

# Isolated unilateral lichen sclerosis of the sole

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## ABSTRACT

Extragenital involvement in lichen sclerosis is uncommon. Involvement of the palms and soles is very rare, with lichen sclerosis almost always showing elsewhere on the body. We describe the case of a female child with a linear hyperpigmented plaque on the right sole studded with keratotic papules. Dermoscopy showed scales and keratin plugs with surrounding pigmentation. Histopathology showed features of lichen sclerosis. This report describes a very rare occurrence of unilateral and isolated involvement of the sole with lichen sclerosis and its dermoscopic findings.

**Key words:** Lichen sclerosis; Lichen sclerosis et atrophicus; Dermoscopy; Follicular plugging

## INTRODUCTION

Lichen sclerosis, also known as lichen sclerosis et atrophicus, is a chronic inflammatory disease that commonly affects the genitals. Extragenital involvement is seen in around 15–20% of cases [1]. Isolated involvement of the palms or soles is extremely rare. Herein, we report a case of isolated unilateral lichen sclerosis of the sole in a female with dermoscopic and histopathological findings of this rare presentation.

## CASE REPORT

A ten-year-old female presented herself to us with asymptomatic discoloration on the right sole persistent for the last eight months. On examination, a linear atrophic hyperpigmented plaque 5 cm × 2 cm in size was present on the right sole, extending from the midfoot to the proximal part of the heel (Fig. 1). The plaque was studded with small keratotic papules. The rest of the cutaneous examination, including the genitals, was normal. Dermoscopy of the plaque showed scaling and keratin plugs surrounded by a rim of pigmentation and scales (Fig. 2). Histopathology of the area showed hyperkeratosis, flattened rete ridges, homogenous and hyalinized dermal collagen, adnexal

plugging, and a mild chronic superficial inflammatory infiltrate (Fig. 3). Based on these findings, a diagnosis of lichen sclerosis of the sole was reached.

## DISCUSSION

Lichen sclerosis (LS) is a benign chronic inflammatory disease of unknown etiology with a clear female preponderance [2]. Autoimmunity, trauma and chronic irritation, genetic factors, hormonal influences, and infections have been proposed as the pathogenesis of the disease [3]. LS commonly affects the genitals and manifests itself as severely pruritic porcelain-white plaques with erosions, fissures, and atrophy, often leading to deformity of the external genitalia. On the extragenital areas, it presents itself as asymptomatic shiny white macules or plaques with follicular plugs. The common extragenital sites are the upper trunk, neck, arms, legs, ears, and nose [2]. Involvement of the palmoplantar skin is extremely rare and has almost always been described with lichen sclerosis also present on other areas [1-5]. The volar lesions have been described as papules and plaques ranging from white to erythematous and sometimes having keratotic papules on them [4].

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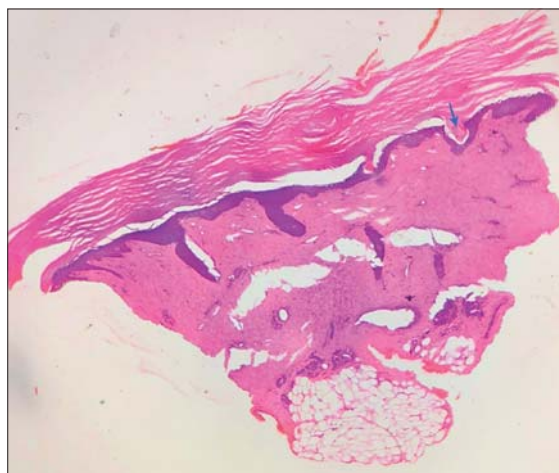
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**Figure 1:** A linear atrophic plaque on the right sole.



**Figure 2:** Polarized dermoscopy of the plaque showing scaling, adnexal plugs with pigment accentuation (blue arrow) and surrounding scales (green circles). (DermLite 4, 10x).



**Figure 3:** Hyperkeratosis and flattened rete ridges in the epidermis, homogenous and hyalinized dermal collagen with mild superficial chronic infiltrates in the dermis; adnexal plugging (blue arrow) seen at one end of the section (H&E, 40x).

Dermoscopy of extragenital lichen sclerosis reveals white structureless areas, comedo-like openings, comma vessels, hairpin-like vessels, and dotted vessels [6,7]. A dermoscopic examination of a palmoplantar location has probably never been done. While we found comedo-like openings, white structureless areas or vessels were not observed. This could have been due to the thickness of the volar skin. The presence of comedo-like openings is interesting as hair follicles are absent from the volar skin. However, keratotic papules on the palms in lichen sclerosis have been described [4]. We believe that these might be due to plugging of other skin adnexa.

Histopathology of lichen sclerosis shows hyperkeratosis, thinning of rete ridges, basal cell vacuolization, homogenous collagen, superficial perivascular infiltrate, and follicular plugging.

The differential diagnosis in our case included lichen sclerosis, morphea, lichen planus, and punctate palmoplantar keratoderma. Lichen planus is extremely itchy and shows colloid bodies and band-like infiltrates. Punctate palmoplantar keratoderma does not show epidermal atrophy, adnexal plugs, or an inflammatory infiltrate in the dermis. Morphea does not show adnexal plugging or basal cell degeneration. Although morphea and lichen sclerosis are considered two separate disease entities, some controversy still lingers around the two being different facets of the same disease, with coexistent lesions and one transitioning into the other [8].

The treatment of lichen sclerosis includes high-potency topical steroids, other immunomodulators, systemic retinoids, estrogen, and phototherapy, but the recurrence rate is high [9]. Surgical modalities may be needed in the case of stricture and deformity of the genitals.

We present a case of isolated unilateral lichen sclerosis of the sole and describe the dermoscopic findings of volar lichen sclerosis, which, to the best of our knowledge, has not been done before.

### Consent

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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