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**Research Article**

# Study of Clinico-histopathological Correlation of Papulosquamous Disorders at Tertiary Care Hospital

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**Abstract:** The aims of the study weres to determine the clinical & histopathological correlation of papulosquamous disorders and to know various tissue reaction patterns of papulosquamous disorders. A total 179 patients with clinical features of papulosquamous disorders were included in this study. Biopsy was taken and sent for haematoxylin and eosin stain and examination. Finally clinico-histopathological correlation was done & noted. Out of the 179 patients of papulosquamous skin lesions, in 123 (68.72%) patients the histopathological findings confirmed the clinical diagnosis while in 56 (31.28%) patients the histopathological findings were differed from clinical judgment. Degree of positive correlation was maximum in lichen planus (92.9%) & pityriasis lichenoides chronic (80%) while it was least in psoriasiform eczema (32%). Interestingly we have found two tissue reaction patterns lichenoid and psoriasiform in papulosquamous skin lesions. Our study was designed to explore hypothesis that certain tissue reaction patterns, lichenoid and psoriasiform, might be common in papulosquamous skin disorders which lead to new approaches for better understanding of etiopathogenesis and management of same group of disorders. The papulosquamous disorders are complex to diagnose & are difficult to identify and manage. Certain tissue reaction patterns like lichenoid and psoriasiform are common in papulosquamous skin disorders which lead to new approaches for better understanding of etiopathogenesis and management of same group of disorders.
**Keywords:** Papulosquamous skin disorders, Clinico-histopathological correlation, Tissue reaction patterns- lichenoid and psoriasiform.

## 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 [1]. 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 [2]. 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. Psoriasis, lichen planus, pityriasis rosea, pityriasis rubra pilaris, parapsoriasis, pityriasis lichenoides et varioliformis acuta, pityriasis lichenoides chronica, lichen striatus, seborrheic dermatitis, psoriasiform eczema, sub-acute cutaneous lupus erythematosus, dermatophyte infection, drug reaction, secondary syphilis, Reiter's disease, Kawasaki disease are included as papulosquamous disorders.

## METHODOLOGY

All patients of papulosquamous disorders, attending dermatology outpatient department from June 2009 to June 2014 were screened. Finally 179 cases of papulosquamous disorders, those undergone for skin biopsy were selected for our study. Patients with clinical features suggestive of papulosquamous skin disorders were examined by me & one senior colleague and skin biopsy from skin lesion was taken for histopathological examination. The clinical details were obtained from the original case record like age, sex, symptoms and other investigation. After taking consent, biopsy(punch/excision biopsy) was performed in clinically diagnosed/suspected cases of papulosquamous lesions in the department of dermatology. After proper labelling, biopsy specimen was sent to histopathology department with short clinical history and our probable diagnosis, for histopathological examination. Tissue sections were prepared from paraffin block and stained with

haematoxylin and eosin stain, followed by microscopic examination. Histopathological reports of each patient prepared by hospital senior pathologist. All histopathological reports were recorded for further analysis by us. Finally clinical & histopathological data of each patient prepared & clinico-histopathological correlation were done. Treatment was given to each patient according to the diagnosis.

## RESULTS

Since most of the condition included in our study shows definite preponderance for male population, it may be responsible for male-female ratio of 1.39:1. The age distribution pattern revealed that the maximum biopsies 24.6% of the total were in the age range of 21-30 years and the least number 7.3% were in the youngest age range of 0-10 years.

Out of the 179 patients of papulosquamous skin lesions, in 123 (68.72%) patients the histopathological findings confirmed clinical diagnosis while in 56 (31.28%) patients the histopathological findings were differed from clinical judgment. Degree of positive correlation was maximum in lichen planus (92.9%) & pityriasis lichenoides chronica (80%) while it was least in psoriasiform eczema (32%) (Table 1).

