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Research Article

A Retrospective Study of Histopathology of Psoriasis Vulgaris in a Tertiary Hospital

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Abstract

Introduction: *Psoriasis affects about 1.5-3% of world's population. There are other papulosquamous dermatoses mimicking psoriasis morphologically which can be differentiated histopathologically. The histologic changes in psoriasis vulgaris (plaque psoriasis) vary considerably depending on the stage of the lesion.*

Aims and Objectives: *This study was done to evaluate the occurence of Munro micro-abscess and the spongiform pustule of Kogoj in psoriasis vulgaris and to evaluate various histologic changes in psoriasis vulgaris.*

Materials & Methods: *A retrospective, cross sectional study done in Dept of Pathology & Dept. of DVL, for a period of 6 months, in which Histopathology slides and Clinical notes in the records of patients with diagnosis of Psoriasis from Jan 2012 to Dec 2016.*

Statistical analysis: *Percentages*

Results: *A total of 44 diagnosed cases of psoriasis were studied, male to female ratio was 1.09: 1 and maximum patients were in 3rd & 4th decade. Out of 44 cases, 40 (90.90%) cases had erythematous scaly plaques f/b hyperpigmented plaques in 4 (9.10%) and limbs was commonest site of involvement f/b trunk, scalp & face. Histopathological findings of Acanthosis, Parakeratosis, Suprapapillary thining, Hypogranulosis & Dilated capillaries were seen in maximum cases. Munro's micro abscesses & Spongiform pustule of Kogoj were seen in 38 (86.36%) & 10 (22.72%) respectively.*

Conclusion: *Psoriasis has varied clinical presentations. So, biopsy of a lesion at different stages of presentation in same patient will differ. Presence of Munro's microabscess & Spongiform Pustule of Kogoj is seen in early lesion of psoriasis, these may not be seen in long – standing lesions. Other histological features alongwith clinical correlation may help in diagnosis of psoriasis even in absence of Munro's microabscess & Spongiform pustule. So, histopathology serves as a diagnostic tool and rules out other lesions that mimic psoriasis.*

Keywords: *Psoriasis, Munro's microabscesses, Spongiform Pustule of Kogoj.*

Introduction

Psoriasis (Greek. Psora, the itch)[1] is a common, chronic, relapsing, papulosquamous dermatitis, characterized by an epidermis covered by silvery scales.[2] Papulosquamous dermatitis comprises a group of dermatoses that have distinct morphologic features. Psoriasis affects about 1.5-3% of world's population.[4.5] Other papulosquamous dermatoses mimicking psoriasis morphologically are Pityriasis rosea, Lichen planus, Seborrheic dermatitis, Pityriasis rubra pilaris, Parapsoriasis, Drug eruptions, Tinea corporis, and Secondary syphilis.[3] The typical histological changes seen in Psoriasis are regular acanthosis, papillomatosis, thinning of suprapapillary plates of epidermis, diminished or absent granular layer, confluent parakeratoses, munro microabscess and the spongiform pustule of Kogoj,[4,5] and dilated & tortuous capillaries with perivascular lymphocytic infiltrate. Munro's microabscesses are collections of neutrophils and pyknotic nuclei of neutrophils in mounds of parakeratoses.[5,7] It is observed only in early scaling papule and near the margin of the advancing plaques.[5] Sometimes it may not be seen because of the sampling error.[7]The Spongiform pustule of Kogoj is a micropustule of neutrophils in a sponge-like network formed by degenerated and thinned epidermal cells.[5] It is considered to be truly diagnostic and specific for psoriasis however is not always seen in long-standing lesions.[5,6]

Aims and Objectives

To evaluate the occurence of Munro's micro abscess and the Spongiform pustule of Kogoj in psoriasis vulgaris and various histologic changes in psoriasis vulgaris. To study the usefulness of histologic features like Munro's microabscess and the Spongiform pustule of Kogoj in the diagnosis of psoriasis and to explore the alternative histologic features for the diagnosis of psoriasis vulgaris.

