

## **Research Article**

### **A Clinicopathological study of Psoriasis**

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**Abstract:** Papulosquamous group of skin lesions have certain common clinical presentations and lead to confusion in diagnosis. We undertook this study to analyze the histomorphological findings of psoriasis, the most common and important papulosquamous lesions of skin in detail, and to correlate the clinical findings with histomorphological features. Biopsy of clinically diagnosed/suspected cases of psoriasis lesions were performed in the department of dermatology and sent to the department of pathology in 10% formalin. The specimen obtained were subjected for tissue processing after fixation. Tissue sections are prepared from paraffin block and stained with haematoxylin and eosin, followed by microscopic examination. A total of 22 cases were studied. Lesions occurred in all age groups but were common in young and middle aged. Males were commonly affected. There is an overlap in morphology and distribution of these lesions leading to difficulty in diagnosis. Distinct histopathological features and clinical correlation gives a conclusive diagnosis. Specific histomorphological diagnosis is important to distinguish these lesions as the treatment and prognosis varies significantly from other lesions with similar clinical presentation.

**Keywords:** Papulosquamous lesions, Psoriasis, Histopathology

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#### **INTRODUCTION**

According to literature, word (Greek.) '*Psora*' means itch [1]. Psoriasis (Gk. psora, the itch) [2] is a chronic papulosquamous disease of unknown aetiology with unpredictable course of remission and exacerbation. Because the clinical presentation of psoriasis is varied, many times the definitive diagnosis depends on the histological examination. However both genetic and environmental factors are thought to play a role in initiation and progression of disease[3].

The term psoriasis was coined by Ferdinand Von Hebra in 1841. It has been described by Hippocrates. It was initially felt to be a communicable disease or a punishment for sin or behaviour[4].

Prevalence rate of psoriasis is 0.1 to 3% world-wide [5]. Usually appears in 2<sup>nd</sup> and 3<sup>rd</sup> decade of life. Mean age in males is 29 years and in females is 27 years[5,6].

The other common lesions included in papulosquamous disease of skin include lichen planus, followed by pityriasis rosea, parapsoriasis, pityriasis rubra pilaris and lichen nitidus. Overlapping of clinical

features is very common among these conditions and histopathological study is often conclusive in this group of conditions.

The objective of the study was to correlate the clinical findings with histomorphological features of Psoriasis.

#### **METHODOLOGY**

The study includes clinically diagnosed / suspected and untreated case Psoriasis attending the Department of Dermatology, K.V.G Medical College and Hospital, Sullia, D.K., Karnataka during a period of 2 years. Biopsy of clinically diagnosed/suspected cases of psoriasis lesions were performed after obtaining brief history and detailed clinical examination and were sent for histopathologic study. Haematoxylin and eosin stained sections were studied for various histological features and analyzed.

#### **RESULTS**

Psoriasis is more common in males all over the world. Studies from different parts of the world including the present study show a male preponderance. In the present study male to female ratio being 2.33,

with 17 out of 22 cases accounting for more than 75% of cases. Table 1 shows comparison of M:F ratio in different studies.

Psoriasis is common in younger age groups. Most of the cases studied were between 20-40 years, third decade in particular.

Scaly plaque, erythema and papules were the commonest lesion found, predominantly involving leg, trunk, back and arm (Fig. 1 & 2).

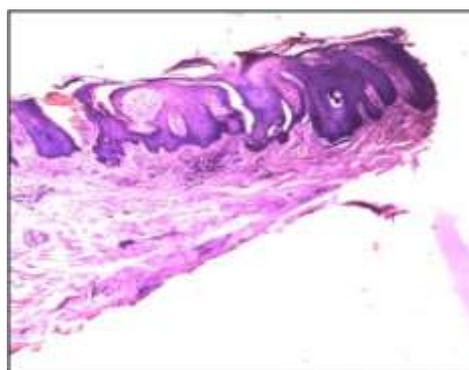
Most common histologic findings were acanthosis, hyperkeratosis, parakeratosis and psoriasiform hyperplasia. Suprapapillary thinning, micro munro abscess was seen in a few cases. Dermal inflammation and vascular changes were seen in many cases.

