



HISTOPATHOLOGICAL STUDY OF DIFFERENT FORMS OF PSORIASIS AND THEIR CLINICAL CORRELATION

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ABSTRACT **Background** Psoriasis (Gk. psora, the itch) 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.

Objective To correlate Clinical and Histological features of Psoriasis.

Material and Methods

- A total of 110 cases were studied. Clinical study will be done in Department of Dermatology, S. N. Medical College.
- Histopathological study of Skin Biopsy specimens will be done in Department of Pathology, S.N. Medical College.
- H & E Stained slides were studied of the cases studied.
- Following Histological Features were studied.
- Parakeratosis
- Hyperkeratosis
- Agranulosis
- Hypergranulosis
- Hypogranulosis
- Suprapapillary Thinning
- Elongation of Rete Ridges
- Micro-munro Abscess
- Kogoj Abscess
- Demal Lymphocytic Infiltrated
- Dilated Blood Vessels

Results

- Among 110 cases studied, 91 cases were of Chronic Plaque Psoriasis, 9 Cases were of Guttate Psoriasis, 2 cases were of Inverse Psoriasis, 3 cases of Erythrodermic Psoriasis, 3 cases of Generalized Pustular Psoriasis and 2 cases of Palmo-plantar Psoriasis.
- Parakeratosis, Hyperkeratosis, Hyogranulosis, Micro-Munro Abscess, Dermal Lymphocytic Infiltrate and Dilated Blood Vessels were prominent Histological findings in this study.

Conclusion

- The present study validates that after using combination of varied clinical features and varied histological findings in suspected cases of Psoriasis, we can arrive at the definitive diagnosis of Psoriasis.

KEYWORDS

Psoriasis, Clinical Presentation and Histological Findings.

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INTRODUCTION

Psoriasis is the antidote of dermatologist ego – By Bechet, 1935. Psoriasis (Greek. Psora, the itch) is a common, chronic, relapsing, papulosquamous dermatitis, characterized by an epidermis covered by silvery scales. Papulosquamous dermatitis comprises a group of dermatoses that have distinct morphologic features. The characteristic primary lesion of these disorders is a papule, usually erythematous, that has a variable amount of scaling on the surface¹.

Psoriasis is a common disease of unknown etiology characterized by well defined erythematous papules and plaques surmounted by silvery white scales over the elbows, knee, scalp, and extensor surfaces. It is a chronic disease marked by period of remissions and exacerbations. Some patients are never completely free of the disease and others experience long-term remission.¹

Prevalence rate of Psoriasis is 0.1% to 3% worldwide. Usually appears

in second and third decade of Life. Mean age in males is 29 and in females is 272.

With recent developments in understanding the role of inflammation in the pathogenesis of psoriasis, it is now widely believed that psoriasis is not just a skin disease but a systemic inflammatory process. Along with skin problems, it has increased risk of other chronic disorders including DM, Hypertension, Coronary Artery Disease, Fatigue and Depression.³

Nail involvement occurs in 10-50% of psoriasis. Some patients are never completely free of the disease and others experience long-term remission⁴.

Psoriasis has different clinical variants that mimic diverse dermatological conditions. Besides, clinical features in one patient may differ at different times and sometimes, the diagnosis may get

obscured, as in case of erythroderma. These patients often prove to be a diagnostic dilemma for the clinician and warrant a histopathological confirmation. Histologically, psoriasis vulgaris must be differentiated from psoriasiform dermatitis.

The term psoriasiform implies that the lesion either clinically or histologically mimics psoriasis. This group includes: psoriasis, seborrheic dermatitis, PRP, allergic dermatitis, atopic dermatitis, nummular dermatitis, lichen simplex chronicus, pityriasis rosea, dermatophytosis, and mycosis fungoides, differential diagnosis being Onychomycosis.

Papulosquamous dermatitis comprises a group of dermatosis that have distinct morphologic features. Because all Papulosquamous disorders are characterized by scaling papules, clinical confusion may result during their diagnosis. Separation of each of these becomes important because the treatment and prognosis for each tend to be disease specific.

Review of Literature

Most common histologic findings were acanthosis, hyperkeratosis, parakeratosis and psoriasiform hyperplasia. Suprapapillary thinning, micro abscess was seen in a few cases.

In the study conducted by Grover C et al, a total of 42 consecutive cases of psoriasis with nail abnormalities were included in the study. The majority of these were males (57%) and peak incidence was observed in the age group of 10-20 years (29%).

In the study conducted by Gopal Ambadasrao Pandit et al, in the year 2015, of 42 cases of psoriasis 24 (57.14%) were males, 18 (42.86%) were females with male to female ratio of 1.33:1. Out of 42 histologically diagnosed cases of psoriasis, 40 (95.24%) cases had a clinical diagnosis of psoriasis whereas rest of the 2 (4.76%) cases had a clinical diagnosis of tuberculous verrucosa cutis.

In the study done by Mehta S et al, psoriasis is a genetically determined, inflammatory and proliferative disease of the skin characterized by dull red, sharply demarcated scaly plaques.