**Table 1: According to clinicohistopathological correlation**

| Disease | Clinical diagnosis | Histopathological diagnosis | |
|---|---|---|---|
| | | Positive | Negative |
| Psoriasis | 27(15.1%) | 20(74 %) | 7(26 %) |
| Lichen planus | 42(23.5%) | 39(92.9%) | 3(7.1 %) |
| Pityriasis rosea | 7(3.9%) | 4(57.1%) | 3(42.9%) |
| Pityriasis rubra pilaris | 11(6.1%) | 9(72.7%) | 2(18.2 %) |
| Pityriasis lichenoides et varioliformis acuta | 5(2.8%) | 3(60%) | 2(40%) |
| Pityriasis lichenoides chronica | 5(2.8%) | 4(80%) | 1(20%) |
| Lichen striatus | 4(2.2%) | 2(50%) | 2(50%) |
| Parapsoriasis | 6(3.4%) | 3(50%) | 3(50 %) |
| Seborrheic dermatitis | 21(11.7%) | 16(76.2 %) | 5(23.8 %) |
| Psoriasiform eczema | 25(13.9%) | 8(32%) | 17(68 %) |
| Sub acute cutaneous lupus erythematosus | 10(5.6%) | 6(60%) | 4(40 %) |
| Dermatophyte infection | 8(4.4%) | 5(62.5%) | 3(37.5%) |
| Drug reaction | 3(1.7%) | 2(66.3%) | 1(33.3 %) |
| Secondary syphilis | 3(1.7%) | 1(33.3%) | 2(66.7%) |
| Reiter's disease | 2(1.1%) | 1(50%) | 1(50%) |
| Total | 179 | 123(68.72%) | 56(31.28%) |

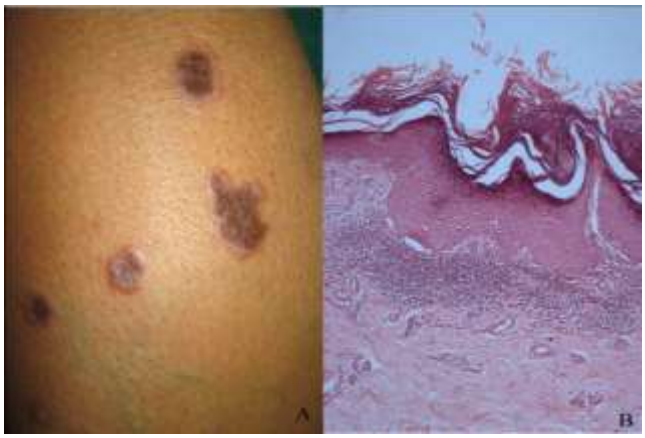

**Fig. 1: (A) Violaceous plaques of Lichen planus, (B) Band like infiltration with saw-toothing at places**

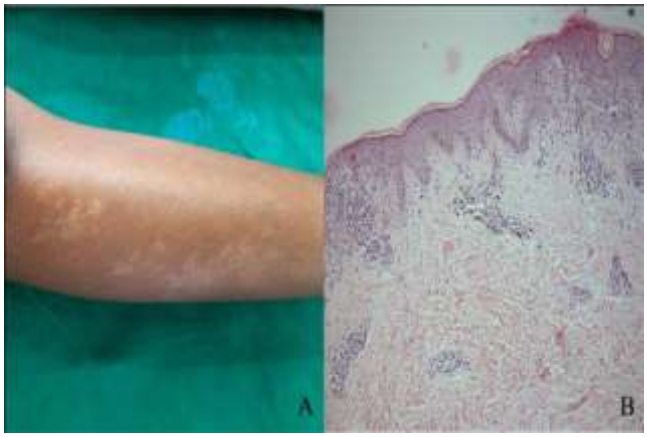

**Fig. 2: (A) Erythematous,scaly plaques of psoriasis, (B) Regular elongation of rete ridges with thickening at lower portion.**

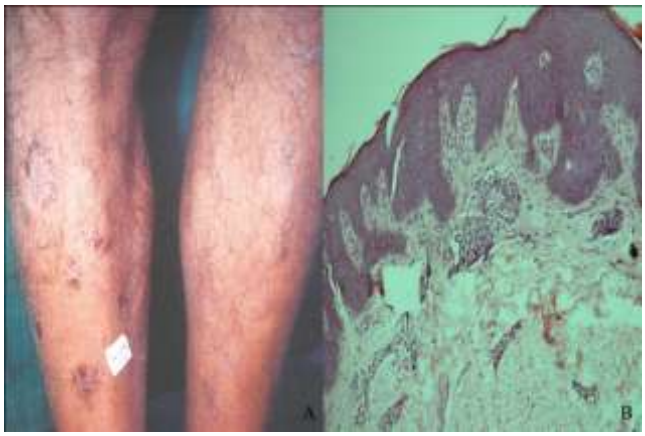

**Fig. 3: (A) Erythematous,scaly plaques on lower limbs, (B) Superficial infiltrate with parakeratosis in mounds in Pityriasis lichenoides chronica**