**Table 1: Comparison of Sex Incidence – Psoriasis**

Study	Year	Male : Female
Kaur et al [12]	1986	2.3
Alexander et al [13]	2001	7.7
Yang et al [14]	2005	4.8
Younas and Haque [9]	2004	1.92
Yadav and Dogra [15]	2010	2.46
Present study	2013	2.33



**Fig. 1&2: Photograph showing scaly plaque, erythematous and papular lesions**



**Fig. 3: Club shaped rete ridges and thin suprapapillary plates. [Haematoxylin & Eosin, 10x]**

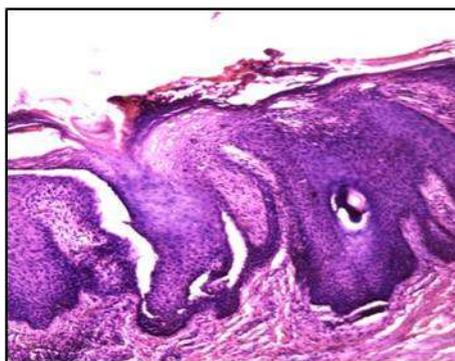


Fig. 4: Micromunro abscess[Haematoxylin & Eosin, 20x]

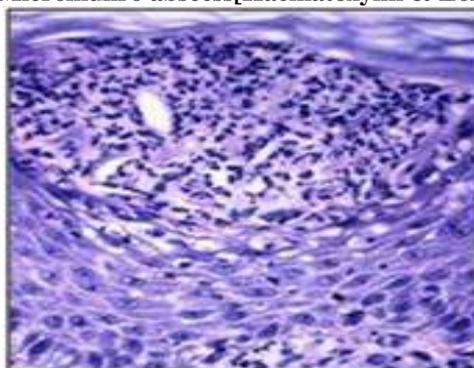


Fig. 5: Spongiform pustule of Kogoj [Haematoxylin & Eosin, 40x]

**DISCUSSION**

The skin has a limited number of reaction patterns with which it can respond to various pathological stimuli and clinically different lesions may show similar histologic patterns. Therefore to obtain the precise diagnosis of a skin biopsy, it should be accompanied by all relevant clinical details. The interpretation of skin biopsies requires the identification and integration of two different morphological features, the tissue reaction pattern and pattern of inflammation. The experienced dermatopathologist sees these aspects

simultaneously, integrating and interpreting the findings and arrives at a diagnosis [7].

Hence the present study was undertaken to study the histopathological features of Psoriasis, the commonest papulosquamous lesion of skin to correlate with their clinical presentation.

Histological changes and various clinical patterns in histopathologically diagnosed cases of Psoriasis observed in the study are shown in Table 2 & 3 respectively.

**Table 2: Histological changes observed in Psoriasis**

Histological Changes	No. ofcases	Percentage
<b>Epidermal changes</b>		
Hyperkeratosis	17	77.27
Parakeratosis	16	72.72
Acanthosis	19	86.36
Psoriasiform hyperplasia	16	72.72
Suprapapillary thinning	9	40.90
Spongiform pustule	1	4.54
Munro micro abscesses	5	22.72
Hypogranulosis	5	22.72
<b>Dermal changes</b>		
Papillary edema	6	27.27
Vascular changes	19	86.36
Dermal inflammation	18	81.81

**Table 3: Clinical pattern in histopathologically diagnosed psoriasis**

Sl. No.	Papule	Scaly Plaque	Flat topped papule/plaque	Scaly patches /Macule	Erythema	Follicular Papule	HKT papule/plaque	Thin Scales	Site
1	-	+	-	+	+	-		+	Leg
2	-	+	-	+	+	+	-	+	Trunk
3	-	+	+	-	+	-	-	+	Trunk
4	-	+	-	-	+	-	+	+	Arm
5	+	+	-	+	+	-	+	-	Elbow
6	-	+	+	-	+	-	+	+	Leg
7	-	+	-	+	+	-	+	-	Back
8	+	-	+	-	-	-	+	-	Forearm
9	+	+	-	+	+	-	+	-	Knees
10	-	+	-	-	+	-	-	+	Leg
11	+	+	-	-	+	-	+	+	Leg
12	+	+	+	-	+	-	+	+	Trunk
13	-	+	-	+	+	-	+	+	Arm
14	-	+	-	-	+	-	+	-	Leg
15	-	+	-	-	-	-	+	+	Back
16	+	-	+	-	+	-	-	-	Trunk
17	-	+	-	+	+	-	-	+	Leg
18	-	-	-	+	+	-	-	+	Trunk
19	-	+	-	-	+	-	+	+	Arm
20	+	+	-	-	+	-	-	-	Leg
21	-	+	-	-	+	-	-	-	Back
22	-	+	-	-	+	-	-	-	Knee
	7	19	5	8	20	1	12	13	

