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Review Article

Lichen Simplex Chronicus: Easy Psychological Interventions that Every Dermatologist Should Know

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Abstract

Lichen Simplex Chronicus (LSC) is a chronic skin disease characterized by lichenified plaques, which occur as result of constant scratching or rubbing of skin. Pruritus is the predominant symptom that leads to the development of LSC. Frequent pruritus triggers include mechanical irritation, environmental factors, such as heat and sweating, and psychological factors, such as stress and anxiety.

From a psychodermatology point of view, the interruption of the never-ending itch-scratch cycle, which characterizes LSC, is of supreme importance for patient's recovery. Furthermore, emotional tensions, as seen in patients with anxiety, depression, or obsessive-compulsive disorder, may play a key role in inducing a pruritic sensation, leading to scratching that can become self-perpetuating.

Referral to a psychiatrist or a psychotherapist might be required in many cases. However, this referral could be difficult in daily practice, given the patient's unwillingness to seek mental health counseling. Therefore, the dermatologist should focus and be able to perform, at least at a very basic level, some easy psychological interventions that would help patients to end with the itch-scratch cycle, while helping the patients to accept the need to seek for mental help.

In this article, we describe easy cognitive behavioral techniques to address the factors that exacerbate and maintain itch-scratch cycle in LSQ patients. Moreover, we stress in the need that dermatologists should be trained in the usage of these techniques in order to help LSQ patients, especially when referral to a psychiatrist is hindered because of the patients' reluctance of seeking mental help.

Lichen Simplex Chronicus in a Nut-Shell

Lichen Simplex Chronicus (LSC), also called as neurodermatitis circumscripta is a chronic skin disease characterized by lichenified plaques, which occur as result of constant scratching or rubbing of skin [1]. LSC is not a primary process. Rather, a person senses pruritus in a specific area of skin (with or without underlying pathology) and causes mechanical trauma to the point of lichenification.

Patients with LSC usually describe stable pruritic plaques on one or more areas; however, LSC is found on the skin in regions accessible to scratching. Those regions include the following: scalp, nape of neck, extensor forearms and elbows, vulva and scrotum, upper medial thighs, knees, lower legs, and ankles [2-4]. LSC tends to occur in adults, especially those between 30 and 50 years of age, and women are more commonly affected than men [5].

Pruritus is the predominant symptom that leads to the development of LSC. It is often paroxysmal and typically worse at night [5]. Frequent triggers include mechanical irritation (e.g., from clothing), environmental factors, such as heat and sweating, and psychological factors, such as stress and anxiety. Furthermore, emotional tensions, as seen in patients with anxiety, depression, or obsessive-compulsive disorder, may play a key role in inducing a pruritic sensation, leading to scratching that can become self-perpetuating [6,7]. Despite pruritus provokes rubbing that produces clinical lesions, the exact underlying pathophysiology of LSC remains unknown.

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. Both hypo- and hyperpigmentation have been described, although the most common finding is a dusky violaceous or brown hyperpigmentation [5,8]. While LSC usually arises on normal-appearing skin, some skin types are more predisposed to lichenification, such as skin that tends toward eczematous conditions (i.e., atopic dermatitis, atopic diathesis) [1]. Figures 1, 2 and 3 present three cases of LSC. Figure 4 shows LSC histopathology.

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Treatment for LSC includes:

- Topical modalities comprises of topical steroids, intralesional steroids, keratolytic agents such as salicylic acid, capsacin, tacrolimus pimecrolimus, cryotherapy, topical doxepin and botulinum toxin [1,2,9-11].
- Systemic modalities of treatment include sedative antihistamines, tricyclic antidepressants and psychotherapy [1,2].
- Transcutaneous electric nerve stimulation has been reported to be effective in reducing itch [12].

Pruritus may resolve and lesions may clear completely. However, some mild damaging, and hypo- and hyperpigmentary changes could remain after successful treatment. Some studies reported the appearance of complications like secondary infection and occurrence of squamouscell carcinoma [13].

Relapse is more likely if previously affected skin is overwrought by of heat, humidity, skin irritants or allergens. Furthermore, relapse



Figure 2: Facial LSC. Erythematous, edematous and lichenified plaque of diffuse boundaries and jagged edges. Affected areas are cheeks, forehead, chin and nose. Nasolabial folds are preserved. Skin thickening and thin scaling of the plaque. Exaggeration of the normal folds of the facial surface with hyperpigmented areas. The lesion was biopsied and the diagnosis of LSC was confirmed.