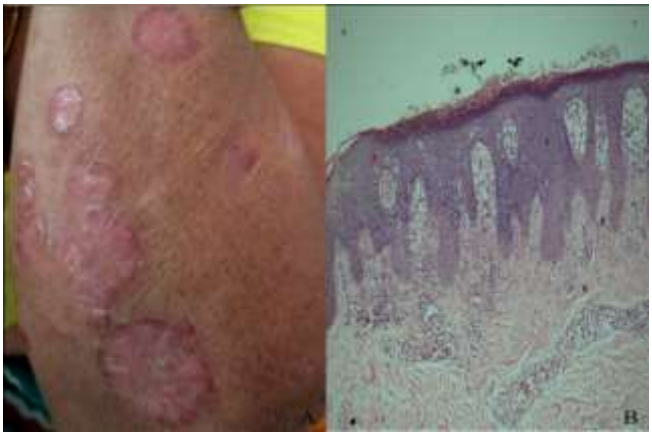

**Fig. 4: (A) Lichen striatus, (B) Lymphohistiocytic infiltrate in papillary dermis, around hair follicles & eccrine glands**

## DISCUSSION

Response to various pathological stimuli leads to various tissue reaction patterns which show different sets of clinical features which may have similar histopathological findings. Clinico-histopathological correlation may be useful in evaluating different group of cutaneous disorders of same tissue pattern reaction.

Histopathological study is considered to be the gold standard for the diagnosis of skin lesions. The goal of improving diagnostic specificity will be achieved by a detailed correlation of histopathological findings with physical findings and clinical history [3]. Skin biopsies are easy to perform, can be done under direct visual control, allow precise clinic-histopathological correlation and accordingly, the significance of skin

biopsies is very high. On the basis of the diagnosis, therapy and follow up are determined.

Total 179 patients of clinically diagnosed as papulosquamous disorders were included in this study and skin biopsies were taken at institute during June 2009 to June 2014.

Lichen planus showed female preponderance in our series and has been also described as such in the literature [4, 5]. We found a male preponderance in cases of psoriasis, Bell *et al*. [6] found a female preponderance and Fry [7] found no sex predilection.

Lichen planus presented as flat topped, violaceous to erythematous lesions over the extremities and trunk which is classically described by authors [4, 5, 8]. As far as histology is concerned, 39 cases of clinically diagnosed lichen planus showed hyperkeratosis, hypergranulosis, sometimes focally, irregular acanthosis, vacuolar degeneration of the basal layer and a band-like infiltrate in the papillary dermis. Boyd *et al*. [4] described similar histopathological findings with addition of Max Joseph spaces and civatte bodies. Shaiet *et al*. [8] also described similar findings. Malignant degeneration was not seen in any case, which are described in the literature [5, 9]. Francis A. Ellis [10] in 1967 studied histopathology of hundred cases of lichen planus based on biopsy specimens and showed 100% clinic-histopathological correlation. In this study, we found 92.9% positive clinico-histopathological correlation in 39 patients of clinically diagnosed lichen planus which was maximum positive clinic-histopathological correlation in our study data analysis (Fig. 1).

27 patients of psoriasis vulgaris presented as erythematous sharply demarcated plaques covered with silvery scales over the buttocks, ankles, soles and shin, like other authors have described [11]. Guttate psoriasis and pustular psoriasis were also included in the study. We had 20 cases of psoriasis in which histology revealed hyperkeratosis, parakeratosis, irregular thinning and focal elongation of the rete ridges, Munro's micro abscesses, dermis showed a dense chronic perivascular and periadnexal infiltrate in plaque psoriasis. Similar findings have been described by various authors [6, 11]. There was a positive correlation of clinical diagnosis with histopathological diagnosis in 74% cases (Fig. 2) and gave the negative diagnosis in 26% cases.

We found 57.1 % positive clinic-histopathological correlation in clinically diagnosed pityriasis rosea while 42.9% had no changes of or suggestive of other disease. 1 out of four patients showed psoriasiform changes while other showed lichen planus like changes. I found 60 % positive clinico-histopathological correlation in clinically diagnosed Pityriasis lichenoides et varioliformis acuta and 40 % of patients showed negative clinico-histopathological correlation. Hood and Mark [12] found 38% positive correlation in Pityriasis lichenoides et varioliformis acuta. In this study 80 % positive clinic-histopathological correlation found in clinically diagnosed Pityriasis lichenoides chronic (Fig. 3) which was based on the set of criteria proposed by Akerman [13]. The positive clinic-histopathological correlation of 50 % in clinically diagnosed lichen striatus patients, absolutely matched with the findings of Gianotti *et al*. [14] (Fig. 4). We found 76.2% positive clinic-histopathological correlation in seborrheic dermatitis. Wu H *et al*. [15] stated that histological picture of seborrheic dermatitis lies half way between psoriasis and spogiotic dermatitis. Clinically diagnosed sub acute cutaneous lupus erythematosus patients showed 60 % of positive clinic-histopathological correlation and 40% didn't show histopathology of sub acute cutaneous lupus erythematosus. In contrast, Jerdan *et al*. [16] showed 50% of positive correlation. Out of 3 clinically diagnosed secondary syphilis (papulosquamous variant), only 1(33.3%) patient showed few plasma cells infiltration while 2 (66.7%) patients showed no specific changes leading to no definitive opinion. In this study only 3 patient of drug reaction had papuloaquamous like lesion. Histopathology showed necrotic keratinocytes, focal parakeratosis and few eosinophils suggestive of drug reaction. In this study 8(32%) patient out of 25clinically diagnosed psoriasiform eczema showed diagnostic histopathology of psoriasiform eczema while 17(68 %) patients showed no specific histopathological finding suggestive of psoriasiform papulosqumaous disorder. We found least positive clinic-histopathological correlation in psoriasiform lesion. In our study we found 68.72% positive & 31.28% negative clinico-histopathological correlation. D' costa *et al*. [17] reported 97.52% positive & 2.48% negative clinico-histopathological correlation.