Materials and Methods

A Retrospective, cross sectional study was conducted in Department of Pathology & Department of Dermatology, Venereology & Leprosy (DVL) at Bharati Vidyapeeth (Deemed to be University) Medical College & Hospital, Sangli from January 2012 to 2016 for a period of 6 months, in which Histopathology slides and Clinical notes in the records of patients with diagnosis of psoriasis were enrolled, studied and analyzed. There were no exclusion criteria's. All the histology slides were reviewed to confirm the clinical diagnosis and to study the histopathological and clinical features in psoriasis vulgaris. The findings were tabulated. Statistical analysis was done with percentages. The study was carried out after approval from Institutional Ethical Committee.

Observations and Results

Total 44 diagnosed cases of psoriasis were studied from January 2012 to December 2016, out of which total males were 23 (52.27%) and females were 21 (47.73%). The male to female ratio been 1.09: 1. The maximum patients were in 3rd & 4th decade. Clinically 40 (90.90%) patients had erythematous scaly plaques (Fig 1,2) followed by hyperpigmented plaques (Fig 3) in 4 (9.10%). Limbs was commonest site of involvement followed by trunk, scalp (Fig 4), palms (Fig 5), soles & face. Itching was present in 32 cases (72.72%), Auspitz's sign 15 cases (34.09%) & Koebner's phenomenon in 6 (13.63%).

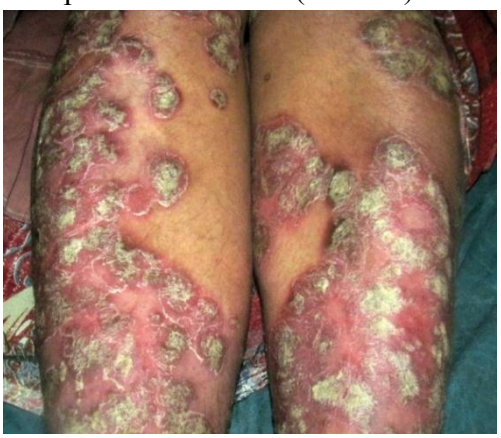

Fig 1: Well defined erythematous scaly plaques on both lower extremities.

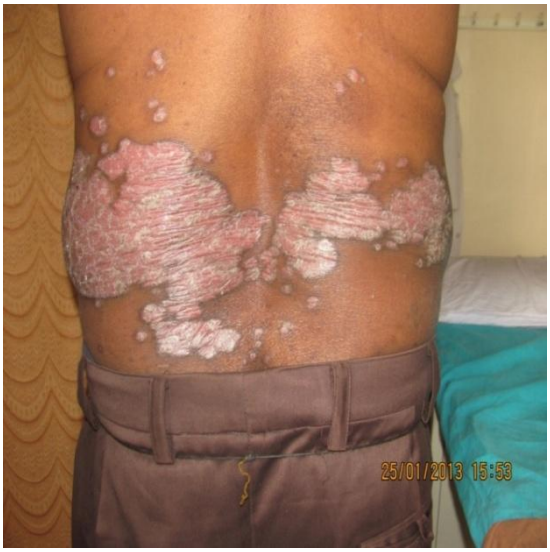

Fig 2: Well defined erythematous scaly plaques on lower back.