Figure 3: Verruciform LSC. The lesion was biopsied and the diagnosis of LSC was confirmed.

is going to be a constant in periods of psychic stress or in patients with coexisting psychopathology [14].

From a psychodermatology point of view, the interruption of the never-ending itch-scratch cycle, which characterizes LSC, is of supreme importance for patient's recovery. Patients should be trained to stop rubbing, picking and scratching their skin.

When feeling the urge to scratch, some physicians had recommended applying an ice cube or cold pack until the itch subsides [5]; this could be beneficial, but only for a short period of time [15]. Moreover, the usage of sedating antihistamines could be helpful to prevent nocturnal pruritus, but it will not help the patient to recognize the urges and situations that are a frequent trigger of pruritus in these patients.

Referral to a psychiatrist or a psychotherapist might be required in many cases. Psychotropic drugs like antidepressants and anxiolytics could be useful in order to address mental disorders (e.g. anxiety, depression, obsessive-compulsive disorder) that are common comorbidity of patients affected by LSC [14]. However, referral to



Figure 4: Histopathology of LSC. Acanthotic epidermis. Discrete increment of granular cell layer. Hyperkeratosis. Epidermal rete is sharp, serrated and elongated. Perivascular and mild interstitial inflammation with lymphocytes and some melanophages. Important vascular proliferation. Verticalization of collagen bundles in superficial dermis.

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a psychiatrist could be difficult in daily practice, given the patient's reluctance to seek mental health counseling [14,15]. Therefore, the dermatologist should focus and be able to perform, at least at a very basic level, some easy psychological interventions that would help patients to end with the itch-scratch cycle, while helping the patients to accept the need to seek for mental help [16]. Dermatologists should "mind the skin" [17].

Mind the Skin

The nervous system and the skin develop next to each other in the embryo and remain intimately interconnected and interactive throughout life [18]. Authors had agreed that the nervous system can influence skin conditions through psychoneuroimmunoendocrine mechanisms and through behaviors. Understanding the pathophysiology aids in selection of treatment plans for correcting the negative effects of the psyche on specific skin conditions [18].

The importance of skin in the psychic function could be assessed from its role as an organ of communication and expression of emotions. The skin assumed this role from the first moments of life of the human being. Moreover, the skin is the organ of "attachment", because the initial physical experiences in the newborn are mainly through the cutaneous organ. These early (and first) experiences of interaction with the mother (or surrogate), established through the skin, are essential to achieve the proper organic and psychoemotional development of a child [14].

Since the skin is the most accessible part of the human body, it is common for many people to express aggressive, anxious or self-destructive nature impulses through the skin, and, thereby, causing dermatological symptoms. On the other hand, people with dermatological diseases involving self-image (severe acne, psoriasis) may feel depressed, embarrassed or anxious because of their illness [14,19].

LSC is both a pruritic disease with psychiatric sequelae (the main psychiatric sequelae secondary to chronic pruritus of LSC are anxiety and depressive disorders) and a pruritic disease aggravated by psychosocial factors (thickened plaques of lichen simplex chronicus are produced by rubbing or scratching the skin and are initiated or exacerbated by stress) [18,20].

Many LSC patients with chronic pruritus experience scratching as an automatic response to the sensation of itch. In other patients, their attention is focused on the itch, and this leads to increased perception of pruritus and intensification of suffering [21].

Scratching provides immediate relief of discomfort and may perhaps serve to reduce inner tension, and this negative reinforcement leads to conditioned scratching. A vicious cycle of itch-and-scratch eventually results; this situation can be perceived as a loss of control and helplessness, and it is often accompanied by a sense of despondency and guilt [20,21].

In order to address both automatic and focused scratching in LSC patients, dermatologist could apply, during patient's consultation, some Cognitive Behavioral Therapy (CBT) techniques.

CBT is the most common form of (and most effective in our experience) psychotherapy for the treatment of dysfunctional habits by interrupting and altering dysfunctional cognitions or behaviors

that damage the skin or interfere with dermatologic therapy [15]. Skin diseases responsive to cognitive-behavioral methods include LSQ, excoriation (skin picking) disorder, acne excoriée, factitious cheilitis, hyperhidrosis, nail biting, onychotillomania, prurigo nodularis, trichotillomania, and urticarial [15,18,22,23].

In LSC patients, CBT seeks to modify several backgrounds and consequences of maintaining the itch-scratch behavior; moreover, the consistent application of cognitive-behavioral techniques will achieve relatively permanent changes in brain function [15,22,23].

