A Cross-Sectional Study to Assess the Role of Dermoscopy in Differentiating Palmar Psoriasis, Chronic Hand Eczema, and Eczema in Psoriatico

Abstract

Background: Overlapping clinical features often make the differentiation between palmar psoriasis, hand eczema, and eczema in psoriatico a difficult task. In such cases, history and biopsy often aid in the diagnosis. Dermoscopy acts as a link between clinical dermatology and dermatopathology. Aim: To study the dermoscopic features in biopsy-proven cases of palmar psoriasis, hand eczema, and eczema in psoriatico. Methods: A 1-year cross-sectional study was conducted using a video dermatoscope, Dinolite premier AM4113ZT, on 60 patients having clinical diagnosis of either of palmar psoriasis, hand eczema, and eczema in psoriatico. Statistical analysis was performed using R i386 3.6.3 software. Results: Among 60 patients, 38 were psoriatics followed by 14 of eczema and 8 of eczema in psoriatico. On dermoscopy, characteristic features of psoriasis lesions were diffuse scaling in 76.3% (29/38), white scales in 60.5% (23/38), and dotted vessels in 76.3% (29/38) along with regular distribution of vessels in 71% (27/38); in hand eczema lesions, diffuse scaling in 78.5% (11/14), white and yellow scales in 57.1% (8/14), and dotted vessels in 78.5% (11/14) along with a patchy distribution of vessels in 57.1% (8/14); in eczema in psoriatico, diffuse scaling in 75% (6/8), white and yellow scales in 62.5% (5/8), and dotted vessels in 87.5% (7/8) along with regular distribution of vessels in 50% (4/8). Conclusion: The various patterns and combinations reflecting specific features give an insight into the cases of palmar psoriasis, hand eczema, and eczema in psoriatico on dermoscopy. However, a study with larger sample size is required to validate the findings of our study. Limitations: Inability to perform a patch test for eczema due to unavailability.

Keywords: Dermoscopy, eczema in psoriatico, hand eczema, histopathology, palmar psoriasis

Introduction

Psoriatico

Palmar plantar psoriasis causes a remarkable social and functional disability. It presents as well-defined erythematous silvery-white scaly patches along with overhanging of scales peripherally on palms, tips of digits, sides of fingers, and extensor surfaces of joints. The hyperkeratotic plaques at times may resemble chronic hyperkeratotic eczema. Involvement of knuckles, hypothenar and thanar eminences favors the diagnosis of psoriasis. Hand eczema is a distressing, disabling common condition and has a poor quality of living due to its effects on dexterity, appearance, and social functioning. It presents as ill to well-defined scaly fissured, occasionally oozy hyperkeratotic patches and plaques proximally or over the center of palms, volar surfaces of fingers. Eczema in psoriatico is a condition, in which patients with preexisting palmpoplantar psoriasis present with coexistent allergic contact dermatitis, with history of or without atopy; on household/environmental and/or occupational exposure of irritants and allergens, they exhibit a type 4 hypersensitivity pattern. This acts as Koebner’s phenomenon, maintaining or triggering palmpoplantar psoriasis. The diagnosis of which can be made on correlating with clinical, histological, and immunohistochemical examination.

The presence of nail pits, joint pains, lesions elsewhere on the body provides a clinical clue when present in patients with palmpoplantar psoriasis, whereas history of contact and precipitatio of lesions provides

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a clue to the diagnosis in eczema patients. However, these clinical clues may be absent occasionally.

Due to overlapping clinical features, the differentiation between palmar psoriasis, hand eczema, and eczema in psoriatico becomes a difficult task. In such cases, histopathological analysis aids in many cases to differentiate the two conditions.\textsuperscript{[6,8,9]}

Dermoscopy is a diagnostic method that utilizes optic magnification to allow the visualization of patterns and structures that are less visible to the naked eye, thus, forming a link between macroscopic dermatology clinically and microscopic dermatopathology.\textsuperscript{[10]}

Hence, we undertook this study to assess dermoscopic features in biopsy-proven cases of palmar plantar psoriasis, hand eczema, and eczema in psoriatico.

**Materials and Methods**

This was a hospital-based observational cross-sectional study carried out from 1\textsuperscript{st} January 2019 to 31\textsuperscript{st} December 2019. Consenting patients, who on history and clinical examination had features of palmar psoriasis, hand eczema, or eczema in psoriatico attending the dermatology outpatient department at our tertiary care hospital, were included after institutional ethical clearance.

