

## ORIGINAL ARTICLE

# A STUDY ON COMPARISON OF DERMOSCOPIC PATTERNS ASSOCIATED WITH PLAQUE PSORIASIS AND PITYRIASIS ROSEA IN A TERTIARY CARE HOSPITAL OF PUNE CITY

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## ABSTRACT

**Introduction:** Plaque psoriasis (PP) and pityriasis rosea (PR) are common inflammatory skin diseases. Their characteristic appearance allows a clinical diagnosis in a high proportion of patients. This present study was conducted with an objective to determine and compare the dermoscopic patterns associated with PP, and PR to explore the utility of dermoscopy in the examination and diagnosis of these diseases.

**Methodology:** The present study was a descriptive study conducted in the Department of Skin & V.D. where all PP and PR patients were subjected to general physical examination, cutaneous examination including nail, hair, genitalia, mucosae and dermoscopic examination to note down associated diseases and HIV. Findings were documented in the proforma.

**Results:** There was female preponderance (58%) while male patients constituted 42%. Dotted vessels in PP were most commonly arranged in a regular distribution (44/50; 88%) and PR (8/12; 66.7%). In PP (29/50; 58%) vessels were associated with dull red background whereas in PR dotted vessels were mostly associated with a yellowish background colour (13/20; 65%).

**Conclusion:** Plaque psoriasis (PP) and Pityriasis Rosea (PR) reveal specific dermoscopic patterns that may aid the clinical diagnosis. Besides its diagnostic purposes, dermoscopy might provide a useful tool for the evaluation of treatment outcome in patients with PP such as early detection of treatment response.

**Keywords:** Plaque Psoriasis, Pityriasis Rosea, Dermoscopic pattern

## INTRODUCTION

The papulosquamous skin disorders are a heterogeneous group of disorders comprising the largest group of diseases seen by a dermatologist. The nosology of these disorders is based on a descriptive morphology of clinical lesions that is characterized by scaly papules and plaques.<sup>1</sup> There is an overlap in morphology and distribution of lesions that leads to difficulty in diagnosis. The papulosquamous disorders are complex to diagnose, because of the difficulty in identification and may resemble a similar disorder of the group. Hence these lesions are commonly misdiagnosed.<sup>2</sup>

Plaque psoriasis (PP) and pityriasis rosea (PR) are common inflammatory skin diseases. Their characteristic appearance allows a clinical diagnosis in a high proportion of patients.<sup>3-6</sup> However, unusual presentations at times do exist and may cause difficulties in the differentiation among these entities.<sup>3-6</sup> In those cases, histopathology contributes significantly to the accurate diagnosis.<sup>7</sup>

Dermoscopy is continually gaining appreciation in the field of general dermatology, while recent data indicate that it might also be profitable in assessing the outcome and adverse effects of various treatments.<sup>3-6</sup> By revealing morphologic structures invisible to the unaided eye, dermoscopy improves cutaneous clinical examination. The expansion of dermoscopy has been facilitated by the development of hand-held dermatoscopes using polarized light, which are highly portable, do not require skin contact or immersion fluid, and allow a fast screening of numerous lesions.<sup>4</sup>

This present study was conducted to determine and compare the dermoscopic patterns associated with PP, and PR to explore the utility of dermoscopy in the examination and diagnosis of these diseases.

## METHODOLOGY

The present study was a descriptive study conducted in the Department of Skin & V.D. of Padmashree

Dr. D.Y. Patil Medical College and Hospital and Research Centre, Pimpri, Pune. A total of 100 patients were included in the study from July 2014 to September 2016.

This study was conducted after obtaining Institute Ethics Committee Clearance. A written and informed consent was taken from all individuals selected for the study. The questionnaires were completed anonymously, after assuring the responders about the confidentiality of the data and explaining the objectives of the research. Those cases who were recently developed lesion of PP and PR were consecutively enrolled in the study. Those cases who had all other skin lesions and diseases with similar clinical features like Lupus Erythematosus, dry forms of Eczema, Seborrheic dermatitis, Syphilis and some superficial types of fungal infections are to be excluded from the study. All patients were subjected to general physical examination, cutaneous examination including nail, hair, genitalia, mucosae and systemic examination to note down associated diseases and HIV. Findings were documented in the proforma.

