroid under occlusion, limb elevation, compression support; endocrinology referral
3	45/Male	Lichen sclerosus et atrophicus	8 months	Well-demarcated ivory-white atrophic plaque involving glans penis	Mild fatigue, cold intolerance, dry skin, brittle hair; diffuse grade 1 non-tender goitre	TSH raised	Anti-TPO positive; anti-thyroglobulin positive; exact titres not available	Hyperkeratosis, follicular plugging, atrophy of Malpighian layer, subepidermal edema, hyalinized collagen in upper dermis, band-like lymphocytic infiltrate in mid-dermis	Ultrapotent topical corticosteroid; counselling regarding genital hygiene and follow-up for scarring/meatal involvement; endocrinology referral
4	6/Male	Alopecia areata	4 months	Multiple well-defined, smooth, round, non-scarring	Mild tiredness during school activities	TSH raised	Anti-TPO positive; anti-thyroglobulin positive;	CBC and vitamin D normal	Oral mini pulse therapy; monitoring for regrowth/progression; paediatric

				alopecic patches over scalp; positive hair pull test at margins			exact titres not available		endocrinology referral
5	52/Male	Chronic spontaneous urticaria	9 months	Recurrent pruritic wheals over trunk and extremities resolving within 24 hours; occasional angioedema; dermatographism present	Fatigue, weight gain, cold intolerance, constipation	TSH raised	Anti-TPO positive; anti-thyroglobulin positive; exact titres not available	CBC with differential, ESR, CRP, liver and renal function tests, and urinalysis within normal limits	Second-generation H1 antihistamine; dose escalation up to fourfold if required; endocrinology referral

Abbreviations:
T3: Triiodothyronine; T4: Thyroxine; TSH: Thyroid-stimulating hormone; Anti-TPO: Anti-thyroid peroxidase antibody; CBC: Complete blood count; ESR: Erythrocyte sedimentation rate; CRP: C-reactive protein.

DISCUSSION

Autoimmune thyroiditis is a frequent organ-specific autoimmune disease with thyroid autoantibody formation and varying degrees of thyroid dysfunction. While it is female predominant, significant autoimmune thyroid disease can occur in males, and may be overlooked in the absence of classic thyroid symptoms.[1] The current case series highlights five male patients with autoimmune thyroiditis presenting with a range of cutaneous manifestations: lichen planus pigmentosus, bilateral pretibial myxedema, genital lichen sclerosus et atrophicus, alopecia areata, and chronic spontaneous urticaria.

Skin is a major target organ for thyroid disease. Thyroid hormones regulate epidermal proliferation, dermal connective tissue metabolism, hair follicle cycling, eccrine sweat gland function, and vascular responsiveness. Furthermore, autoimmune thyroid disease may be associated with immune-mediated dermatoses due to common autoimmune mechanisms.[2] In our series, most patients presented with dermatological symptoms as the main complaint, in the absence of overt thyroid symptoms.

Lichen sclerosus et atrophicus is known to be associated with autoimmune conditions, including thyroid disease.[3,4] Our third patient, a 45-year-old man with genital lichen sclerosus, presented with clinical signs of hypothyroidism, goitre, elevated TSH and positive thyroid autoantibodies. This suggests the need for thyroid screening in certain male patients with lichen sclerosus, particularly in the presence of systemic symptoms.

Lichen planus pigmentosus was the most rare presentation. While there have been few studies on its association with thyroid disease, the link is not fully understood.[5] In our first case, biopsy-proven lichen planus pigmentosus was associated with severe biochemical hypothyroidism, despite the absence of overt thyroid symptoms. This may indicate that lichen planus pigmentosus is a rare cutaneous marker of thyroid dysfunction.

Alopecia areata and chronic spontaneous urticaria are more established associations of thyroid autoimmunity. Alopecia areata patients have been reported to have increased thyroid dysfunction and thyroid autoantibody positivity.[6] Chronic spontaneous urticaria is also associated with a higher frequency of thyroid autoantibodies, particularly anti-thyroid peroxidase antibodies.[7] The presence of raised TSH and positive thyroid autoantibodies in our paediatric alopecia areata case and chronic urticaria case supports thyroid screening in selected patients with persistent, recurrent, or autoimmune-pattern dermatoses.

Pretibial myxedema is typically seen in Graves' disease and is associated with TSH receptor antibodies, but has also been reported in euthyroid or hypothyroid autoimmune thyroid disease.[8] Our second patient had bilateral pretibial plaques, biochemical hypothyroidism, high anti-TPO antibodies, and strongly positive TSH receptor antibodies. This case

illustrates that thyroid dermopathy can occur in an autoimmune thyroid overlap syndrome, even in the absence of thyrotoxicosis.

This series expands the clinical manifestations of autoimmune thyroiditis in men. Pretibial myxedema, alopecia areata and chronic spontaneous urticaria are well known, whereas lichen sclerosus et atrophicus is less frequent and lichen planus pigmentosus is very rare. Our study has small sample size and descriptive nature, which prevents causality analysis. However, the presence of a range of autoimmune and inflammatory dermatoses in male patients with thyroid dysfunction or thyroid autoantibody positivity suggests the need for thyroid screening in certain chronic, recurrent, autoimmune, or atypical dermatoses.

LIMITATION

The present study is limited by its small sample size and descriptive case-series design, which precludes assessment of causality between autoimmune thyroiditis and the observed cutaneous manifestations. As the cases were identified in a dermatology-based clinical setting, the findings may not represent the full spectrum or frequency of thyroid-associated dermatoses in the general population. Nevertheless, the clustering of diverse autoimmune and inflammatory cutaneous disorders in male patients with biochemical or serological evidence of autoimmune thyroid disease highlights a clinically relevant association and supports the need for thyroid evaluation in selected dermatological presentations.

CONCLUSION

Autoimmune thyroiditis in males may present with diverse cutaneous manifestations, including both recognized associations such as pretibial myxedema, alopecia areata, and chronic spontaneous urticaria, and less common associations such as lichen sclerosus et atrophicus and lichen planus pigmentosus. This case series emphasizes that thyroid dysfunction should be considered in men presenting with chronic, recurrent, autoimmune, or atypical dermatoses, even when classical thyroid symptoms are absent. Early thyroid evaluation may facilitate timely endocrine referral and integrated patient care.

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