This study revealed the sensitivity and specificity of clinical diagnosis for psoriasis and psoriasiform dermatitis to be 84% and 48.3% respectively while that of histological diagnosis is 72.4% and 65.2%, respectively.

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In the study done by Khandpur S et al, disease are more common in farmers, manual labourers and housewives, which could be explained by Koebner's phenomenon.

A majority of our patients (48%) had both palm and sole involvement with equal number (approx. 15%) shows only palmar or plantar involvement.

In the study done Rosa Dr. G et al, seborrheic dermatitis could be hardly differentiated from psoriasis by the evident of spongiosis, follicular parakeratosis and irregular acanthosis.

PAS and Gram stains are helpful to identify microorganisms in cases of bacterial impetigo, candidiasis and pustular dermatophytosis.

To correlate Clinical and Histopathological features of Psoriasis.

Methodology: Materials and Methods

This is Case-series study conducted on 110 patients of psoriasis from October, 2016 to September, 2018.

Clinical study will be done in Department of Dermatology, S. N. Medical College.

Histopathological study of Skin Biopsy specimens will be done in Department of Pathology, S.N. Medical College.

Methods of Collection of Data

Inclusion Criteria

New Lesions Of Psoriasis

Exclusion Criteria

Psoriatic lesions associated with secondary infections

Patients who has taken treatment (topical or systemic) for four weeks prior to the study.

A clinical data will be obtained from suspected cases of psoriasis. The detailed clinical history which includes age, sex, site of onset, past treatment, seasonal variations, triggering factors, clinical presentation and family history along with history of systemic diseases and habits will be taken.

Investigations: Blood Investigations Like Complete Blood Count, Diabetic Profile, Liver Function Tests, Thyroid Profile: T3, T4 and TSH.

The skin biopsy specimen will be fixed in 10% formalin and processed as per standard grossing protocol. After processing sections of 4 - 5 microns will be taken. Staining with hematoxylin and eosin will be done. Special staining will be done wherever required.

Results

Biopsy and specimen of 110 cases clinically suspected cases of Psoriasis were studied in department of Pathology at S. N. Medical College & HSK Hospital, Bagalkot from Oct 2016 to September 2018.

Sex

In the present study, Psoriasis is more common in male as compared to female.

Table 5 . Sex Distribution

Gender	Cases
Male	71
Female	39

Sex Ratio

The male to female ratio is 1.82:1. The high prevalence is seen in young age group and middle age group.

Age Distribution

In present study, the age of patients range from 18 years old to 83 years old. The maximum incidence seen in 31-40 years, followed by 21-30 years age group.

Age Range	Cases
0-10 y	-
11-20 y	05
21-30y	71
31-40y	18
41-50y	07
51-60y	02
61-70y	04
71-80y	01
81-90y	02

Case Distribution

In present study, Chronic plaque psoriasis (84%) followed by Guttate Psoriasis (7%), and Others.

Clinical Types	Case Distribution
Chronic Plaque Psoriasis	92

OBJECTIVES

Guttate Psoriasis	04
Palmo-plantar Psoriasis	02
Erythrodermic Psoriasis	04
Inverse Psoriasis	04
Generalized pustular Psoriasis	02
Palmo-Pustular Pustular Psoriasis	02

Cutaneous Features

Histopathological Examination

Histopathological Findings	Cases
Parakeratosis	81
Hyperkeratosis	106
Acanthosis	75
Hypogranulosis	61
Agranulosis	20
Hypergranulosis	16
Normal Granular Layer	13
Suprapapillary Thinning	107
Elongation of Rete Ridges	77
Micro-munro Abscesses	62
Kogoj Abscess	31
Dermis showing Lymphatic Infiltrate	96

Discussion

Psoriasis is a genetically determined, inflammatory and proliferative disease of skin characterized by dull, red, sharply demarcated scaly plaques. The two clinical signs Auspitz's sign and Garratage sign have been described as pathognomonic of Psoriasis by Hellgren et al.

Psoriasis has many clinical variants can resemble other skin diseases. David Elder has considered histopathology as a "gold standard" for the diagnosis of most dermatological conditions.

Comparison of age distribution of lesions of Psoriasis of different studies

Age Range	Present Study (n=110)	C Raghuveer et al (n=100)	Karumbiah et al (n=80)
< =10 y	-	-	-
11-20y	05	02	07
21-30y	71	23	43
31-40y	18	56	07
41-50y	07	02	05
51-60y	02	06	03
61-70y	04	03	07
71-80y	01	02	05
81-90y	02	03	03

Above Table show, the present study show most study belong to 31 to 40 yrs age group followed by 21-30 yrs age group. Where as study done by C Raghuveer et al show most patients belong to 31-40yrs.