The new version of dermoscope which polarizes light and does not require a contact medium and direct physical contact between the optical lens and skin is used for dermoscopic examination. The results of the study were tabulated, analyzed and discussed. Simple proportions and percentages for comparing different variables like age, sex etc was used. Final outcome was expressed as the percentage of papulosquamous disorders among the study group as a whole and as the percentage of individual papulosquamous disorders.

## RESULTS

A hospital based study was conducted among 100 patients to further our information about various dermoscopic patterns characteristic of papulosquamous skin disorders. As shown in the table, majority of the patients (22%) were in the age group of 61-70 years followed by 19% in the age group of 51-60 years. There was female preponderance (58%) while male patients constituted 42% of the study group. The M:F ratio was 1:1.38. It was seen that

On the basis of vascular morphology (dotted, linear, dotted+linear), Dotted vessels were seen in all cases of PP and PR. On the basis of vascular arrangement (regular, in clusters, patchy, peripheral, in rings), Dotted vessels in PP were most commonly arranged in a regular distribution (44/50; 88%) and PR (8/12; 66.7%), vessels were mostly associated in peripheral arrangement of scales and patchy distribution respectively.

Dermoscopic evaluation was done on the basis of background colour (dull red, i.e. intense red colour,

light red, i.e. fading red colour, yellowish) and scale colour (white, yellow, white + yellow). In PP (29/50; 58%) vessels were associated with dull red background whereas in PR dotted vessels were mostly associated with a yellowish background colour (13/20; 65%).

**Table 1: Distribution of patients according to their age and gender**

Variable	Cases (‰)(N=62)
<b>Age group (in years)</b>	
21-30	7 (11.3)
31-40	8 (12.9)
41-50	11 (17.7)
51-60	12 (19.4)
61-70	14 (22.6)
>70	10 (16.1)
<b>Gender</b>	
Male	26 (41.9)
Female	36 (58.1)

**Table 2: Distribution of Vascular morphology and arrangement**

Variable	Plaque Psoriasis (‰) (n=50)	Pityriasis Rosea (‰) (n=12)
<b>Vascular morphology</b>		
Dotted	50 (100)	12 (100)
Linear	0	0
Dotted + Linear	0	0
<b>Vascular arrangement</b>		
Regular	44 (88)	3 (25)
In clusters	1 (2)	1 (8.3)
Patchy	1 (2)	8 (66.7)
Peripheral	0	0
In rings	4 (8)	0

**Table 3: Distribution of background and scale colour**

Variable	Plaque Psoriasis (‰) (n=50)	Pityriasis Rosea (‰) (n=12)
<b>Background colour</b>		
Dull red	29 (58)	3 (25)
Light red	20 (40)	1 (8.3)
Yellowish	1 (2)	8 (66.7)
<b>Scale colour</b>		
White	36 (72)	10 (83.4)
Yellow	0	1 (8.3)
White+Yellow	2 (4)	1 (8.3)

**Table 4: Scale distribution among the papulosquamous diseases**

Scale Distribution	Plaque Psoriasis (‰)(n=50)	Pityriasis Rosea (‰) (n=12)
Patchy	7 (14)	0
Peripheral	2 (4)	8 (66.6)
Diffuse Central	23 (46)	2 (16.7)
Central	6 (12)	2 (16.7)
Wickham Striae	0	0

On the basis scale colour, Dotted vessels in PP (29/50; 58%) and PR (10/12; 83.3%) were mostly associated with white scales.

On the basis of scale distribution (patchy, peripheral, diffuse and central), Vessels in PP (23/50; 46%) appeared more commonly in diffuse distribution. In PR (8/12; 66.7%) vessels appeared more commonly in patchy and peripheral distribution respectively.

