

Lichen Simplex Chronicus as an Essential Part of the Dermatologic Masquerade

Cristiana Voicu¹, Tiberiu Tebeica², Matteo Zanardelli³, Hristo Mangarov⁴, Torello Lotti⁵, Uwe Wollina⁶, Jacopo Lotti⁷, Katlein França⁸, Atanas Batashki⁹, Georgi Tchernev^{10*}

¹Dermatology Department, Polissano Clinic, 26Z Timisoara Blvd, Bucharest, Romania; ²Dr Leventer Centre, 13-17 Sevastopol Street, Ste. 204, Bucharest 010991, Romania; ³Private company - Pharmacology, Toxicology and Innovative Treatments, Rome, Italy; ⁴Medical Institute of Ministry of Interior (MVR), Department of Dermatology and Dermatologic Surgery, General Skobelev 79, 1606 Sofia, Bulgaria; ⁵Department of Dermatology, University of Rome "G. Marconi", Rome, Italy; ⁶Department of Biotechnology, Delft University of Technology, 2628 BC, Delft, The Netherlands; ⁷Department of Dermatology and Allergology, Academic Teaching Hospital Dresden-Friedrichstadt, Friedrichstrasse 41, 01067, Dresden, Germany; ⁸Department of Nuclear, Subnuclear and Radiation Physics, University of Rome "G. Marconi", Rome, Italy; ⁹Institute for Bioethics & Health Policy; Department of Dermatology & Cutaneous Surgery; Department of Psychiatry & Behavioral Sciences, University of Miami Miller School of Medicine - Miami, FL, USA; ¹⁰Abdominal and Thoracic Surgery, Department of Special Surgery, Medical University of Plovdiv, bul. "Peshtersko shose" Nr 66, 4000 Plovdiv, Bulgaria; ¹⁰Department of Dermatology, Venereology and Dermatologic Surgery, Medical Institute of Ministry of Interior, and Onkoderma Polyclinic for Dermatology and Dermatologic Surgery, Sofia, Bulgaria

Abstract

A 48 years old female patient had been suffering from the lesions presented for four years. They have started as small, pruritic patches which had been mechanically irritated and grew up in time. The patient had no associated comorbidities or allergies, and she was not under any medication. On physical examination, she presented one erythematous, exudative plaque, with dimensions of 2.5/4 cm, located on the proximal phalanx and interphalangeal articulation of the left thumb. All histopathological features were consistent with the diagnosis of lichen simplex chronicus. Some lesions of lichen simplex chronicus exhibit signs of pseudocarcinomatous, infundibular and sometimes eccrine ductal proliferation of keratinocytes. Although the pseudoinfiltrative aspect of the epithelial proliferation and its pronounced degree might mimic a well-differentiated lesion of squamous cell carcinoma, a lack of cellular atypia and atypical mitotic figures are features that do not support this diagnosis. On the other hand, long lasting lesions of lichen simplex chronicus may lead to alterations in the processes of keratinocyte proliferation and differentiation and eventually give rise to malignant transformation. The best treatment management is a psychodermatological approach, a combination of skin care with psychotherapy, in order to prevent relapses.

Citation: Voicu C, Tebeica T, Zanardelli M, Mangarov H, Lotti T, Wollina U, Lotti J, França K, Batashki A, Tchernev G. Lichen Simplex Chronicus as an Essential Part of the Dermatologic Masquerade. Open Access Maced J Med Sci. <https://doi.org/10.3889/oamjms.2017.133>

Keywords: lichen simplex; prurigo nodularis; carcinoma; histology; surgery.

***Correspondence:** Professor Dr Georgi Tchernev PhD, Chief of 1) Department of Dermatology, Venereology and Dermatologic Surgery, Medical Institute of Ministry of Interior (MVR), General Skobelev 79, 1606 Sofia; 2) Onkoderma - Polyclinic for Dermatology and Dermatologic Surgery, General Skobelev 26, Sofia, Bulgaria. GSM: 00359885588424. E-mail: georgi_tchernev@yahoo.de

Received: 03-Apr-2017; Revised: 25-Apr-2017; Accepted: 26-Apr-2017; Online first: 24-Jul-2017

Copyright: © 2017 Cristiana Voicu, Tiberiu Tebeica, Matteo Zanardelli, Hristo Mangarov, Torello Lotti, Uwe Wollina, Jacopo Lotti, Katlein França, Atanas Batashki, Georgi Tchernev. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

Funding: This research did not receive any financial support.

Competing Interests: The authors have declared that no competing interests exist.

A 48 years old female patient had been suffering from the lesions presented in Figure 1a/1b for four years. They have started as small, pruritic patches which had been mechanically irritated and grew up in time. The patient had no associated comorbidities or allergies, and she was not under any medication. On physical examination, she presented one erythematous, exudative plaque, with dimensions of 2.5/4 cm, located on the proximal phalanx and interphalangeal articulation of the left thumb.

A punch biopsy taken from the lesion revealed a markedly hyperplastic epidermis (Fig. 2a),

with irregular hyperkeratosis and foci of parakeratosis, a thickened granular zone, acanthosis with irregular rete ridges and a sparse to moderately dense dermal superficial perivascular lymphohistiocytic infiltrate (Fig. 2b). The hyperplastic changes were also present at the level of follicular infundibula, with hypergranulosis and hyperkeratosis in the form of keratotic cysts (Fig. 2c and 2d). The eccrine ducts showed overtly squamous metaplasia. The affected papillary dermis included coarse bundles of collagen arranged in vertically oriented streaks (Fig. 2e). Rare eosinophils dispersed around some widely dilated capillaries,

together with an increased number of fibrocytes, were detected in high power microscopic examination (Fig. 2f). All these features were consistent with the diagnosis of lichen simplex chronicus.