Patients with lesions over palms other than psoriasis/eczema and not willing for skin biopsy were excluded.

The sample size was calculated as per the formula $n = \frac{\lambda^2}{w^2}$, where $\lambda$ is the noncentrality parameter of $\chi^2$ test; this can be obtained for given level of significance, power, and degrees of freedom. Whereas, $w$ can be obtained by the formula $w = \sqrt{\frac{1}{n} \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(O_{ij} - E_{ij})^2}{E_{ij}}}$, where $O_{ij}$ is the observed cell count, $E_{ij}$ is the expected cell count, and $r, c$ represent the number of rows and columns of contingency table.

Considering the power of 80\%, level of significance as 5\%, degrees of freedom as 1, we assume $w$ as 0.4. From the above formula, the sample size obtained is 49.055≈ 49. Therefore, the minimum sample size required was 49. However, the total number of patients attending the OPD during the study period was 60; hence, a sample size of 60 was studied.

A 4-mm biopsy over the palms was done under aseptic conditions and sent for histopathological examination to confirm the diagnosis, which was reviewed by a single dermatopathologist. Final diagnosis of palmar psoriasis/hand eczema/eczema in psoriatico was based on clinical and histopathological findings. Patch test for detecting the allergens could not be done due to the unavailability of the patch test kit.

The results were tabulated and analyzed using R i386 3.6.3 software. Chi-square test for categorical variables and ANOVA/Kruskal–Wallis test for continuous variables were used. Fleiss’ kappa was used to check for agreement between the dermoscopy and histopathology. Sensitivity, specificity, positive predictive value, and negative predictive value of the data were calculated.

**Results:** Out of 60 subjects studied, 38 were psoriatics followed by 14 of eczema and 8 of eczema in psoriatico.

Our study showed a male predominance of 63.3\% (38/60). The commonest age group affected in palmar psoriasis group was 60 years and above, in hand eczema group were between 20–29 years, and in eczema in psoriatico group were between 40–49 years. The mean duration of the onset of the lesions was 1.73 years.

In those with palmar psoriasis, there was a significant aggravation of disease in winters in 89.4\% (34/38).

Predominantly nail changes observed in patients of psoriasis were pitting in 55.2\% (21/38) followed by onycholysis in 39.4\% (15/38), and subungal hyperkeratosis in 36.8\% (14/38). There was insignificant nail involvement seen in 14.2\% (2/14) in those with eczema.

The commonest allergens causing hand eczema, according to history, were detergents and pesticides 35\% (5/14) each followed by cement 21.4\% (3/14).

From Table 1, we observed that in the majority of cases, 76.6\% (46/60) had diffuse scaly lesions. The association of white color of scales [Figure 1a,1b and 1c] was statistically
significant in palmar psoriasis, i.e., 60.5% (23/38), whereas the majority of hand eczema cases, i.e., 57.14% (8/14) had a combination of white and yellow scales [Figure 2a, 2b and 2c], followed by only yellow scales [Figure 3a, 3b and 3c] in 28.5% (4/14). Dotted type of vessels was the commonest type in all the three diagnoses, i.e., 78.3% (47/60). Among distribution of vessels, regular and diffuse type [Figure 4a-c] was significantly associated with psoriasis in 71% (27/38) and in eczema in psoriatico was seen in 50% (4/8), whereas the patchy type of distribution [Figure 5a, 5b and 5c] was commonest in hand eczema, i.e., 57.1% (8/14). Glomeruloid/bushy type of vessels [Figure 6a-c] was seen in 15.7% (6/38) in palmar psoriasis cases. Looped (twisted and hairpin) type of vessels [Figure 7a and b] was seen in 7.14% (1/14) in hand eczema cases. Light red background erythema [Figure 8a and b] was significantly associated with