Schon MP and Boehncke WH [8] have stated that patients with psoriasis typically have sharply demarcated chronic erythematous plaques covered by silvery white scales, which most commonly appear on the elbows, knees, scalp umbilicus and lumbar area. In the present study most common sites of lesion were extremities followed by trunk and back.

In the present study of 22 cases of psoriasis, hyperkeratosis was seen in 17 cases (77.27%), parakeratosis in 16 cases (72.72%), acanthosis in 19 cases (86.36%), psoriasiform hyperplasia in 16 cases (72.72%), suprapapillary thinning in 9 cases (40.90%) (Fig. 3), Munro microabscess in 5 cases (22.72%) (Fig. 4), spongiform pustule in 1 case (4.54%) (Fig. 5) and hypogranulosis in 5 cases (22.72%). Dermal inflammation in 18 cases (81.81%), vascular changes in 19 cases (86.36%), and papillary edema in 6 cases (27.27%) (Table 2).

Younas M and Haque A [9] in their study observed, hyperkeratosis, elongated rete ridges and acanthosis in 100 % cases, parakeratosis in 78.5%, micro munro abscesses in 71.4% and spongiform pustules in 42.8%. Attenuated or absent granular layer, suprapapillary thinning, exocytosis and telangiectatic vessels were observed in majority.

Gordon M and Johnson WC [10], observed 100 psoriatic lesions which commonly showed parakeratosis, Munro micro abscesses, a diminished or absent granular layer, acanthosis, papillomatosis, tortuosity and dilatation of capillaries, edema, and chronic inflammation in the upper corneum. Vacuolization, disruption and hydropic degeneration of the basal cells above the tips of the dermal papillae associated with exocytosis of polymorphonuclear leukocytes and spongiosis were found to be important features which have not been generally emphasized.

In present study of 22 cases of Psoriasis were studied, 21 cases had clinical diagnosis/ differential diagnosis of Psoriasis. 2 cases had differential diagnosis of Lichen planus. 4 cases had a differential diagnosis of lichen simplex chronicus, 2 cases had a differential diagnosis of eczema and one case each had a clinical differential diagnosis of parapsoriasis, contact dermatitis, seborrheic dermatitis and one was diagnosed as pyodermagangrenosum.

Braun Falco O *et al.* [11], in their study stated that, the clinical differential diagnosis between seborrheic dermatitis and psoriasis vulgaris of the scalp can be difficult. The histopathological substrate within the epidermis is characterized in psoriasis by dermatitis-like and in seborrheic dermatitis by psoriasis-like

alterations. Therefore, in some cases a definite histopathological diagnosis could not be made.

Often clinical manifestations are misleading in these conditions. While some cases are clinically suspicious others may present differently.

In present study, 5 cases which were clinically diagnosed as/ suspicious of psoriasis, 4 cases were diagnosed as Lichen planus and 1 case was diagnosed as Parapsoriasis histopathologically, emphasizing overlapping of clinical features in this group of conditions.

## CONCLUSION

There is an overlap of both clinical pattern and distribution of lesions of Psoriasis the most common papulosquamous skin disorders, which often makes clinical diagnosis difficult.

Recognition of these commonly encountered cutaneous problems depends upon the familiarity of clinical presentation and the diagnosis can be confirmed with histopathology. The pathologist's ability to render an accurate diagnosis depends on the available clinical information. Biopsy specimens of these lesions submitted for histopathology with clinical information & differential diagnosis and a clinico-pathological correlation is key to better patient care.

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