We have taken into consideration the following differential diagnosis: knuckle pads, nodular prurigo, HPV associated lesions or Bowen disease. Lichen simplex chronicus, together with prurigo nodularis, knuckle pads and picker's nodule, represent chronic psoriasiform dermatitides induced by persistent, vigorous rubbing.



Figure 1: Erythematous, exudative plaque, with dimensions of 2.5/4 cm, located on the proximal phalanx and interphalangeal articulation of the right thumb

They share similar histopathologic features and pathogenic mechanisms. Lichen simplex chronicus is rather a hyperkeratotic plaque, whereas the others are merely papules or nodules produced by the effect of severe and repeated scratching of a cutaneous area located within easy reach of the fingernails [1].

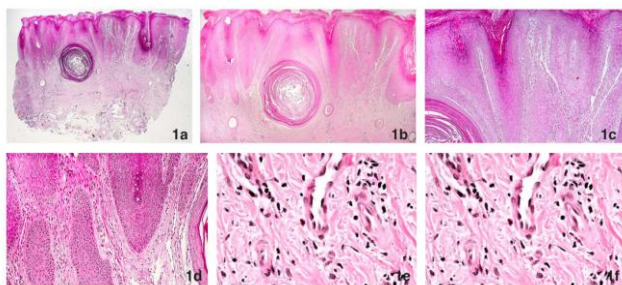


Figure 2: Histopathological features were consistent with the diagnosis of lichen simplex chronicus

Lichen simplex chronicus (LSC) is a chronic skin condition strongly linked with emotional factors which are the source of intense pruritic sensation [1, 2]. As a result of constant scratching or rubbing of the skin, lichenified plaques develop mostly on accessible body areas such as the scalp, head and neck, hands, genitals [3]. Patients with LSC find themselves in a vicious circle, since emotional factors play a key role in the initiation of pruritus and the appearance of the lesions causes more psychological tension [1], sexual

dysfunction and sleep disturbances [4]. An JG et al. have shown that the dermatology quality life index (DLQI) was lower in patients with LSC than in those with other dermatological conditions such as psoriasis [5]. LSC patients have also been found to present particular personalities characteristics in comparison with healthy control individuals, such as pain avoidance tendency, more conforming personalities, dependency on other people [6], or even depression and dissociative disturbances [1].

Although not a life threatening condition, the lesions of LSC can become secondary infected or, in rarer instances, they can evolve into squamous cell carcinoma [7]. As was the case here, some lesions of lichen simplex chronicus exhibit signs of pseudocarcinomatous, infundibular and sometimes eccrine ductal proliferation of keratinocytes. Although the pseudoinfiltrative aspect of the epithelial proliferation and its pronounced degree might mimic a well-differentiated lesion of squamous cell carcinoma, a lack of cellular atypia and atypical mitotic figures are features that do not support this diagnosis. On the other hand, long lasting lesions of lichen simplex chronicus may lead to alterations in the processes of keratinocyte proliferation and differentiation and eventually give rise to malignant transformation [8].

The best treatment management is a psychodermatological approach, a combination of skin care with psychotherapy, in order to prevent relapses [1].

References

- Lotti T, Buggiani G, Prignano F. Prurigo nodularis and lichen simplex chronicus. *Dermatol Ther.* 2008;21(1):42-6. <https://doi.org/10.1111/j.1529-8019.2008.00168.x> PMID:18318884
- Chuh A, Wong W, Zawar V. The skin and the mind. *Aust Fam Physician.* 2006; 35(9): 723-5. PMID:16969446
- Rajalakshmi R, Thappa DM, Jaisankar TJ, Nath AK. Lichen simplex chronicus of anogenital region: a clinico-etiological study. *Indian J Dermatol Venereol Leprol.* 2011;77(1):28-36. <https://doi.org/10.4103/0378-6323.74970> PMID:21220876
- Ermertcan AT, Gencoglan G, Temeltas G, Horasan GD, Devenci A, Ozturk F. Sexual dysfunction in female patients with neurodermatitis. *J Androl.* 2011; 32 (2):165-9. <https://doi.org/10.2164/jandrol.110.010959> PMID:20864649
- An JG, Liu YT, Xiao SX, Wang JM, Geng SM, Dong YY. Quality of life of patients with neurodermatitis. *Int J Med Sci.* 2013;10 (5): 593-8. <https://doi.org/10.7150/ijms.5624> PMID:23533146 PMID:PMC3607245
- Martin-Brufau R, Corbalon-Berna J, Ramirez-Andreo A, Brufau-Redondo C, Liminana-Gras R. Personality differences between patients with lichen simplex chronicus and normal populations: A study of pruritus. *Eur J Dermatol.* 2010; 20(3): 359-63. PMID:20388609
- Wu M, Wang Y, Bu W, Jia G, Fang F, Zhao L. Squamous cell carcinoma arising in lichen simplex chronicus. *Eur J Dermatol.* 2010; 20(6):858-9. PMID:20959279
- Tiengo C, Deluca J, Belloni-Fortina A, Salmaso R, Galifi F,

Alaibac M. Occurrence of squamous cell carcinoma in an area of lichen simplex chronicus: case report and pathogenetic hypothesis. J Cutan Med Surg. 2012;16(5):350–2.
<https://doi.org/10.1177/120347541201600513> PMID:22971311