DERMATOLOGICA SINICA xxx (2016) 1–5

Contents lists available at ScienceDirect

Dermatologica Sinica

journal homepage: http://www.derm-sinica.com

ORIGINAL ARTICLE

Atypical dermoscopic findings in patients diagnosed with lichen planus by histological examination

Jiyun Jung, Eunbyul Cho, Eunjoo Park, Kwangho Kim*, Kwangjoong Kim

Department of Dermatology, College of Medicine, Hallym University Sacred Heart Hospital, Anyang, South Korea

ARTICLE INFO

Article history:
Received: May 3, 2016
Revised: Aug 18, 2016
Accepted: Sep 18, 2016

Keywords:
dermoscopy
histopathology
lichen planus
Wickham striae

ABSTRACT

Background/Objectives: Lichen planus (LP) is an inflammatory skin disorder characterized by discrete, violaceous, polygonal papules. The dermoscopic features of common inflammatory dermatoses are not well studied. Although previous studies have demonstrated the typical patterns of LP, we found some atypical dermoscopic findings without Wickham striae in patients who had been diagnosed with LP by histopathologic examination. Our aim was to assess the atypical dermoscopic patterns associated with LP.
Methods: We analyzed the dermoscopic features of seven LP lesions with atypical dermoscopic findings from seven patients who had been clinically and histopathologically diagnosed with LP.
Results: Dermoscopically, five of the seven patients showed the pigmented pattern. We observed the following diverse pigment patterns: dots/globules, diffuse peppering, perifollicular, and linear. We also observed vascular and erosive patterns of variant LP.
Conclusion: In this study, we emphasize the role of dermoscopy for identification of the clinical status of LP and its correlation to the results of histopathologic examinations. In addition to the typical dermoscopic patterns, dermoscopic recognition of variation in the morphology of LP could aid in the diagnosis of LP prior to histopathologic evaluation.

Introduction

Dermoscopy is a noninvasive diagnostic method that has been widely recognized as a useful method for assessing and monitoring patients with pigmented and nonpigmented skin tumors.[1–4] Dermoscopy is beneficial for the evaluation of vascular and pigmented structures that are not visible clinically,[1] and has also been reported to be a useful tool for the early recognition of malignant melanoma.[5] In recent years, its applicability has also been extended to the field of inflammatory skin disorders.[6] However, the dermoscopic features of common inflammatory dermatoses are not well studied, and limited data about their features are currently available. Lichen planus (LP), an inflammatory skin disorder, is a well-characterized dermatological condition that affects the skin, mucosa, hair, and nails, and is characterized by discrete, violaceous, polygonal papules.[7,8] The surface of LP lesions may exhibit white lines in a variable configuration, also known as Wickham striae (WS).[9] A nonvascular feature (whitish striae) is the most significant and typical dermoscopic finding in LP. The dermoscopic features of LP also include gray-blue dots, comedo, milium-like cysts, and vascular structures (red lines).[10] Although previous studies have demonstrated typical patterns of LP, we have observed atypical dermoscopic findings without WS in patients who had been diagnosed with LP by histopathologic examination and evaluated the correlation between dermoscopic patterns and histopathologic findings.

Materials and methods

Patients

We analyzed the dermoscopic findings of 108 LP lesions from 83 patients who had been clinically and histopathologically diagnosed with LP and were attending our hospital from March 2008 through

Conflicts of interest: The authors declare that they have no financial or non-financial conflicts of interest related to the subject matter or materials discussed in this article.

* Corresponding author. Department of Dermatology, Hallym University Sacred Heart Hospital, 22, Gwanpyeong-ro 170beon-gil, Dongan-gu, Anyang, Gyeonggi-do, 431-796 South Korea.
E-mail address: dermakkh@naver.com (K. Kim).

http://dx.doi.org/10.1016/j.dsi.2016.09.002

February 2015. From the aforementioned patients who had received a confirmed diagnosis of LP, we selected seven patients who had some atypical dermoscopic findings.

Methods

Dermoscopy
All lesions were studied using a handheld dermoscope. Dermoscopic images were taken using a DermLite dermoscopy (Foto, 3Gen, LLC, Dana Point, California, USA), and all lesions were photographed using a Canon Powershot camera (Canon, Tokyo, Japan). Almost all images were obtained using contact dermoscopy with ultrasound gel for immersion.

Evaluation of dermoscopic images
Using computer-saved dermoscopic images, dermoscopic evaluation was performed by two independent dermatologists, who were unaware of the histopathologic findings. Pigmented patterns, vascular patterns, and background color were described according to the depiction of Güngör et al.[8]

Correlation between dermoscopic findings and histopathologic findings
Similar to the dermoscopic assessment, histopathologic evaluation was performed by two independent dermatologists, who were blinded to the dermoscopic findings.

