White Atrophic Plaques on the Thighs

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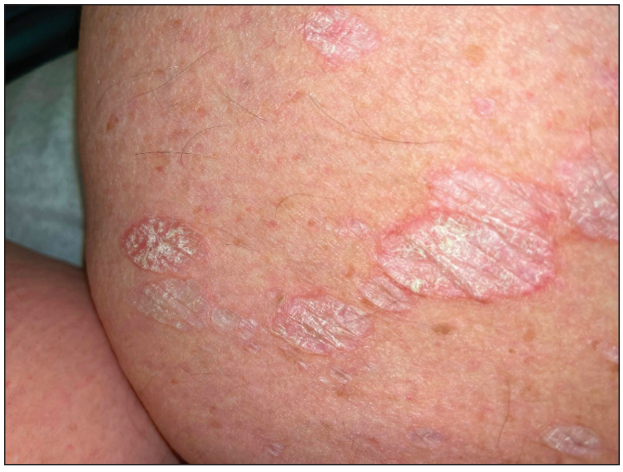

A 71-year-old woman presented to the dermatology clinic for evaluation of intense pruritus of the vaginal region and a nonpruritic rash on the inner thighs of 7 months' duration. Physical examination revealed white atrophic plaques with scaling and a wrinkled appearance on the inner thighs. White atrophic patches also were noted on the vulva. The patient reported that she had tried over-the-counter antifungals with no improvement. A punch biopsy was performed.

WHAT'S YOUR **DIAGNOSIS?**

a. atopic dermatitis
b. lichen sclerosus
c. lichen simplex chronicus
d. psoriasis
e. tinea corporis

PLEASE TURN TO PAGE E4 FOR THE DIAGNOSIS

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The authors have no relevant financial disclosures to report.
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Cutis. 2025 April;115(4):E3-E4. doi:10.12788/cutis.1202

THE **DIAGNOSIS:** Lichen Sclerosus

Given the clinical appearance of white atrophic plaques with characteristic wrinkling of the skin, a diagnosis of lichen sclerosus was strongly suspected. At the initial office visit, the patient was prescribed clobetasol 0.05% ointment twice daily for 6 weeks. Histopathology revealed hyperkeratosis, follicular plugging, papillary dermal pallor, and adjacent lymphocytic inflammation, confirming the clinical diagnosis of lichen sclerosus (Figure). The patient then was lost to follow-up.

Lichen sclerosus is a chronic benign dermatologic condition of unknown etiology that is characterized by epidermal atrophy and inflammation and is common in postmenopausal women. It features pale, ivory-colored lesions with partially atrophic skin and a wrinkled cigarette paper appearance.[1] The differential for lichen sclerosus is broad, and definitive diagnosis is made via biopsy to rule out potential malignancy and other inflammatory skin diseases.[1] Lichen sclerosus is an immune-mediated disorder driven by type 1 T helper cells and regulated by miR-155. There has been an association with extracellular matrix protein 1, a glycoprotein that is found in the dermal-epidermal basement membrane zone, which provides structural integrity to the skin. Autoantibodies against extracellular matrix protein 1 and other antigens in the basement membrane generally are found in anogenital lichen sclerosus; however, their precise roles in the pathogenesis of lichen sclerosus remains unclear.[1]

The differential diagnoses for lichen sclerosus include psoriasis, tinea corporis, lichen simplex chronicus, and atopic dermatitis. Psoriasis typically manifests as pink plaques with silver scales on the elbows, knees, and scalp in adult patients.[2] Our patient's white plaques may have suggested psoriasis, but the partially atrophic skin with a wrinkled cigarette paper appearance was not compatible with that diagnosis.

Tinea corporis, a superficial fungal infection of the skin, manifests as circular or ovoid lesions with raised erythematous scaly borders, often with central clearing resembling a ring, that can occur anywhere on the body other than the feet, groin, face, scalp, or beard area.[3] The fact that our patient previously had tried topical antifungal medications with no relief and that the skin lesions were atrophic rather than ring shaped made the diagnosis of tinea corporis unlikely.

Lichen simplex chronicus is a chronic condition caused by friction or scratching that is characterized by dry, patchy, scaly, and thickened areas of the skin. Typically affecting the head, arms, neck, scalp, and genital region, lichen simplex chronicus manifests with violaceous or hyperpigmented lesions.[4] The nonpruritic atrophic plaques on the inner thighs and the presence of white patches on the vaginal area were not indicative of lichen simplex chronicus in our patient.

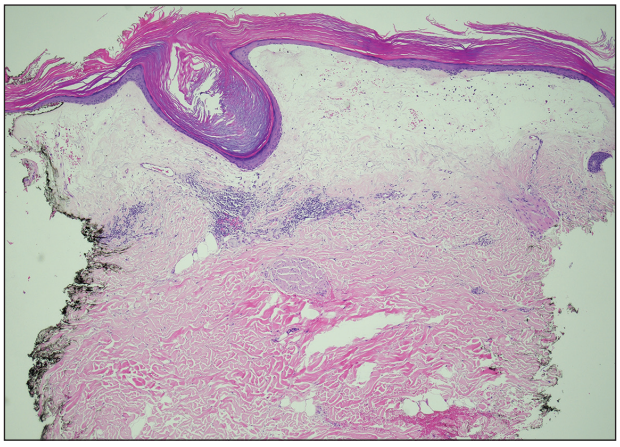

FIGURE: Histopathology demonstrated hyperkeratosis, follicular plugging, papillary dermal pallor, and adjacent lymphocytic inflammation characteristic of lichen sclerosus (H&E, original magnification ×40).

Atopic dermatitis manifests as pruritic erythematous scaly papules and plaques with secondary excoriation and possible lichenification. In adults, atopic dermatitis commonly appears on flexural surfaces.[2] Atopic dermatitis does not manifest with atrophy and skin wrinkling as seen in our patient.

In the management of lichen sclerosus, the standard treatment is potent topical corticosteroids. Alternatively, topical calcineurin inhibitors can be employed; however, due to the unknown nature of the condition's underlying cause, targeted treatment is challenging. Our case underscores how lichen sclerosus can be misdiagnosed, highlighting the need for more frequent reporting in the literature to enhance early recognition and reduce delays in patient treatment.

REFERENCES

1. De Luca DA, Papara C, Vorobyev A, et al. Lichen sclerosus: the 2023 update. *Front Med (Lausanne)*. 2023;10:1106318. doi:10.3389/fmed.2023.1106318
2. Chovatiya R, Silverberg JI. Pathophysiology of atopic dermatitis and psoriasis: implications for management in children. *Children (Basel)*. 2019;6:108. doi:10.3390/children6100108
3. Trayes KP, Savage K, Studdiford JS. Annular lesions: diagnosis and treatment. *Am Fam Physician*. 2018;98:283-291.
4. Ju T, Vander Does A, Mohsin N, et al. Lichen simplex chronicus itch: an update. *Acta Derm Venereol*. 2022;102:adv00796. doi:10.2340/actadv.v102.4367