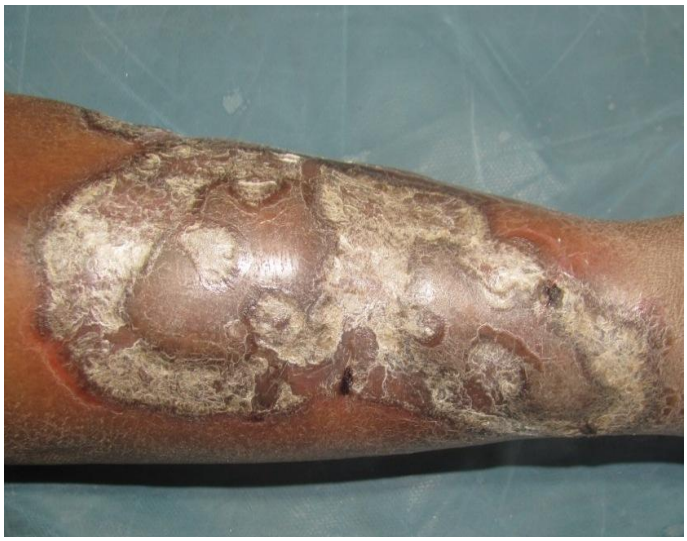

Fig 3: Hyperpigmented scaly plaque on lower leg

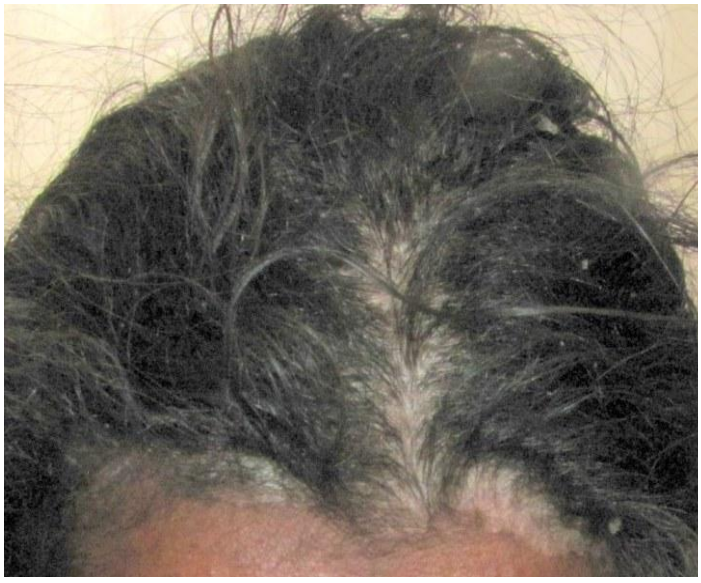

Fig 4: Scaly plaques on scalp.

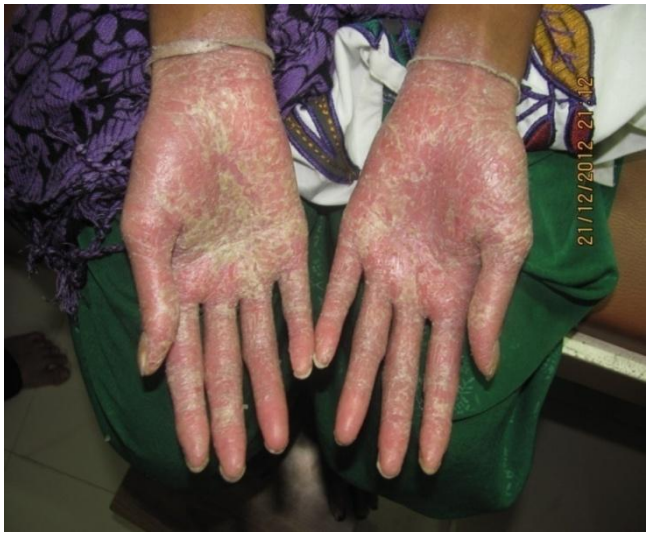

Fig 5: Scaly plaques on palms.

Table 1: Histopathological findings of psoriasis of skin

Histological features	Number of cases (n =44)	Percentages %
Acanthosis	42	95.45
Hyperkeratosis	18	40.90
Parakeratosis	41	93.18
Munro's Microabscesses	38	86.36
Elongated Rete Ridges	38	86.36
Suprapapillary Thining	40	90.90
Hypogranulosis	40	90.90
Spongiosis	18	40.90
Spongiform Pustule of Kogoj	10	22.72
Dilated Capillaries	42	95.45
Lymphocytic Infiltrate	40	90.90
Mononuclear cell infiltrate	4	9.09

Table 1 shows that the above histopathological findings seen in slides of 44 patients.