Ethics statement

Written informed consent was obtained from all participants. The procedures were in accordance with the Helsinki Declaration of 1975, as revised in 1983.

Results

Clinical features of patients

Among the 108 LP lesions, seven atypical cases were selected, representing a rate of 6.48%. Seven patients with LP were selected for the study: two men and five women. The clinical characteristics of these patients are summarized in Table 1, and some of them are presented in Figures 1–4. The mean age of LP patients was 53.1 years (range, 31–67 years), and the mean duration of LP was 11.42 months. Of the seven patients, Patients 2 and 3 had acute generalized lichen planus (AGLP), Patient 5 had LP pigmentosus inversus, and Patients 4 and 6 had zosteriform LP pigmentosus.

Analysis of histopathologic features

The histopathologic features of seven patients are summarized in Table 1, and some of them are presented in Figures 1–4. Although the histologic findings differed among the patients, they could all be diagnosed as having LP because of several common findings. All patients had hyperkeratosis, melanin incontinence in the upper dermis, and a lymphohistiocytic bandlike infiltration in the papillary dermis. Liquefaction degeneration of the basal layer was noted in four patients (Patients 1, 2, 3, and 7). The histopathologic results for Patients 5 and 6 showed atrophic pigmented LP (Figure 3). These same patients also had LP in regression phase, whereas the other five had LP in active phase. We were also able to detect the dynamic course of the lesions in Patient 7 (Figure 4).

Analysis of dermoscopic features

All dermoscopic photographs were obtained during the first visit, prior to the histopathologic study. The dermoscopic features of all patients are summarized in Table 2, and some of them are presented in Figures 1–4. First, the pigmented structures were classified into the following patterns: dots/globules, peppering, perifollicular/annular, linear, reticular, cobblestone, and homogen cloud-like. Vascular structures were classified into red globules, red lines, and red dots. Among the seven patients, we observed no cases of WS, a well-known clinical characteristic of LP, but pigmented patterns were seen in all cases of LP, except for that of Patient 7. Among the seven LP patients, vascular patterns were observed in two patients (Patients 1 and 7). We also dermoscopically detected the dynamic course of the disease in Patient 7 (Figure 4). Histopathological findings showed that Patient 7 had neither a pigmented dermoscopic pattern nor melanin incontinence in the upper dermis (Table 1). We showed that pigmented patterns on dermoscopic examination corresponded with melanin incontinence and dermal melanophages.

Discussion

LP is a relatively common chronic inflammatory disease of the skin, mucous membranes, and hair follicles.[11] The clinical characteristics of LP include lesions with fine white-grayish crossing lines and streaks, referred to as WS. Hyperparakeratinization and hyperorthokeratinization are common findings and may clinically coincide with WS.[12]

The performance of dermoscopy has been investigated by many authors. According to evidence-based studies and meta-analysis, its use increases the diagnostic accuracy between 5% and 30% over clinical visual inspection.[13–16] Dermoscopy is widely used in the diagnosis of pigmented and nonpigmented skin tumors.[3,4] However, unlike other skin tumors, there are limited data about the dermoscopic pattern of inflammatory skin disorders, such as LP, plaque psoriasis, pityriasis rosea, and dermatitis. Although the dermoscopic features of common inflammatory dermatoses have not been well studied, several studies have characterized the typical dermoscopic features of LP.[3,8,10,17] In one of those studies,

Table 1 Summary of clinical and histologic data for patients with LP.

No.	Age/sex	Duration	Location	Morphology of lesions	Histologic findings[a]
1	71/M	3 mo	Right lower leg	Irregularly shaped purplish to brown colored patches	A, B, C, D, E, F
2	67/F	3 mo	Chest	Diffuse scattered brownish and dark pigmented macules and patches	A, B, D, E, F
3	56/F	5 mo	Trunk	Scattered brown macules	A, B, D, E, F
4	50/F	3 mo	Left popliteal area	Solitary brownish patch	A, B, C, D, E, F
5	40/F	2 y	Right abdomen	Linearly arranged brownish bandlike macules	A, C, D (focal), E, F (mild)
6	31/F	6 mo	Right neck	Localized linearly arranged brownish macules and patches	A, B, D (focal), E, F
7	46/M	3 y	Right shin	Localized relatively erythematous to brownish plaques on the lower legs with scattered depigmented patches	A, C, D, E, F

F = female; LP = lichen planus; M = male.
[a] A = hyperkeratosis; B = hypergranulosis; C = irregular acanthosis; D = liquefaction degeneration of the basal layer; E = melanin incontinence in upper dermis; F = bandlike dermal lymphohistiocytic infiltration.

Please cite this article in press as: Jung J, et al., Atypical dermoscopic findings in patients diagnosed with lichen planus by histological examination, Dermatologica Sinica (2016), http://dx.doi.org/10.1016/j.dsi.2016.09.002