| Table 1: Dermoscopic findings in the study patients as per diagnosis |
|---------------------------------------------------------------|
| Factor | Subcategory | Total (n=60) | Palmar psoriasis (n=38) | Hand eczema (n=14) | Eczema in psoriatico (n=8) | P |
|--------|-------------|--------------|------------------------|-------------------|-------------------------|-----------|
| Distribution of scales | Diffuse | 46 (76.6%) | 29 (76.3%) | 11 (78.5%) | 6 (75%) | >0.99 |
|        | Focal | 14 (23.3%) | 9 (23.6%) | 3 (21.4%) | 2 (25%) | 0.3138 |
| Color of scales | White | 27 (45%) | 23 (60.5%) | 2 (14.29%) | 2 (25%) | 0.0040* |
|        | Yellow | 5 (8.33%) | 0 (0%) | 4 (28.5%) | 1 (12.5%) | 0.1669 |
|        | White+Yellow | 28 (46.67%) | 15 (39.47%) | 8 (57.14%) | 5 (62.5%) | 0.0005* |
| Type of vessels | Dotted | 47 (78.33%) | 29 (76.32%) | 11 (78.57%) | 7 (87.5%) | 0.3138 |
|        | Glomeruloid | 6 (10%) | 6 (15.79%) | 0 (0%) | 0 (0%) | 0.0005* |
|        | Loops/Hair pin | 1 (1.67%) | 0 (0%) | 1 (7.14%) | 0 (0%) | |
|        | Undifferentiated | 6 (10%) | 3 (7.89%) | 2 (14.29%) | 1 (12.5%) | |
| Array of vessels | Regular | 31 (51.67%) | 27 (71.05%) | 0 (0%) | 4 (50%) | 0.0005* |
|        | Patchy | 10 (16.67%) | 1 (2.63%) | 8 (57.14%) | 1 (12.5%) | |
|        | Undifferentiated | 17 (28.33%) | 8 (21.05%) | 6 (42.86%) | 3 (37.5%) | |
|        | Clustered | 2 (3.33%) | 2 (5.26%) | 0 (0%) | 0 (0%) | |
| Background erythema | Yellowish | 3 (5%) | 0 (0%) | 3 (21.43%) | 0 (0%) | 0.0005* |
|        | Bright red | 6 (10%) | 5 (13.16%) | 0 (0%) | 1 (12.5%) | |
|        | Dull red | 5 (8.33%) | 3 (7.89%) | 2 (14.29%) | 0 (0%) | |
|        | Light red | 28 (46.67%) | 25 (65.79%) | 0 (0%) | 3 (37.5%) | |
|        | Yellow + Bright red | 1 (1.67%) | 1 (2.63%) | 0 (0%) | 0 (0%) | |
|        | Yellow + Dull red | 11 (18.33%) | 0 (0%) | 8 (57.14%) | 3 (37.5%) | |
|        | Yellow + Light red | 5 (8.33%) | 4 (10.53%) | 0 (0%) | 1 (12.5%) | |
|        | Undifferentiated | 1 (1.67%) | 0 (0%) | 1 (7.14%) | 0 (0%) | |
| Additional features | Brownish-orange dots | 8 (13.33%) | 1 (2.63%) | 5 (35.71%) | 2 (25%) | 0.1669 |
|        | Loops of vessels | 6 (10%) | 4 (10.53%) | 1 (7.14%) | 1 (12.5%) | |
|        | Yellow clods | 1 (1.67%) | 1 (2.63%) | 0 (0%) | 0 (0%) | |
|        | Yellow-orange clods | 4 (6.67%) | 0 (0%) | 3 (21.43%) | 1 (12.5%) | |

*P<0.05 is considered to be statistically significant.
palmar psoriasis in 65.7% (25/38), yellowish with dull red background in the majority of hand eczema cases, i.e., 57.14% (8/14), and 37.5% (3/8) each of light red and yellowish dull red background in eczema in psoriatico. Additional features of brownish-orange dots/globules in 35.7% (5/14) and yellow-orange clods in 21.4% (3/14) were seen more commonly in hand eczema cases [Figure 9a and b].