## DISCUSSION

The papulosquamous skin disorders are a heterogeneous group of disorders comprising the largest group of diseases seen by a dermatologist. The nomenclature of these disorders is based on a descriptive morphology of clinical lesions that is characterized by scaly papules and plaques.<sup>1</sup> There is an overlap in morphology and distribution of lesions that leads to difficulty in diagnosis. The papulosquamous disorders are complex to diagnose, because of the difficulty in identification and may resemble a similar disorder of the group. Hence these lesions are commonly misdiagnosed.<sup>2</sup>

Distinct histopathological features and clinical correlation gives a conclusive diagnosis. Specific histopathological diagnosis is important to distinguish these lesions as the treatment and prognosis varies significantly. Given that PP and other inflammatory skin diseases may sometimes be difficult to differentiate clinically, a more detailed determination of specific dermoscopic patterns of inflammatory skin diseases could be a valuable addition for the clinical assessment. The present study was undertaken to further our knowledge about various dermoscopic patterns characteristic of papulo-squamous skin disorders.

In the present study, dotted vessels were seen in all cases of PP and PR. Dotted vessels in PP were most commonly arranged in a regular distribution (44/50; 88%) and PR (8/12; 66.7%), vessels were mostly associated in peripheral arrangement of scales and patchy distribution respectively. Dermoscopic patterns of red dots or globules arranged in a homogeneous, regular or ring like fashion have been described as common findings in PP.<sup>7-9</sup> However, our and previous studies showed that dotted vessels are not limited to PP but occur at variable frequency in several other inflammatory and neoplastic lesions.<sup>4,10,11</sup> Accordingly, dotted vessels as the only dermoscopic criterion are insufficient to distinguish between these different entities accurately.

Besides the vascular morphology, the vascular arrangement and specific dermoscopic clues have been judged to be of equal importance in the differential diagnosis of non-pigmented skin lesions.<sup>8</sup> This is further supported by our study, which revealed signifi-

cant differences with respect to the distribution of vessels or additional criteria among PP and PR. In detail, the combination of regularly distributed dotted vessels over a light red background associated with diffuse white scales was highly predictive of PP. On the other hand, although red globular rings (i.e. red globules arranged in irregular circles or rings) as described previously by Vázquez López et al<sup>9</sup> represented a highly specific feature for PP. In our study, this pattern was seen in only a minority of cases (8%) in our series. Therefore, the value of this pattern in the diagnosis of PP remains to be elucidated further.

Our study furthermore confirms preliminary observations on the dermoscopic patterns of PR.<sup>9,12</sup> As such, PR was typified by peripheral scaling (so called collarette scales) around a diffuse and structureless yellowish centre, although dotted vessels were seen in all our cases of PR, they were generally much less evident and fewer in number compared with PP or dermatitis.

It still remains to be determined how much dermoscopy may aid the differential diagnosis of tumours from PP this question seems particularly important when facing patients with diffuse PP, who received past psoralen plus ultraviolet A therapy and are at increased risk for nonmelanoma skin cancer.<sup>13</sup> With regard to this Pan et al<sup>14</sup> introduced a dermoscopic diagnostic model for differentiating solitary psoriatic plaques from intraepidermal carcinoma (IEC) and superficial basal cell carcinoma (sBCC). They concluded that red dots, homogeneous vascular pattern and light red background were significant dermoscopic features for psoriasis, yielding a diagnostic probability of 99% if all three features were present. In contrast, clustered vessels, glomerular vessels and hyperkeratosis yield a 98% probability for the diagnosis of IEC, whereas four of six described criteria (i.e. scattered vascular pattern, arborizing microvessels, telangiectatic or atypical vessels, milky pink background, and brown dots/globules) achieved a diagnostic probability of 99% for sBCC.

## CONCLUSION

Plaque psoriasis (PP) and Pityriasis Rosea (PR) reveal specific dermoscopic patterns that may aid the clinical diagnosis. Certain combinations of dermoscopic features can reliably predict the diagnosis of PP. Besides its diagnostic purposes, dermoscopy might provide a useful tool for the evaluation of treatment outcome in patients with PP such as early detection of treatment response. The feasibility of our observations in clinical practice, as well as in studying the course of PP, warrants, however, further clinical studies.

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