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Hypertrophic lichen planus versus prurigo nodularis versus lichen simplex chronicus: Does dermoscopy help in the diagnosis

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Background: Hypertrophic lichen planus (HLP) classically involves shin and ankles and characterized by itchy, hyperkeratotic plaques and nodules. Prurigo nodularis (PN), a chronic neurodermatitis, presents as intensely pruritic nodules on the extremities. Lichen simplex chronicus (LSC) is an eczematous condition with thick itchy plaques on the lower legs. Histopathology of HLP, PN and LSC demonstrates epidermal hyperplasia, compact hyperkeratosis and hypergranulosis. Dermis shows inflammatory infiltrate and vertically arranged collagen fibers and increased number of fibroblasts and capillaries in these conditions. Moreover, basal cell degeneration is confined to tips of rete ridges and band like infiltration is conspicuously absent in HLP. Therefore, these conditions mimic each other clinically and histopathologically which makes diagnosis difficult. Hence, there is a need for diagnostic technique to differentiate these conditions.

Objectives: To evaluate the dermoscopic patterns in HLP, PN and LSC and correlate these patterns with histopathological features.

Materials & Methods: This study conducted in Department of Dermatology in S. Nijalingappa Medical College at Bagalkot, South India between January 2015 and July 2015. It was an observational study. Patients with clinical features of HLP, PN and LSC were subjected for a complete history and dermatological examination. Ethical clearance and written informed consent was obtained. The demographic data such as age and gender and clinical variables in terms of site of lesions and disease duration were documented. Polarized dermoscopy with10x magnification with attached digital camera (14 megapixels) was employed in the study. Initially, ultrasound gel was applied on the skin lesions and lesions were observed through the eyepiece of dermoscopy. Data were collected and analyzed. The results were statistically described in terms of frequencies and types of dermoscopic patterns. Lesions were subjected for histopathological examination to confirm the diagnosis.

Results: Totally there were 80 patients in the study. HLP, PN and LSC were observed in 30, 30 and 20 patients respectively. In HLP, mean duration was 17 months. Dermoscopy showed white structures (WS), peripheral striations (PS) and blue-gray globules (BGG) in 100% of patients. Yellow structures (YS) and brown-black globules (BBG) in 60%; comedo-like openings (CLO) in 50%, red globules (RB) in 80% of patients were observed. Out of 30 PN patients, WS in 100%, RB in 100%, YS in 50% and PS in 100% were demonstrated under dermoscopy. Mean duration of PN was 13 months. Yellowish areas were observed only in lesions with lesser duration. In LSC, mean duration was 21 months and WS and RB in clusters were seen in 100% and 80% of patients respectively.WS, PS, BGG, RB, BBG, YS and CLO were corresponding to hyperkeratosis, acanthosis and elongation of rete ridges; melanin in dermis, dilation of blood vessels, spongiosis and hypergranulosis of follicular infundibulum respectively in histopathology.

Conclusion: Dermoscopy in an *in vivo* and non-invasive diagnostic method. HLP, PN and LSC demonstrate specific patterns under dermoscopy which correlate with histopathological changes. Hence dermoscopy improves the clinical recognition of HLP, PN and LSC avoiding skin biopsy. Dermoscopy can be considered as a stethoscope in the daily practice of dermatology.

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