

### 1. Lichen simplex chronicus

Lichen simplex chronicus (LSC), also known as localized or circumscribed neurodermatitis, is a common disorder in which the characteristic skin thickening is secondary to repetitive rubbing and scratching. Individuals with a personal or family history of atopy are more susceptible to developing this condition.<sup>1</sup> Although patients with LSC are more likely to respond to an itch stimulus than control subjects, the underlying pathophysiology is not fully understood.<sup>2</sup> Lichen simplex chronicus tends to occur in adults, especially those between 30 and 50 years of age, and is rare in children.<sup>3</sup> Women are more commonly affected than men, and a higher incidence has been noted in the Asian population.<sup>3,4</sup>

Pruritus is the predominant symptom that leads to the development of LSC. It is often paroxysmal and typically worse at night.<sup>4</sup> Frequent triggers include mechanical irritation (eg, from clothing), environmental factors, such as heat and sweating, and psychological factors, such as stress and anxiety.<sup>2-5</sup> Patients respond to the pruritus with vigorous rubbing and scratching, often to the point where the skin becomes sore. Initial skin changes include erythema and slight edema. Over time, these features subside and the skin becomes thickened and leathery, with exaggeration of the normal skin markings.<sup>5</sup> This change, known as lichenification, is the key feature of LSC.

The typical presentation of LSC is a circumscribed, lichenified, pruritic plaque. Scales and excoriation are often present. Changes in pigment also occur, most notably in darker-skinned individuals.<sup>6</sup> Both hypo- and hyperpigmentation have been described, although the most common finding is a dusky violaceous or brown hyperpigmentation. Lesions of LSC can appear anywhere on the body; however, certain sites of predilection exist. This includes the nape and sides of the neck, extensor surfaces of the forearms and elbows, inner thighs, lower legs, and ankle flexures.<sup>3,4</sup> The vulva, scrotum, and anus can also be affected.<sup>6</sup> Patients can present with a single lesion or have multiple sites of involvement.<sup>4</sup> Lichen simplex chronicus usually arises on normal-appearing skin but can also occur superimposed on areas of diseased skin, such as atopic dermatitis, psoriasis, and tinea corporis.

### Diagnosis

Lichen simplex chronicus is essentially a clinical diagnosis. The differential includes lichen planus, psoriasis, tinea corporis, contact dermatitis (irritant or allergic), and mycosis fungoides (cutaneous T-cell lymphoma). These entities can usually be differentiated from LSC on the basis of morphology and distribution. A skin biopsy might be beneficial in select cases in which the diagnosis is uncertain. Histopathologic findings include



epidermal hyperplasia with acanthosis and dermal fibrosis with vertical streaking of collagen bundles.<sup>7</sup> More difficulty can be encountered when LSC is superimposed on areas of diseased skin. For example, patients with psoriasis can develop secondary LSC, which combines clinical and histological features of both conditions; this disorder, referred to as psoriatic neurodermatitis, might present a challenge to the physician.<sup>8</sup>

### Treatment

Treatment of LSC is difficult and recurrences are frequent. Interruption of the incessant itch-scratch cycle, which characterizes this condition, is of paramount importance. Patients must be advised to stop rubbing and scratching involved areas. When feeling the urge to scratch, applying an ice cube or cold pack until the itch subsides can be beneficial. Sedating antihistamines can also be helpful to prevent nocturnal pruritus, which can be quite severe. In addition, lifestyle modification to reduce stress and anxiety should be encouraged, as psychological distress is a frequent trigger of pruritus in these patients. Referral to a psychologist or psychiatrist might be required in severe or recalcitrant cases.<sup>4</sup>

Topical corticosteroids, however, are the treatment of choice for LSC. High-potency agents such as beta-methasone dipropionate and clobetasol propionate are very effective; however, because of the risk of steroid-induced atrophy with long-term use, these agents are generally reserved for initial management. For chronic lesions, low-to-medium potency agents under occlusion is the preferred method of treatment. Menthol (0.2% to 0.5%), camphor (0.2% to 0.5%), or tar (coal-tar solution; 5% to 10%) can be compounded into steroid ointments for enhanced effect. Occlusive dressings are beneficial for 2 reasons: First, they permit contact between the medication and the skin for longer periods of time. Second, they act as a physical barrier to prevent scratching.<sup>4</sup> Other topical therapies less commonly employed for LSC include tacrolimus ointment 0.1%<sup>9</sup> and topical capsaicin cream.<sup>10</sup>

For persistent lesions, intralesional injections of a corticosteroid, such as triamcinolone acetonide, can be employed. Although highly effective, this modality should be used with caution as the risk of atrophy and

depigmentation is greater than with topical corticosteroids. Finally, the most severe cases of LSC (especially lesions occurring on the extremities) might require complete occlusion with an Unna boot to break the itch-scratch cycle, although this is rare.<sup>4-5</sup> An Unna boot is a special gauze dressing impregnated with zinc oxide that can be wrapped around affected areas for up to a week at a time. Occasionally, oral agents such as mirtazapine<sup>11</sup> and gabapentin<sup>12</sup> or intranasal butorphanol<sup>13</sup> are employed with varying success. ❁

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**Competing interests**

None declared

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