Histopathological analysis showed granular layer was ≤2 cell thick in 78.9% (30/38) of palmar psoriasis, ≥3 cell thick in 64.2% (9/14) of hand eczema, and 62.5% (5/8) in eczema in psoriatico [Table 2]. Regular acanthosis with statistical significance was seen in 94.7% (36/38) of palmar psoriasis and 75% (6/8) of eczema in psoriatico, and irregular acanthosis in 78.5% (11/14) cases of hand eczema. Psoriasiform hyperplasia was observed in 81% (31/38) of palmar psoriasis, and irregular hyperplasia in 28.5% (4/14) absent in 64.2% (9/14) of hand eczema cases. Supra-papillary thinning was noted with statistical significance in palmar psoriasis, i.e., 86.8% (33/38), 62.5% (5/8) cases of eczema in psoriatico, whereas in hand eczema, there was no thinning in 92.8% (13/14) cases. The presence of dilated capillaries was statistically significant in palmar psoriasis, i.e., 97.3% (37/38). It was also seen in 87.5% (7/8) cases of eczema in psoriatico, whereas in hand eczema, there was an absence of dilated capillaries in 85.7% (12/14) cases. In the majority, dermal infiltration in palmar psoriasis was of lymphocytes + neutrophils 81.5% and hand eczema had lymphocytes + eosinophils 42.7% and lymphocytes 35.6%, whereas eczema in psoriatico showed the presence of all three types of inflammatory cells in 87.5% cases.

Both dermoscopic provisional diagnosis and confirmatory histopathological diagnosis correlated in 35/38 palmar psoriasis cases, whereas three cases who were given a provisional diagnosis of eczema on dermoscopy turned out to be psoriasis after histopathologic evaluation. All the 14 cases of hand eczema predicted by dermoscopy were confirmed by histopathological evaluation. Three cases having a provisional diagnosis of palmar psoriasis and five
cases of hand eczema by dermoscopy were diagnosed to be eczema in psoriatico after subsequent histopathological evaluation.

Figures 10-12 depict the histological findings in cases of psoriasis, palmar eczema, and eczema in psoriatico, respectively.

**Discussion**

In our study, predominantly diffuse scaling was observed, i.e., 76.3% (29/38) in palmar psoriasis and 78.5% (11/14) in hand eczema, similar to 74.3% (26/35) in palmar psoriasis and 56.4% in hand eczema in the study by Cetinarslan et al.\[11\]. Whereas, focal scaling was observed in 23.6% (9/38) of palmar psoriasis and 21.4% (3/14) in hand eczema in our study near similar to 22.8% (8/35) in palmar psoriasis and 43.6% in hand eczema by Cetinarslan et al.\[11\].

Predominantly white scales were observed in palmar psoriasis 60.5% (23/38) followed by both white and yellow scales in 39.47% (15/38) similar to the findings of 65.7% (23/35) and 34.3% (12/35), respectively, by Cetinarslan et al. study.\[11\]. Whereas in case of hand eczema, our study had a majority of both white and yellow scales in 57.14% (8/14) followed by yellow scales in 28.5% (4/14) and white scales in 14.2% (2/14), which varied significantly from a study done by Cetinarslan et al.\[11\] with predominant yellow scales in 85.5% followed by both in 12.7% and white scales in 1.8%. The study by Errichetti and Stinco\[9\] too showed majorly yellow scales 90.9% (10/11) in eczema. Hence, more studies with a larger sample size are required to verify the significance of these findings. The variation in observation is probably because these studies have not documented or studied the dermoscopic features in context to eczema in psoriatico which must have probably got categorized under eczema.

On dermoscopy, dotted type of vessels was the most common type in both palmar psoriasis and hand eczema with 76.3% (29/38) and 78.5% (11/14), respectively, in our study, but on comparison with study by Cetinarslan et al.,\[11\] the values varied, i.e., 51.4% (18/35) and 58.2% in palmar psoriasis and hand eczema, respectively.

In our study, glomeruloid variant was 15.7% (6/38) seen over palms of the psoriatic patients having established
Table 2: Shows histopathologic/biopsy findings in the study subjects as per diagnosis