The histopathological findings seen were Acanthosis (95.45%), Hyperkeratosis (18%), Parakeratosis (41%), Munro's micro abscesses (86.36%), Elongated rete ridges (86.36%), Suprapapillary thining (90.90%), Hypogranulosis (90.90%), Spongiosis (40.90%), Spongiform pustule of Kogoj (22.72%), Dilated capillaries (95.45%), Lymphocytic infiltrate (90.90%) and Mononuclear infiltrate (9.09%). The histopathological findings of Acanthosis, Parakeratosis, Suprapapillary thining, Hypogranulosis & Dilated capillaries were seen in maximum cases. Munro's micro abscesses &

Spongiform pustule of Kogoj were seen in 38 (86.36%) & 10 (22.72%) respectively. (Fig 6 to 9).

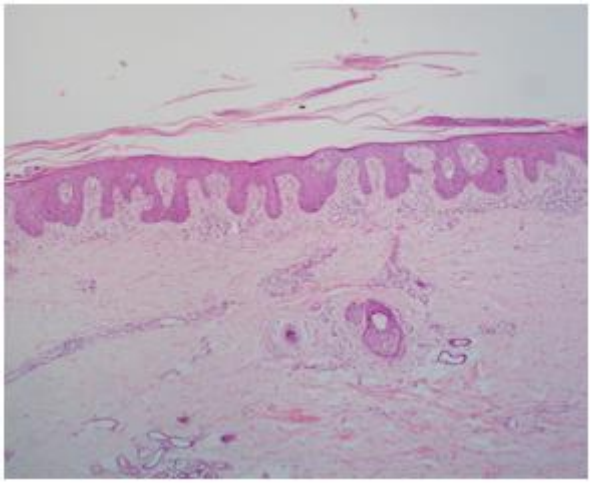

Fig 6: shows hyperkeratosis, suprapapilary thining, elongated rete ridges and dilated capillaries in papillary dermis.