## CONCLUSION

Our study was designed to explore the hypothesis that certain tissue reaction patterns mechanisms might be common in the papulosquamous disorders and it lead to new approaches for better understanding of their etiopathogenesis and management of same group of disorders.

Interestingly, we found two types of tissue reaction pattern lichenoid and psoriasiform in papulosquamous disorders. Prototypic disease of lichenoid group is Lichen planus while in psoriasiform group is psoriasis vulgaris. More studies of histopathology of papulosquamous disorders are required for the confirmation of involving two types of tissue reaction pattern-lichenoid and psoriasiform.

**REFERENCES**


1. Fox BJ, Odom RB; Papulosquamous diseases: a review. J Am Acad Dermatol., 1985; 12(4): 597-624.
2. Norman RA, Blanco PM; Papulosquamous diseases in the elderly. Dermatol Ther., 2003; 16(3): 231-242.
3. Elder DE, Elenitsas R, Johnson BL Jr, Murphy GE, Xu X, editors; Introduction to dermatopahologic diagnosis. In Lever's histopathology of the skin. 10th edition, Wolters Kluwer (India) Pvt. Ltd., New Delhi, 2009.
4. Boyd AS, Neldner KH; Lichen planus. J Am Acad Dermatol., 1991; 25(4): 593-619.
5. Vega ME, Waxtein L, Arenas R, Hojyo T, Dominguez-Soto L; Ashy dermatosis and lichen planuspigmentosus: a clinicopathologic study of 31 cases. Int J Dermatol., 1992; 31(2): 90-94.
6. Bell LM, Sedlack R, Beard CM, Perry HO, Michet CJ, Kurland LT; Incidence of psoriasis in Rochester, Minn, 1980-1983. Arch Dermatol., 1991; 127(8): 1184-1187.
7. Fry L; Psoriasis. Br J Dermatol., 1988; 119(4): 445-461.
8. Shai A, Halevy S; Lichen planus and lichen planus-like eruptions: pathogenesis and associated diseases. Int J Dermatol., 1992; 31(6): 379-384.
9. Bhutani LK, Bedi TR, Pandhi RK, Nayak NC; Lichen planuspigmentosus. Dermatologica, 1974; 149(1): 43-50.
10. Ellis FA; Histopathology of lichen planus based on analysis of one hundred biopsy specimens. J Invest Dermatol., 1967; 48: 143-148.
11. Griffiths CE, Christophers E, Barker JN, Chalmers RJ, Chimenti S, Krueger GG *et al*.; A classification of psoriasis vulgaris according to phenotype. Br J Dermatol., 2007; 156(2): 258-262.
12. Hood AF, Mark EJ; Histopathologic diagnosis of pityriasisl ichenoides et varioliformis acuta and its clinical correlation. Arch Dermatol., 1982; 118(7): 478-482.
13. Ackerman AB; Differntial diagnosis in dermatopathology. Lea and Febiger, Philadelphia, 1982.
14. Gianotti R, Restano L, Grimalt R, Berti E, Alessi E, Caputo R; Lichen striatus--a chameleon: an histopathological and immunohistological study of forty-one cases. J Cutan Pathol., 1995; 22(1): 18-22.
15. Wu H, Harrist TJ, Branding-Bennett HA; Noninfectious vesiculobullous and vesiculopustular diseases. In Elder DE editor; Lever's histopathology of the skin. 10th edition, Wolters Kluwer (India) Pvt. Ltd., New Delhi, 2010: 235-278.
16. Jerdan MS, Hood AF, Moore GW, Callen JP; Histopathologic comparison of the subsets of lupus erythematosus. Arch Dermatol., 1990; 126(1): 52-55.
17. D' Costa G, Bharambe BM; Spectrum of non-infectious erythematous, papular and squamous lesions of the skin. Indian J Dermatol., 2010; 55(3): 225-228.