

Dermoscopy of Psoriasis: A Cross Sectional Study

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Abstract

Introduction:

Dermoscopy is a non-invasive tool that aids in the diagnosis of dermatological diseases.

Objectives:

The study aims to evaluate the dermoscopic features of psoriasis in the skin.

Materials and Methods:

All patients clinically diagnosed with psoriasis were enrolled in the study. Dermoscopic findings were studied using a handheld pocket dermoscope (DermLite DL1) with high magnification. Dermoscopic examination used both polarizing and non-polarizing lenses.

Results:

The age of the patients ranged from 12 years to 58 years, and the mean age of presentation was 30 years (+/-12.7 years). There were 52% females and 48% males. In dermoscopy, vascular changes were seen in 90%. Vessel arrangement was seen as uniform in 80% of the cases and non-uniform in 20%. Dotted vessels were seen in 88%, glomerular and comma-shaped vessels in 2%. In 94%, white scales were seen, followed by yellow scales in 2% and mixed types in 4%. The background color was red in 68% of cases, pink in 26%, and brownish in 6%. Pigmentary changes were observed in 16%. Follicular changes were observed in 6%.

Conclusion:

The present study analyzed the characteristic of dermoscopic features in psoriasis. Further studies should be conducted, including inflammatory disorders and their correlation with dermoscopic features.

Key words: Dermoscopy; Psoriasis; Scales; Vessels

Introduction

Dermoscopy is a non-invasive armamentarium of dermatologists and helps to diagnose various dermatoses. It helps to visualize detailed skin structures at 10-fold magnification with a handheld dermoscope and about 300-fold magnification with a videodermoscopy.¹

Multiple studies have shown that dermoscopy increases diagnostic accuracy when analyzing skin growths.^{2,3} Sometimes, the clinical manifestations do not allow the establishment of a definite diagnosis and more than one disease is included in the differential diagnosis. Psoriasis is a chronic inflammatory skin condition

characterized by erythematous scaly patches, commonly over extensor surfaces and the scalp. The study aims to evaluate the dermoscopic features of psoriasis in the skin.

Materials and Methods

All patients visiting the Dermatology outpatient department of Nepal Medical College and Teaching Hospital clinically diagnosed with psoriasis were enrolled in the study period during October 2020–

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September 2021. All patients with psoriasis, both genders and all ages were included in our study. All participants were informed about the procedure and the reason for the photography and were given written informed consent. Patients other than psoriasis who were taking medicines, topical or oral, for the last one month were excluded from the study.

Data from the patient's demographic profile, such as age, gender, and occupation, and clinical details such as cutaneous examination of the entire body, scalp, palms, and soles, mucous membranes, and systemic examination, were collected and entered into a predefined proforma.

A certified dermatologist studied all dermoscopic findings using a handheld pocket dermoscope (Dermlite DL1) with high magnification, having both polarizing and non-polarizing lenses, for the dermoscopic examination. A smartphone was used with the dermoscope to take photographs and record documentation.

Statistical data were analyzed using SPSS version 16. A descriptive analysis and a Chi-square test were used, and $p < 0.05$ was considered statistically significant.

Results

There was a total of 50 patients enrolled in the study. The age of the patients ranged from 12 years to 58 years and was 16% (age below 15 years), 36% (between 16-30 years) and 48% (31 years above). The mean age of presentation was 30 years (standard deviation 12.7 years). There were 52% females and 48% males. The majority of the patients were students by occupation (32%), followed by employed (30%), homemakers (22%), and others (16%) (unemployed and business). The site of involvement in the face was 2%, the scalp 12%, the trunk and extremities 14%, and more than one site of involvement was observed in 72%. Psoriasis lasted more than a year in 65% of people, less than 6 months in 24%, and 7 months to 12 months in 11%. The itching was a prominent symptom among 80% of the patients, and pain in 2% of the rest. 18% did not have symptoms. A family history of psoriasis was present in 8%. The most commonly found lesion was plaques with scales in 92%, followed by 40% papules, and in 12%, more than one type of lesion. Nail involvement was seen in 18% of cases. In dermoscopy, vascular changes were seen in 90%, of which were regular in 82% and irregular in 18%. Vessel arrangement was seen as uniform in 80% of the cases and non-uniform in 20%. Dotted vessels were seen in 88% (Figure 1, 2, 3,4), glomerular vessels (Figure 5), and comma-shaped vessels in 2%. No vascular changes were seen in 10% of the dermoscopic evaluation. White scales were found in 92% (Figures 1-6), 2% by yellow scales and 4% by mixed types. The background color was red in 68% (Figure 1, 3), pink in 26% (Figure 4), and brownish in 6%. Erosion was seen in 28%. Pigmentary changes like globules and dots were observed in 16%. Follicular changes were

observed in 6%. In 2%, other dermoscopic findings like hidden hairs (Figure 6) were found. The results of the chi square test for psoriasis and the site of lesions using dermoscopy were statistically significant ($p < \text{value}.05$).