| Factor                        | Subcategory | Total (n=60) | Palmar psoriasis (n=38) | Hand eczema (n=14) | Eczema in psoriatico (n=8) | P      |
|-------------------------------|-------------|--------------|-------------------------|-------------------|---------------------------|--------|
| Hyperkeratosis                | Present     | 56 (93.33%)  | 35 (92.11%)             | 13 (92.86%)       | 8 (100%)                  | 0.8376 |
| Parakeratosis                 | Present     | 44 (73.33%)  | 28 (73.68%)             | 11 (78.57%)       | 5 (62.5%)                 | 0.8266 |
| Fibrin globules               | Absent      | 30 (50%)     | 15 (39.47%)             | 10 (71.43%)       | 5 (62.5%)                 | 0.1139 |
|                              | 1+          | 18 (30%)     | 14 (36.84%)             | 2 (14.29%)        | 2 (25%)                   | 0.9225 |
|                              | 2+          | 9 (15%)      | 7 (18.42%)              | 1 (7.14%)         | 1 (12.5%)                 |        |
|                              | 3+          | 3 (5%)       | 2 (5.26%)               | 1 (7.14%)         | 0 (0%)                    |        |
| Plasma mounds                | Absent      | 37 (61.67%)  | 25 (65.79%)             | 7 (50%)           | 5 (62.5%)                 | 0.5747 |
|                              | 1+          | 17 (28.33%)  | 10 (26.32%)             | 4 (28.57%)        | 3 (37.5%)                 | 0.5377 |
|                              | 2+          | 5 (8.33%)    | 3 (7.89%)               | 2 (14.29%)        | 0 (0%)                    |        |
|                              | 3+          | 1 (1.67%)    | 0 (0%)                  | 1 (7.14%)         | 0 (0%)                    |        |
| Neutrophils in stratum corneum| Absent     | 29 (48.33%)  | 24 (63.16%)             | 2 (14.29%)        | 3 (37.5%)                 | -      |
| Granular layer cell thickness| Absent      | 12 (20%)     | 10 (26.32%)             | 1 (7.14%)         | 1 (12.5%)                 | 0.2929 |
|                              | 1           | 10 (16.67%)  | 8 (21.05%)              | 1 (7.14%)         | 1 (12.5%)                 | 0.0265*|
|                              | 2           | 12 (20%)     | 9 (23.68%)              | 2 (14.29%)        | 1 (12.5%)                 |        |
|                              | Absent to 2 | 4 (6.67%)    | 3 (7.89%)               | 1 (7.14%)         | 0 (0%)                    |        |
|                              | 3           | 18 (30%)     | 8 (21.05%)              | 5 (35.71%)        | 5 (62.5%)                 |        |
|                              | 4           | 4 (6.67%)    | 0 (0%)                  | 4 (28.57%)        | 0 (0%)                    |        |
| Acanthosis                   | Absent      | 3 (5%)       | 1 (2.63%)               | 2 (14.29%)        | 0 (0%)                    |        |
|                              | Regular     | 43 (71.67%)  | 36 (94.74%)             | 1 (7.14%)         | 6 (75%)                   | 0.1824 |
|                              | Irregular   | 14 (23.33%)  | 1 (2.63%)               | 11 (78.57%)       | 2 (25%)                   | 0.0005*|
| Spongiosis                   | Absent      | 1 (1.67%)    | 0 (0%)                  | 1 (7.14%)         | 0 (0%)                    |        |
|                              | 1           | 39 (65%)     | 29 (76.32%)             | 7 (50%)           | 3 (37.5%)                 | 0.0510 |
|                              | 2           | 16 (26.67%)  | 8 (21.05%)              | 4 (28.57%)        | 4 (50%)                   | 0.1504 |
|                              | 3           | 4 (6.67%)    | 1 (2.63%)               | 2 (14.29%)        | 1 (12.5%)                 |        |
| Psoriasiform hyperplasia     | Absent      | 19 (31.67%)  | 7 (18.42%)              | 9 (64.29%)        | 3 (37.5%)                 | 0.0059 |
|                              | Regular     | 36 (60%)     | 31 (81.58%)             | 1 (7.14%)         | 4 (50%)                   | 0.0005*|
|                              | Irregular   | 5 (8.33%)    | 0 (0%)                  | 4 (28.57%)        | 1 (12.5%)                 |        |
| Supra-papillary thinning     | Present     | 39 (65%)     | 33 (86.84%)             | 1 (7.14%)         | 5 (62.5%)                 | 0.0005*|
| Mitotic figures              | Present     | 43 (71.67%)  | 30 (78.95%)             | 7 (50%)           | 6 (75%)                   | 0.1359 |
| Dilated capillaries          | 46 (76.67%) | 37 (97.37%)  | 2 (14.29%)              | 7 (87.5%)         | 0.0005*                   |        |
| Perivascular infiltration    | 59 (98.33%) | 38 (100%)    | 13 (92.86%)             | 8 (100%)          | 0.3758                    |        |
| Deep infiltration            | 13 (21.67%) | 6 (15.79%)   | 6 (42.86%)              | 1 (12.5%)         |                           | 0.0860 |