Comparison of histopathological findings in lesions of psoriasis in different studies

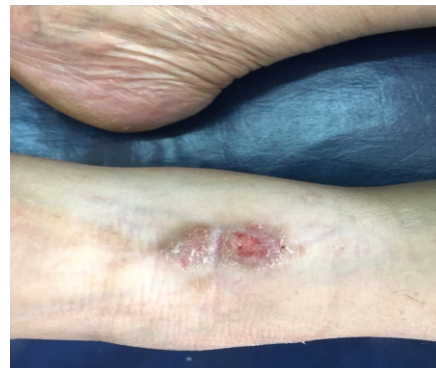
Histopathological Findings	Cases	C Raghuveer et al	Karumbiah et al
Parakeratosis	81	87	71
Hyperkeratosis	106	91	77
Acanthosis	75	71	66
Hypogranulosis	61	54	57
Agranulosis	20	8	6
Hypergranulosis	16	12	17
Normal Granular Layer	13	10	09
Suprapapillary Thinning	107	72	63

Elongation of Rete Ridges	77	73	72
Micro-munro Abscesses	62	61	54
Kogoj Abscesses	31	30	27
Dermal Lymphocytic Infiltrate	96	91	72
Dilated Blood vessels	101	97	61

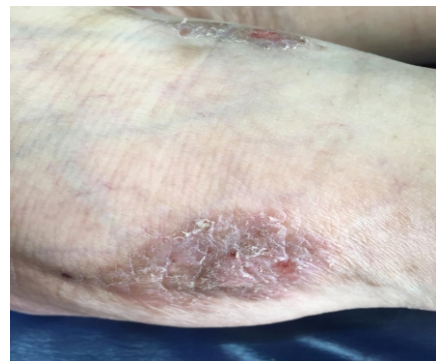
In present study, Hyperparakeratosis (106 cases) along with parakeratosis (81 cases), acanthosis, hypogranulosis (61), suprapapillary thinning (77 cases) along with elongated rete ridges (77 cases), micro-munro abscesses (62 cases) and Dermal lymphocytic infiltrate (94 cases) and dilated blood vessels (101 cases).

In study done by C Raghuveer et al, hyperkeratosis was noted in 91 cases, parakeratosis was noted in 87 cases. Acanthosis was noted in 71 cases. Hypogranulosis is noted in 54 cases. Hypergranulosis is noted in 12 cases. Elongated Rete Ridges is noted in 73 cases. Micro-munro abscesses are noted in 61 cases. Kogoj Abscesses noted in 30 cases. Dermal Lymphocytic Infiltrate noted in 91 cases and Dilated blood vessels noted in 97 cases.

In the study done by Karumbiah et al. Hyperkeratosis is noted in 77 cases, Parakeratosis is noted in 71 cases, Acanthosis is noted in 66 cases and other findings can be noted in the table.



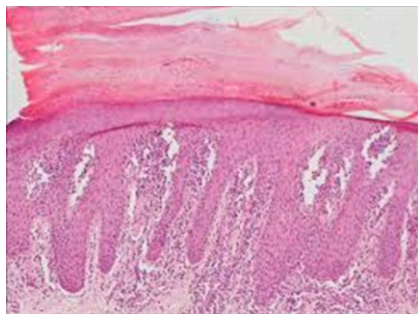
Picture showing early lesions on Psoriasis



Picture showing late lesions of psoriasis



Picture Showing Micromunro abscesses and elongation of Rete ridges



Pictures of other diagnosed cases of Psoriasis

Conclusion

Psoriasis is a chronic dermatological disorder with chronic remissions and exacerbations.

Cutaneous lesions consisted of well-defined erythematous papules and plaques covered with scales. Hypopigmented halo, Koebner phenomenon, and Auspitz sign were the associated features.

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.

In different types and at different stages of psoriasis, the histological manifestations are present in varying degrees, and often it is the combination of these manifestations that helps the clinician and a pathologist, arrive at the diagnosis of psoriasis.

In the present study, 110 clinically suspected cases of different types of psoriasis are studied.

Clinical Features and Histopathological findings are studied.

Clinical Features Like Itching with pain and weakness were noted in most cases. Fever was additional feature, which was noted in few cases.

12 Histopathological findings were studied. On the basis of which different types of Psoriasis.

1. Parakeratosis
2. Hyperkeratosis
3. Acanthosis
4. Hypogranulosis
5. Agranulosis
6. Normal
7. Suprapapillary Thinning
8. Elongated Rete Ridges
9. Micro-munro Abscesses
10. Kogoj Abscesses
11. Dermal Lymphocytic Infiltrate
12. Dilated Blood vessels

It is observed parakeratosis, hyperkeratosis, acanthosis, hypogranulosis, Elongated rete ridges and Micro-munro abscesses along with Kogoj abscesses are prominent histopathological features which helps in confirming the diagnosis of psoriasis in clinically suspected cases of psoriasis.

Clinically Koebner's phenomenon and Auspitz's sign are statistically significant features noted in all cases.

Hyperkeratosis, Parakeratosis, Hypogranulosis along with Elongated Rete Ridges, Micro-munro abscesses and dermal vessels are statistically significant findings studied in psoriasis.

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