Discussion

Psoriasis is an inflammatory dermatosis that causes erythematous plaques with silvery white scales. Dermoscopy aids in the diagnosis of psoriasis and helps differentiate it from other inflammatory dermatoses. Dermoscopic features of dotted vessels can be seen in other inflammatory dermatoses; the uniformity and homogenous distribution are characteristic of psoriasis.⁴ In our study, we found dotted types of vessels in 88%, glomerular and comma-shaped vessels in 2%. Uniformly distributed dotted vessels (histologically corresponding to dilated capillaries in regularly elongated dermal papillae) over a light or dull red background along with diffuse white scales (histologically corresponding to parakeratosis)⁶ psoriasis is an inflammatory dermatosis that causes erythematous plaques with silvery white scales. Dermoscopy aids in the diagnosis of psoriasis and helps differentiate it from other inflammatory dermatoses. Dermoscopic features of dotted vessels can be seen in other inflammatory dermatoses; the uniformity and homogenous distribution are characteristic of psoriasis.⁴ Other types of vessel distribution are usually rare in psoriasis, but in a study by Lallas et al., they found characteristic dermoscopic features of psoriasis as dotted or coiled (glomerular) vessels arranged regularly.⁵ In our study, we found dotted types of vessels in 88%, glomerular and comma-shaped vessels in 2%. Glomerular vessels, if present, are highly specific to psoriasis.^{6,7} Uniformly distributed dotted vessels (histologically corresponding to dilated capillaries in regularly elongated dermal papillae) over a light or dull red background along with diffuse white scales (histologically corresponding to parakeratosis).⁶

The presence of red globular rings is a distinguishing feature of psoriasis. This was described by Vazquez-Lopez et al.⁷ If present, the red globules are arranged in irregular circles or rings. Though highly specific, this sign is only seen in a few psoriatic lesions. We found glomerular and comma-shaped vessels in 2%. The presence of light red background color and white superficial scales are two common dermoscopic criteria of plaque psoriasis. In differentiating erythematous dermatoses, the color of the scale is important, as yellow scales are more characteristic of dermatitis.^{5,7} In our study, we found white scales in 92%, yellow scales in 2% and mixed types in 4%. This may be due to concomitant association with seborrheic dermatitis.

In a study, the most common features of the lesions were light red background (43.9%), red dotted vessels (64.2%), regular vessels (46.6%), white scales (77.0%), patchy scale distribution (55.4%), and pigmentary changes (56.8%).⁹ In our study, we found a red color

background in 68%, red dotted vessels in 88%, regular in 82%, and white scales in 92%. A light red background with regularly distributed dotted vessels and diffuse white scales aids in diagnosing psoriasis with 80%–88% specificity and 84.9%–87.8% sensitivity as studied in Caucasian patients. The same features were present in a study, although in lower percentages of 43.9%. Regular vessels were seen in 46.6% compared to 63%–100%, white scale in 77% vs 64.7%–87.5%, and diffuse scale in 25% vs 44.6%–60%. The red background and vessels in patients with darker skin types are not easily visible compared to those with lighter skin types.^{5,9-12} Pigmentary and follicular changes are not a feature of psoriasis.⁴ However, a study showed follicular changes in 20% and pigmentary changes in 56.8%. In our study, we also observed pigmentary changes in 16% and follicular changes in 6%, which is low compared to the study by Maitseo et al.⁹ We also found other dermoscopic features like hidden hairs in 2% of the patients, though this sign has been mentioned in few

studies in the literature.^{13,14} In the follicular variant of psoriasis, there is the presence of perivascular and perifollicular infiltrates. With these changes, the pilosebaceous unit with a proximal hair shaft may look relatively hidden under a white or grey epidermal proliferation.¹⁴ The present study helped discover the characteristic findings of psoriasis with dermoscopy but lacked clinicohistopathological correlation as the study was cross-sectional. Histopathology, though diagnostic, delays reporting and treatment.

Conclusion

Dermoscopy which is easy to perform and aids in clinical diagnosis, is an asset to dermatologists and patients with psoriasis, who are associated with a decreased quality of life. The dermoscopic characteristics of psoriasis may be present in other inflammatory diseases. Therefore, correlation between different inflammatory diseases and dermoscopic features should be investigated in future research.

