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Pathology

HISTOPATHOLOGICAL STUDY OF PAPULOSQUAMOUS LESION OF SKIN AT TERTIARY CARE INSTITUTE

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ABSTRACT **Background:** The Papulosquamous skin disorders are a heterogeneous group of skin disorders characterized by scaly papules and plaques which leads to diagnostic dilemma to both dermatologist and pathologist. Hence the present study is done to study the various histomorphological findings of various papulosquamous lesions and to study the clinicohistopathological correlation of papulosquamous skin lesions. **Methodology:** This is a cross-sectional study which includes skin biopsy of clinically diagnosed papulosquamous lesions. **Results:** Data of cases from February 2019 to January 2020 were taken prospectively, in the department of Pathology at a tertiary care hospital. Clinical and histopathological data of each patient was tabulated and clinicopathological correlation was done. Out of 80 cases of papulosquamous lesions, Psoriasis(47.5%) was commonest followed by Lichen planus(15%). Positive clinicopathological correlation was highest in Psoriasis. **Conclusion:** Clinicopathological correlation and unique histopathological features provides a precise diagnosis in papulosquamous lesions.

KEYWORDS : Psoriasis, Lichen planus, Papulosquamous lesions

INTRODUCTION

Papulosquamous diseases are a heterogeneous group of disorders, whose etiology primarily is unknown.[1,2,3] These diseases are considered important because of their frequency of occurrence. Separation of each of these diseases becomes important because the treatment and prognosis for each tends to be diseases specific.[3,4]

These lesions have unknown aetiology and are significant/notorious clinically for their chronicity and recurrence and pose to be a diagnostic dilemma for the clinician.[2], Therefore, keeping in mind the dilemma of diagnosis of these lesions, an attempt should be made to analyse various histopathological patterns of non- infectious erythaematous, papulosquamous lesions of the skin based on the tissue reaction pattern and to assess the concordance of provisional clinical diagnosis and histopathological diagnosis.[5-9]

Skin biopsy should be accompanied by all clinical detail for a precise diagnosis which depends on tissue reaction patterns and pattern of inflammation caused by various pathological stimuli.[5]

Clinico-histopathological correlation are very useful in evaluating different group of cutaneous disorders of same tissue pattern reaction.[4] Histopathological study is considered to be the gold standard for the diagnosis of skin lesions.[1-10] Hence the present study is done to study the various histomorphological findings of various papulosquamous lesions and to study the clinicohistopathological correlation of papulosquamous skin lesions

MATERIALAND METHODS:

This is a cross-sectional study which includes skin biopsy of clinically diagnosed papulosquamous lesions. Data of cases from February 2019 to January 2020 were taken prospectively.The clinical data was collected from biopsy request forms and medical record department. The received specimens were fixed in 10% formalin. Microscopic sections of 2–3 µm thickness were obtained by microtome. Sections were stained by Hematoxylin and Eosin (H and E). Skin biopsy specimens (measuring >3 mm in maximum dimension) along with the presence of both epidermis and dermis and absence of crush artifact were taken as adequate for histological examination. New clinically diagnosed papulosquamous lesions irrespective of age, sex were included in the study. Infectious papulosquamous lesions, like fungal infection and syphilis were excluded. Clinical and histopathological data of each patient was tabulated and clinicopathological correlation was done.

Statistical analysis: The data collected was analysed using SPSS software. Results were expressed in proportions and percentages.

RESULTS:

Total 80 cases of papulosquamous lesions were studied in the present study. The duration of this papulosquamous lesions varied in the range of 15 days to 25 years.

The age distribution pattern revealed that the maximum skin biopsies were in the age range of 40-49 years and the least number were in the youngest age group of 0-10 years . Males 51(63.7%) were commonly affected in the present study with a male to female ratio of 1.7:1.

The anatomic distribution pattern revealed that the limbs (Lowerlimb> Upperlimb) were involved in the maximum number of cases (52.5%) followed by the whole body(18.7%) trunk (17.5%), head, neck and face (10.0%) and labia minora(1.25%). Distribution of papulosquamous lesion in the present study is shown in table1.