*P<0.05 is considered to be statistically significant

Figure 12: Histologic findings in case of eczema in psoriatico showing parakeratosis (blue star), orthohyperkeratoses (black star), absent granular layer (yellow star), dilated capillaries (red star), moderate to severe spongiosis (purple star) with regular psoriasiform hyperplasia (green star) on hematoxylin and eosin stain on 10× magnification

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who reported the presence of glomeruloid variant in 7.3% of hand eczema and absent in palmar psoriasis, thereby, a need of more studies to study this variation observed by us.

The hair pin/looped type of vessels in hand eczema was seen in 7.1% (1/14) in our study which varies with 1.8% by Cetinarslan et al.[11] This feature was not observed in palmar psoriasis in both our study and the study by Cetinarslan et al.[11]

Undifferentiated vessels [Figure 13] (capillaries not conforming to looped, lines, or glomeruloid morphology) in our study were seen in 7.89% (3/38) of palmar psoriasis and 14.2% (2/14) in hand eczema, which was lesser in number compared to 31.4% (11/35) and 16%, respectively, by Cetinarslan et al.[11]

Regular distribution of vessels was seen in 71.05% (27/38) cases of palmar psoriasis in our study with a high incidence compared to 40% (14/35) by Cetinarslan et al.[11] whereas erythroderma or chronic plaque psoriasis which evolved into erythroderma and was absent in those with eczema. This is in contrast with the study by Cetinarslan et al.[11]
the patchy distribution of vessels in palmar psoriasis was seen in 2.63% (1/38) in our study similar to 2.9% (1/35) by Cetinarslan et al.\cite{11}

The patchy distribution of vessels was more common in hand eczema, i.e., 57.14% (8/14), in our study similar to 47.3% by Cetinarslan et al.\cite{11} while a regular array of vessels is 0% in our study but 3.6% by Cetinarslan et al.\cite{11}

Light red background erythema was seen in 65.7% (25/38) of palmar psoriasis, which was nearly similar to the study by Cetinarslan et al.\cite{11} i.e., 48.6% (17/35), whereas yellowish + dull red background in hand eczema in our study was 57% (8/14) with a higher incidence compared to Cetinarslan et al.\cite{11} i.e., 36.4% (20/55).

Additional features observed in the form of brownish-orange dots in those with eczema 35.7% (5/14) in our study were identical to their occurrence in 34.5% cases of eczema in the study by Cetinarslan et al.\cite{11} and they greatly varied with the study by Errichetti and Stinco\cite{8}, i.e., 72% (8/11). The presence of yellow-orange cloids in our study showed lower occurrence, i.e., 21% (3/14), compared to the high incidence values of 43% (24/55) by Cetinarslan et al.\cite{11} and 63% (7/11) by Errichetti and Stinco.\cite{8} These features give a clue to diagnose hand eczema and, hence, need to be further studied.

Overlapping dermoscopic features, i.e., diffusely distributed white and yellow scaling with the regular dotted type of vessels over background erythema of light red to yellowish dull red, was observed in eczema in psoriatico. However, due to the paucity of studies regarding dermoscopic findings in eczema in psoriatico, the features observed need to be further studied and validated.

Table 3 depicts findings of various studies on histological features in palmar psoriasis and hand eczema along with those in our study. Psoriasiform hyperplasia in palmar psoriasis showed significant regular hyperplasia with a high incidence in our study, i.e., 81.5% (31/38), as compared to 50% (8/16) in the study by Park et al.\cite{12} Irregular hyperplasia was absent in our study but seen in 43% (7/16) by Park et al.\cite{12} Regular and irregular hyperplasia in hand eczema were 7.14% (1/14) and 28.5% (4/14) in our study, which were much lesser than a study by Park et al.,\cite{12} i.e., 35% and 50%, respectively.

