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Sclerotic atrophic plaques associated with a tattoo

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## Photo Vignette

### Sclerotic atrophic plaques associated with a tattoo

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## Abstract

Lichen sclerosus is a chronic inflammatory disease, usually of the anogenital area, that causes intractable itching and soreness. Less commonly, it may have extragenital involvement in 15 to 20% of cases. Lichen sclerosus has been reported at sites of injury as a Koebner phenomenon. We report a case of lichen sclerosus at the site of a tattoo with simultaneous genital involvement.

**Keywords:** Tattoo, lichen sclerosus, Koebner phenomenon

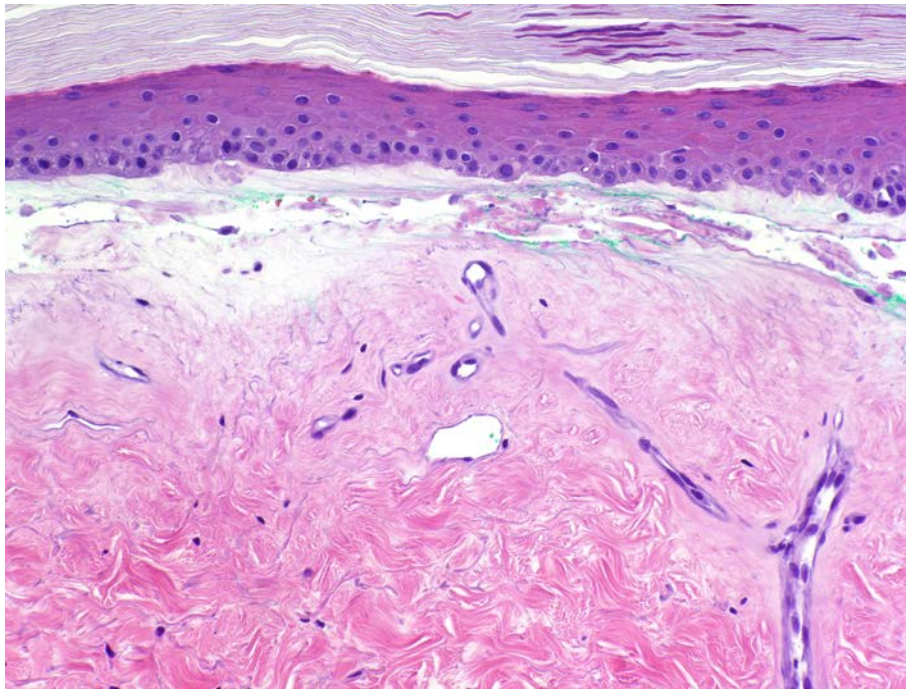
## Case synopsis

A 40-year-old woman presented with pruritus developing in two tattoos that had been professionally placed approximately 3 years prior to presentation. The patient also noticed the appearance of "scar-like" lesions in her tattoos that appeared to extend beyond the tattoo border. Upon further questioning the patient also admitted to having vulvar pruritus and burning.



**Figure 1.** White sclerotic atrophic plaque composed of coalescing papules in and beyond the tattooed area

On physical examination, the patient had 2x2 cm and 1x1 cm sharply demarcated ivory white sclerotic atrophic plaques composed of coalescing papules in and beyond the tattooed areas over the anterior thigh (Figure 1) and upper chest. In the vulva, there was effacement of the clitoris with partial resorption of the labia minora. White sclerotic plaques were present over the apical portion of the vulva, around the urethral meatus, and in the fourchette and perineal areas.



**Figure 2.** Compact orthokeratosis, flattened epidermis, focal basal layer vacuolization with individually necrotic keratinocytes, a band of eosinophilic homogenized collagen in the papillary dermis, and a superficial perivascular and interstitial lymphohistiocytic infiltrate (H&E 100X)

Biopsies from the left thigh (Figure 2) and vulva demonstrate compact orthokeratosis, flattened epidermis, focal basal layer vacuolization with individually necrotic keratinocytes, a band of eosinophilic homogenized collagen in the papillary dermis, and a superficial perivascular and interstitial lymphohistiocytic infiltrate. The findings supported the histological diagnosis of lichen sclerosis.

## Discussion

Lichen sclerosis is a chronic inflammatory disease of the anogenital area that causes intractable itching and soreness. Less commonly, it may have extragenital involvement (15 to 20%) and the latter is usually not pruritic. Although the disease may affect all age groups and both sexes, it most commonly occurs in post-menopausal women during the 5th and 6th decades [1]. The etiology of the disease is still unknown, but recently antibodies against the extracellular matrix protein-1 and collagen XVII have been detected in more than two thirds of affected individuals [2]. The patient presented here, shows the development of lichen sclerosis in tattoo areas, consistent with Koebnerized lichen sclerosis. The Koebner phenomenon, also known as the isomorphic response, is known to happen in tattoos as a result of skin injury. Koebner phenomenon in tattoos has been reported for psoriasis, sarcoidosis, and discoid lupus erythematosus. There are fewer publications on lichen sclerosis occurring in a tattoo [1,3]. Still, the Koebner phenomenon is known to occur in lichen sclerosis. Lichen sclerosis has been reported at sites of burns, radiation, vaccination, and around circumcision scars [1,4]. It is possible that the anogenital lesions of lichen sclerosis may also represent a Koebner phenomenon because this area is exposed to constant friction. It was shown that grafted skin transplanted on affected vulvar areas develops the disease, whereas lichen sclerosis skin becomes normal when transplanted to extragenital non-involved sites, suggesting local influences on disease processes [1]. The patient presented here noticed dramatic improvement after using ultrapotent topical steroids. Of note, it is important to examine the vulvar area in all patients presenting with extragenital lichen sclerosis regardless of symptomatology in the area. Regular follow-up of patients with vulvar lichen sclerosis is important given the risk of the development of squamous cell carcinomas of the vulva in 4-5 % of patients [5].

## References

1. Powell JJ, Wojnarowska F. Lichen sclerosis. *Lancet*. 1999 May 22;353(9166):1777-83. [PMID: 10348006]

2. Sander CS, Ali I, Dean D, Thiele JJ, Wojnarowska F. Oxidative stress is implicated in the pathogenesis of lichen sclerosis. *Br J Dermatol*. 2004 Sep;151(3):627-35. [PMID: 15377350]
3. Arun B, Jamieson L, Mendonca C. An unusual presentation of lichen sclerosis et atrophicus in a tattoo. *Clin Exp Dermatol*. 2010 Jun;35(4):441. [PMID: 19758382]
4. Meffert JJ, Grimwood RE. Lichen sclerosis et atrophicus appearing in an old burn scar. *J Am Acad Dermatol*. 1994 Oct; 31(4):671-3. [PMID: 8089298]
5. Pugliese JM, Morey AF, Peterson AC. Lichen sclerosis: review of the literature and current recommendations for management. *J Urol*. 2007 Dec;178(6):2268-76. [PMID: 17936829]