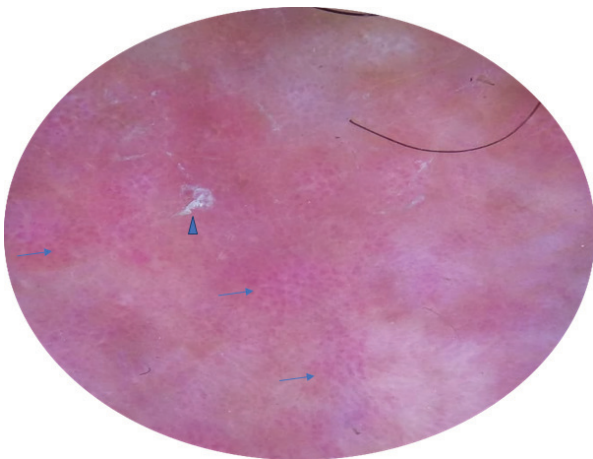


Figure 1 : Dotted vessels are shown in blue arrows and triangle showing scanty white scales

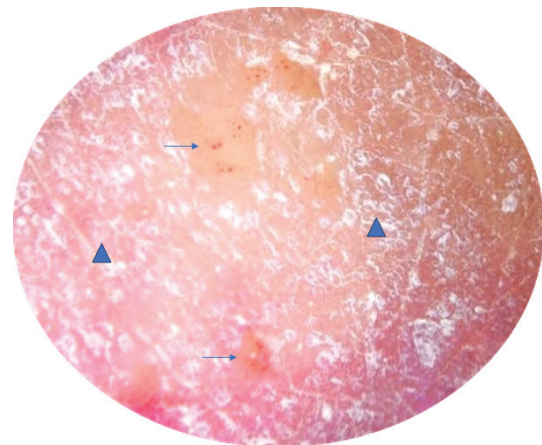


Figure 2 : Diffuse white scaling is shown in triangles and dotted vessels are shown in blue arrow

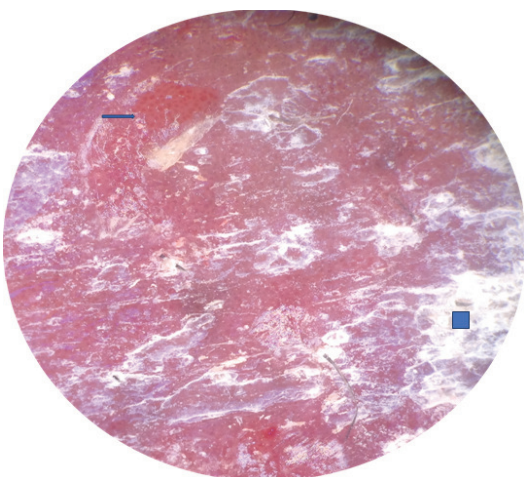


Figure 3 : In a diffuse red background, dotted vessels are shown in blue arrow and whitish silvery scales in blue squares.

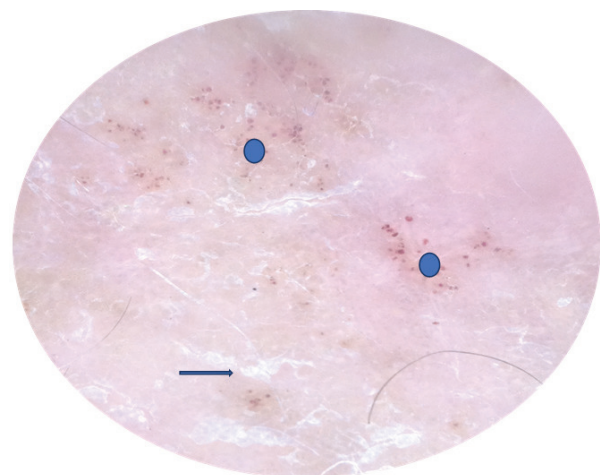


Figure 4 : White silvery scales are shown in arrows, dotted vessels are shown in blue dots in a light pink background



Figure 5 : Glomerular vessels are shown in blue arrows and perifollicular white scaling in blue stars

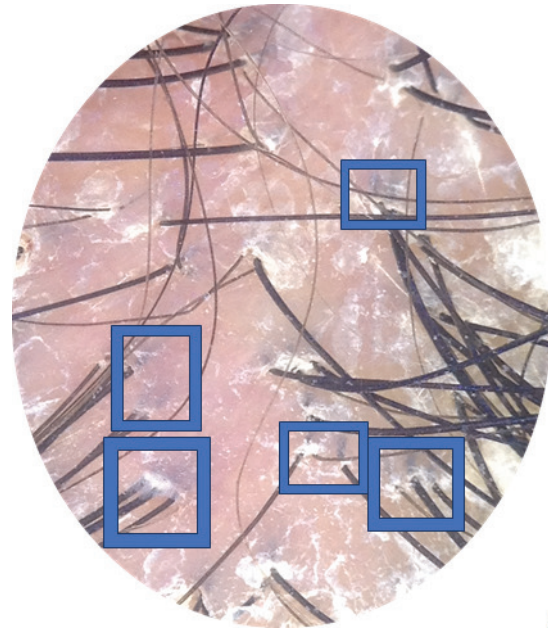


Figure 6 : Hidden hairs are shown in boxes

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