Table 1: Distribution of total number of cases

Lesions	No.of cases
Psoriasis	38 (47.5%)
Lichen planus	12(15%)
Eczema	05 (6.25%)
Pityriasis Rosea	04 (5%)
Seborrheic dermatosis	04 (5%)
Pityriasis lichenoid Chronica	03 (3.75%)
Lichen simplex chronicus	02 (2.5%)
Prurigo Nodularis	02 (2.5%)
Prurigo simplex	01 (1.25%)
Contact dermatitis	01 (1.25%)
Lichen amyloidosis	01 (1.25%)
Parapsoriasis	01 (1.25%)
Lichen sclerosis et atrophicus	01 (1.25%)
Repeat biopsy	05 (6.25%)

Psoriasis was the most common lesion in the present study followed by lichen planus, eczema, pityriasis rosea (figure 1& 2). Psoriasis was common in males compared to females. In psoriasis maximum number of cases involved 40-49 year of age group. Lower extremities were most commonly involved. Among Psoriasis(38 cases) , most common morphological variant was psoriasis vulgaris (30 case) followed by palmoplantar psoriasis (3 cases), erythroderma secondary to psoriasis (3 cases) and less common was guttate and pustular psoriasis(1 case). In Psoriasis, clinicopathological correlation was seen in 100% cases.

Lichen planus showed equal incidence in males and females. 11 cases

of classic lichen planus and one case of hypertrophic lichen planus were observed in the present study.

91.6% clinicopathological correlation was seen in Lichen planus. In one case discordance was seen where clinically it was diagnosed as lichen planus but final diagnosis of eczema was given on biopsy.

Pityriasis rosea was common in 20-29 years age group individuals and was common in males and 4 cases were histopathologically diagnosed and confirmed. one e case which was clinically diagnosed as pityriasis rosea was diagnosed as Psoriasis on histopathology.

100% concordance was observed in 4 cases of Seborrheic dermatitis, 5 cases of eczema and Prurigo nodularis and prurigo simplex.

In 80 cases, 71 cases showed clinicopathological correlation whereas 4 cases showed discordance of clinical and histopathological diagnosis. Five cases were not able to diagnose due to inappropriate biopsy site or biopsy from an early stage lesion, so repeat biopsy was advised in those cases.

Table 2: Number of discordant clinicopathological papulosquamous lesions.

Histopathological diagnosis	No.of cases	Clinical diagnosis
Eczema	1	Lichen planus
Pustular Psoriasis	1	Bullous pemphigoid/ dermatophytosis
Lichen sclerosis et atropicus	1	Lichen planus
Psoriasis	1	Pityriasis rosea

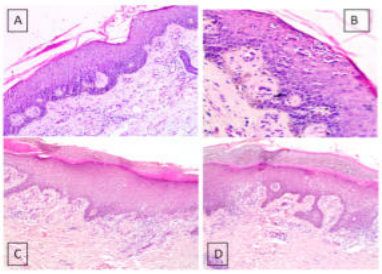

Figure1: Microphotograph of Psoriasis (A &B) and Lichen Planus (C&D) x10, H& E

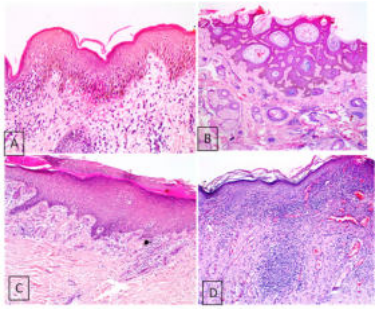

Figure 2: Microscopy of Pityriasis Rosea(A), Seborrheic dermatosis(B), Eczema(C) and Lichen sclerosis et atropicus(D) X10, H &E

DISCUSSION:

Papulosquamous lesions are a group of complex disorders with unique morphologic features like tissue reactions and pattern of inflammation. As histopathology remains gold standard for diagnosis, improved diagnostic specificity can be achieved through a detailed clinicopathological correlation.

In the present study majority of cases were seen in 40-49-year group with male preponderance. The results were concordant with study done by Reddy RB et al[11]

Limbs were commonly involved areas in these papulosquamous lesion followed by whole body, trunk and head, neck face which is similar to previous studies.Barman DD eta l[12], Tayal A et a[4]l TA sushma et al[7].

In the present study, Psoriasis was the most common lesion observed followed by Lichen planus. This was concordant with study done by Chavan et al[1], Narayankar and Pandit et al[13] Chabbi et al[6], Younas M et al[14], Agarwal S et al[9] and Saritha C et al[15].Psoriasis was most common in 40-49 years age group individuals.