Eczema in psoriatico had 62.5% (5/8) parakeratosis in our study, which differed from the study by Kolesnik et al.\cite{7} who had a high incidence of 100% (33/33). Neutrophils and plasma mounds in stratum corneum were 50% (4/8) and 37% (3/8) in our study, whereas in Kolesnik et al.’s study,\cite{7} they were 76% (25/33) and 21% (7/33) depicting a higher incidence. Severe spongiosis with spongiotic vesicles was seen in 12.5% (1/8) in our study lesser than that by Kolesnik et al.,\cite{7} showing 36% (12/33). This was probably due to the larger sample size. Features of regular and irregular acanthosis in our study were 75% (6/8) and 25% (2/8) but in Kolesnik et al.’s study,\cite{7} they were 52% (17/33) and 0%, respectively. Incidence of hypogranulosis, suprapapillary thinning, and dilated capillaries in our study were 37.5% (3/8), 62.5% (5/8), and 87.5% (7/8), respectively, comparable with the study by Kolesnik et al.\cite{7} where there were seen in 33% (11/33), 85% (28/33), and 99% (33/33), respectively.

Contact allergy in patients with palmar psoriasis acts as Koebner’s phenomenon and exhibits a type 4 hypersensitivity pattern,\cite{11} which may possibly result in moderate to severe spongiosis coexisting with more or less preserved histologic features such as hypogranulosis, suprapapillary thinning, and regular psoriasiform hyperplasia in cases of eczema in psoriatico on histologic examination.

**Conclusion**

On dermoscopy in our study, characteristic features of palmar psoriasis were diffuse white scaling, dotted type of vessels in a regular distribution over a light red background. In hand eczema, diffusely distributed white and yellow scaling with dotted type of vessels in a patchy vascular arrangement over a yellowish dull red background was noted along with additional features of brownish-orange dots/globules and yellow-orange cloids, whereas in eczema in psoriatico, overlapping dermoscopic features of the two, i.e., diffusely distributed white and yellow scaling with regular dotted type of vessels over background erythema of light red to yellowish dull red, were noted. Hence, dermoscopy may act as a useful tool in providing a clue to the diagnosis of palmar psoriasis, hand eczema, and eczema in psoriatico as observed in our study.

However, more studies with a larger sample size will help to validate the specific features in each of these conditions.

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Table 3: Comparison of histopathology findings of palmar psoriasis and hand eczema in literature

| Histopathology findings         | Our study | Rao et al.[13] | Caesinaro et al.[14] | Hesari et al.[15] | Aydin et al.[16] |
|---------------------------------|-----------|----------------|----------------------|-------------------|------------------|
|                                 | Pso%      | Ecz%           | Pso%                 | Ecz%              | Pso%             | Ecz%             |
|                                 | (n=38)    | (n=14)         | (n=31)               | (n=24)            | (n=36)           | (n=16)           |
| Parakeratosis                   | 73.6      | 78.5           | 90.3                 | 62.5              | -                | -                |
| Fibrin globules                 | 60.5      | 28.4           | 38.7                 | 33.3              | 81.8             | 95               |
| Plasma mound                    | 34.2      | 50             | -                    | -                 | 72.2*            | 100*             |
| Neutrophils in Str. corneum     | 63.1      | 14.2           | 6.9                  | -                 | 45.5             | 35               |
| Hypogranulosis                  | 78*       | 35.7*          | 22.6                 | 4.2               | 90.9             | 80               |
| Acanthosis                      |           |                |                      |                   |                  |                  |
| Regular                         | 94.7*     | 7.14*          | 27.6                 | 9.1               | 68.5*            | 35*              |
| Irregular                       | 2.6       | 78.5           | 72.4                 | 90.9              | 31.5             | 65               |
| Spongiosis                      |           |                |                      |                   |                  |                  |
| Mild                            | 76.3      | 50             | 35.5                 | 29.2              | -                | 44.4             |
| Moderate                        | 21        | 28.5           | 16.1                 | 20.8              | -                | -                |
| Supra-papillary thinning        | 86.8*     | 7.1*           | 51.7*                | 22.7*             | -                | 72.2*            |
| Mitotic figures                 | 78.9      | 50             | -                    | -                 | -                | 30.6             |
| Dilated capillaries             | 97.3      | 14.2           | 38.7                 | 50                | 22.7*            | 30               |
| Dermal infiltrate               | 100       | 92.8           | 84                   | 75                | -                | -                |

*P<0.05 is considered to be statistically significant for that study parameter across the above-mentioned studies

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Conflicts of interest
There are no conflicts of interest.

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