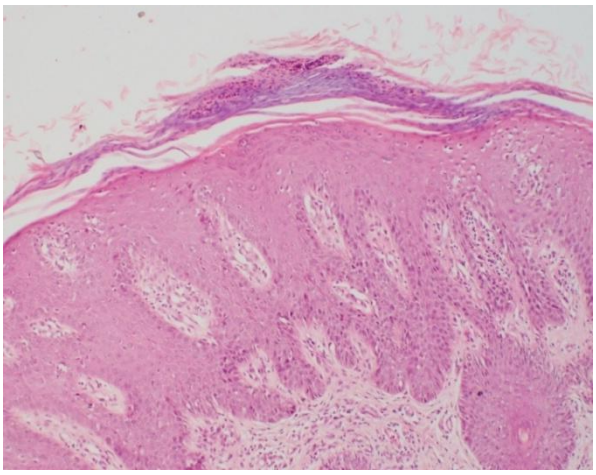

Fig 7: shows acanthosis and parakeratosis

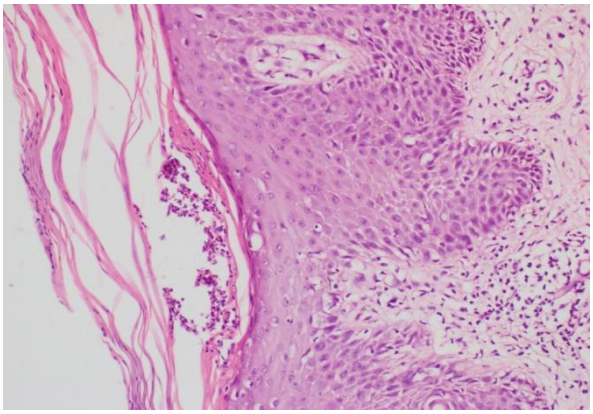

Fig 8: shows parakeratosis and Munro's micro abscesses

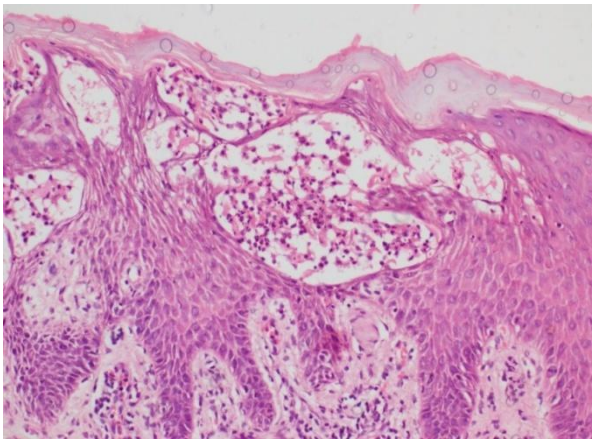

Fig 9: shows Spongiform pustule of Kogoj

Discussion

Psoriasis has many different clinical variants and can resemble other skin diseases such as secondary syphilis, dyshidrotic eczema, seborrheic dermatitis, pityriasis rosea, psoriasiform drug rash, and parapsoriasis.[3] Besides, the same patient can present at different times with a different clinical presentation or variant.[3] The recurrent nature and prognosis of psoriasis differs, so further highlighting the importance of reaching the correct diagnosis.[3] Typical histologic picture of Psoriasis is not always found even if biopsy is taken from a clinically typical lesion.[9] The diagnosis of psoriasis in a classical case, can be made on clinical grounds and histopathology is only supportive.[6]

Table 2 shows Present study's histopathological features in comparison to other studies

Histoplogical features	Gordon and Johnson [11] (n = 100)	Pandit GA[12] (n = 42)	Present study (n = 44)
Acanthosis	100	41	42
Hyperkeratosis	28	10	18
Parakeratosis	97	42	41
Munro's Microabscesses	75	35	38
Elongated Rete Ridges	-	36	38
Suprapapillary Thining	98	40	40
Hypogranulosis	75	39	40
Spongiosis	84	40	38
Spongiform Pustule of Kogoj	31	5	10
Dilated Capillaries	96	41	42
Lymphocytic Infiltrate	95	42	40
Mononuclear cell infiltrate	-	-	4

The present study was comparable with studies done by Gordan & Jonnson et al[11] and Pandit GA et al.[12] The histopathological findings of acanthosis, pararkeratosis, suprapapillary thining, dilated capillaries and lymphocytic infiltrated around the capillaries were seenin all 3 studies in maximum cases. The finding of Munro's microabscesses in Pandit GA et al was almost same as in present study, also finding of Spongiform pustule of Kogoj was in comparison to other studies.

The histopatholgical findings vary in every patient of psoriasis as it depends on the type of lesion which is taken for biopsy, duration of psoriasis since when the patient is having.

Table 3 shows Clinical Features In Comparison to Other Study

Clinical Features	Pandit GA[11] (n=42)	Present Study (n=44)
No. of males	24	23
No. of females	18	21
Age group presentation	20-40 years	20-40 years
Scaly plaques	39	40
Limbs	35	41
Trunk	20	34
Scalp	17	16
Face	10	13
Itching	35	32
Auspitz's sign	27	15
Koebner's Phenomenon	5	6

Table 3 shows commonest age group presentation is between 20 to 40 years in present study and study done by Pandit GA et al[11]. The maximum patients had scaly plaques, the commonest site involved were limbs followed by trunk, scalp & face on the which are comparable in both studies. Itching was present in both studies. Auspitz's sign and Koebners's phenomenon was seen in comparable cases in both studies.

Conclusion

In present study it was concluded that Psoriasis has varied clinical presentations. Besides, the same patient may present with different types of lesions of psoriasis. So, biopsy of a lesion at different stages of presentation in same patient will differ. Presence of Munro's microabscess & Spongiform Pustule of Kogoj is seen in early lesion of psoriasis, these may not be seen in long – standing lesion. Other histological features like Acanthosis, Hyperkeratosis, Suprapapillary thining, Dilated capillaries, Perivascular lymphocytic infiltrate along with clinical correlation may help in diagnosis of psoriasis even in absence of Munro's microabscess & Spongiform pustule. So, histopathology serves as a diagnostic tool and rules out other lesions that mimic psoriasis. The most accurate diagnosis is the one that most closely correlates with clinical outcome and helps to direct the most appropriate clinical intervention.

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