The most common histopathological findings observed in 38 cases of Psoriasis were parakeratosis (81.6%), irregular acanthosis (84.2%), perivascular inflammation (89.4%) followed by suprapapillary thining(65.8%), munro microabscess(52.6%) and least common finding hypogranulosis(26.3%), which was concordant with the study done by Reddy RB et al[11], Karumbaiah KP et al[9] and Barman DD et al[12].

Table 3: Comparative histopathological findings of psoriasis in different studies

Histopathological features	Reddy RB et al[11] n=34(%)	Barman et al[12] n=9(%)	Karumbaiah et al[9] n=22(%)	Present study n=38(%)
Hyperkeratosis	82.5	77.77	77.27	84.2
Parakeratosis	79.4	88.88	72.72	81.6
Irregular acanthosis	82.5	88.88	86.36	84.2
Spongiform pustule			4.54	-
Hypogranulosis	23.5	44.44	22.72	26.3
Munro microabscess	29.4	44.44	22.72	52.6
Papillary edema	58.8	33.33	27.27	26.3
Vascular changes	88.2	88.88	86.36	78.9
Perivascular inflammation	94.1	88.88	81.81	89.4
Suprapapillary thinning	38.23	66.66	40.9	65.8

Lichen Planus was the second most common finding similar to studies done by Balaji et al[16] and Saritha et al[15]. Its incidence was common among 4th decade individuals. Lichen Planus had equal sex distribution which was concordant with study done by Narayankar and Pandit et al13, Chabbi et al[6].

The most common histopathological changes observed were hyperkeratosis (83.3%), vacuolar degeneration of basal cells (100%), pigment incontinence (83.3%) and band like lymphocytic infiltrate (100%) and least common were civatte bodies, max josephs space (8.3%) which was similar to studies done by Reddy RBet al11, Narayankar and Pandit et al[13].Detailed compararive histopathological findings of lichen planus in different studies are shown in table-4.

Table 4: Comparative Histopathological Findings Of Lichen Planus In Different Studies

Histopathological features	Reddy RB et al[11]	Narayankar SL et al[13]	Karumbaiah KP et a[l9]	Present study
Hyperkeratosis	100	91.66	100	83.33
Parakeratosis	100	8.33	11.76	8.33
Irregular acanthosis with saw tooth rete ridges	100	83.33	76.47	91.6
Hypergranulosis	66.6	100	76.47	100
Basal cell degeneration	79.1	100	100	100
Max joseph space		16.66	23.52	8.3
Civatte bodies	20.8	25	11.76	16.6
Band like mononuclear cell infiltrate	75	100	76.47	100
Pigment incontinence	87.5	91.6		83.3

Pityriasis rosea was common in 20-29 years' age group individuals, and was common in males which is similar to study done by Varma k et al[2], Kambil et al.

In the present study seborrheic dermatitis was common in females and eczema was common among males. Pityriasis lichenoid Chronica was common in younger individuals and common in females and constitute 3.75% of cases which was concordant with Varma K et al[2], TA Sushma

et al[7]. 2 cases of Prurigo nodularis was observed in the present study which presented as nodule and 2 cases of lichen simplex chronicus was observed.

Parapsoriasis constitute 1.25% which was less compared to study done by Varma K et al[2] ,TA Sushma et al[7].

The other papulosquamous diseases encountered in this study were one case each of Prurigo simplex, contact dermatitis, lichen amyloidosis, lichen sclerosis et atropicus.

In the present study, we observed a positive correlation of clinical diagnosis with the histopathological diagnosis of the papulosquamous disorders in about 88.75% of cases and discordance with 5% of cases where histopathology gave a conclusive diagnosis. This observation was similar to the studies done by TA Sushma et al[7], Reddy RB et al[11], Narayankar SL and Pandit GA etal.[13]

CONCLUSION:

Papulosquamous disorders are one of the most prevalent skin disease in day to day practice. These disorders create diagnostic dilemmas in overlapping cases, hence good rapport between a dermatologist and a pathologist is necessary to solve this dilemma.

Thus, the present study emphasises, the importance of clinicopathological correlation in providing a correct diagnosis, which facilitates effective and efficient care of the patients.

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