CBT in Automatic Itch-Scratch

Stimuli control

In our experience [15], stimuli control technique is based on teaching patients to use techniques in situations that otherwise would trigger scratching behavior. The overall objective of the stimuli control technique is to make the scratching behavior much more difficult to the patient and to provide ways to avoid the positive reinforcement that typically produces the repetitive behavior.

Table 1 shows common interventions to control stimuli, for various situations that could cause scratching behaviors [23].

Habit reversal training

Habit reversal training, developed by psychologists Azrin and Nunn [24], is another key component of CBT in the treatment of psychodermatology patients.

Habit reversal training has three steps: sensitization and awareness, competing response training and social support [15,23].

• Sensitization and awareness includes describing the scratching behavior, the feelings and behaviors that precede it, and the recognition of the repetitive behavior itself [16]. As mentioned before, scratching could occur automatically, without the patient noticing. For the patient to recognize his/her behavior, he/she is asked to make detailed notes of the behavior, including feelings, warning signals or behaviors that occur before the scratching episode. These feelings may be skin tingling, tension or and overwhelmed feeling. On the other hand, the warning signals include rubbing the skin or taking the hand to the place where scratching usually occurs, among other signals. The dermatologist should work with the patient in order to identify two or three warning signals [15].

• In competing response training, the dermatologist teaches the patient to perform a behavior to prevent scratching. This preventing behavior should be performed for at least one minute, as soon as the patient realizes that scratching behavior has started or that a warning signal has appeared [25]. In our experience, a competing response usually taught is to cross arms and gently squeeze the fists [15].

Table 1: Interventions to control stimuli.

Situation	Possible intervention
Watching television	Keep both hands busy, opening and closing the fists, or holding objects such as rubber balls.
Driving	Keep both hands on the hand wheel.
Reading a book	Hold another object (like a rubber ball) with the free hand or hold the book with both hands
Bedtime	Go to bed only when you are tired; if you do not fall asleep within 10 minutes, get up and come back later.

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• Social support is based on the choice of an individual close to the patient (friend, relative, partner), who will be responsible for noting the patient's scratching behavior, helping the patient to become more aware of it and encouraging him/her to practice the competing response.

CBT in Focused Itch-Scratch

In addition to the stimuli control and habit reversal training, there are other strategies to help patients reduce scratching and cope with difficulties in regulating emotions [15]. These strategies include, among others, progressive muscle relaxation training and cognitive restructuring.

• Progressive muscle relaxation can be used to reduce tension and stress (which can trigger scratching). The dermatologist should teach the patient to contract and relax various muscle groups, so that he/she can respond when tense moments occur (through muscle contraction recognition) [18].

• Cognitive restructuring is the process of assessing, challenge and change maladaptive beliefs that usually perpetuate a problem. In the treatment of LSQ patients, it is important to identify and, subsequently, modify cognitive precursors of scratching because many people scratch their skin in order to reduce negative or irrational emotions or feelings. Although this technique requires some specific training in psychiatry/psychotherapy, the dermatologist could play an important role by helping the LSC patient to recognize negative or irrational thoughts that precede scratching, and to modify them through cognitive restructuring [15], with the assistance of a psychiatrist.

Conclusions

Although not life-threatening, LSC can produce an important psychosocial burden; sleep disturbance and sexual dysfunction in many patients [26]. From a psychodermatology point of view, the interruption of the never-ending itch-scratch cycle, which characterizes LSC and other pruritic skin diseases, is pivotal in the treatment and recovery of the affected patients.

Patients' psychological capability to control the itch-scratch process can be enhanced with easy psychological interventions that come from CBT. These easy psychological interventions include a group of techniques designed to address the factors that exacerbate and maintain automatic itch-scratch cycle (stimuli control and habit reversal training); and another group directed to focused scratching behaviors (progressive muscle relaxation training and cognitive restructuring). Dermatologists should be trained in the usage of these techniques in order to help LSC patients, especially when referral to a psychiatrist is hindered because of the patients' reluctance of seeking help, as they may not see the condition as a psychiatric disorder.

In addition to the above-mentioned techniques, patient's education is pivotal in order to improve patients' understanding of their disease, identification and avoidance of triggering factors and teaching itch-relieving interventions [20].

However, and when possible, a psychodermatology assessment should be conducted. This is a multidisciplinary consultation, in which a dermatologist and a liaison psychiatrist are closely involved in joint assessments. The consultation takes place, usually in the dermatology facility. The simultaneous presence of two doctors, one that looks and touches and another one who listens, improves the link between the skin and psyche and allows the patient to feel considered as a whole. This helps obviate the patient's reluctance to a psychiatric evaluation and forms an effective and accurate therapeutic alliance, which ensures the success of treatment [17,27,28].

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