

Correlation between Clinical and Histopathological Diagnosis in Noninfectious Erythematous Papulosquamous Lesions of the Skin at a Tertiary Care Hospital

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Received: 20-03-2023 / Revised: 21-04-2023 / Accepted: 30-05-2023

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Conflict of interest: Nil

Abstract

Background: Papulosquamous diseases are characterized by scaly papules and plaques with similar clinical features which causes diagnostic confusion.

Aim: The aim of the study was to correlate clinical diagnosis with histopathological diagnosis in various noninfectious erythematous papulosquamous skin lesions.

Method: Skin biopsy specimens clinically diagnosed/suspected non-infectious erythematous papulosquamous skin diseases were studied in the Department of Pathology. Samples were subjected to hematoxylin and eosin staining.

Results: Out of 100 samples studied, Lichen planus consists 50 cases is the commonest group, followed by Psoriasis of 30 cases, Pityriasis lichenoides of 8 cases, Pityriasis rubra pilaris of 4 cases, Pityriasis rosea of 3 cases, Parapsoriasis of 2 cases, Lichen striatus of 2 cases, and Lichen nitidus of one case respectively. The predominant histopathological finding in lichen planus was band like infiltrate in the dermoepidermal junction and the predominant histopathological finding in psoriasis is acanthosis. The study involved 50 cases of Lichen planus, in which 46 cases showed positive clinicopathological correlation. The study involved 30 cases of Psoriasis, in which 24 cases showed positive clinicopathological correlation. There is 100% clinicopathological correlation in Pityriasis lichenoides, Pityriasis rubra pilaris, Pityriasis rosea, Parapsoriasis, Lichen striatus and Lichen nitidus. 90% of clinically diagnosed papulosquamous lesions were correlated with histopathological diagnosis. These findings along with other specific findings and clinical correlation were used to give a conclusive diagnosis.

Conclusion: Lichen planus was the commonest papulosquamous lesion. Good clinicopathological correlation is very much necessary for diagnosis. Hence a combination of proper clinical observation and histopathological study will give a conclusive diagnosis.

Keywords: Papulosquamous, Clinicopathological Correlation, Lichen Planus, Hematoxylin and Eosin.

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Introduction

Papulosquamous lesions are characterized by formation of papules which coalesce to

form plaques.[1] These lesions are generally erythematous, and they tend to form scales. The underlying etiology

remains varied. Clinical examination and diagnosis of the cases is often overlapping. Few of these papulosquamous conditions present with numerous clinical variants and mimic various dermatological conditions, which leads to a diagnostic dilemma. The diagnosis confirmation by histopathology remains the gold standard.[2] Specific histomorphological findings in correlation with the clinical features gives a confirmed diagnosis. This may be necessary as the treatment and prognosis of different conditions is varied.

Distinct histopathological features and clinical correlation gives a conclusive diagnosis.[3] The correlation of clinical diagnosis with the histopathological findings is not only of diagnostic help, but also aids in understanding of the mechanisms of skin diseases.

Various dermatoses need to be included in the differential diagnosis of a papulosquamous eruption. Clinical with histomorphological correlation and a definitive histopathological diagnosis are essential as treatment and prognosis varies.[4-6]

The aim of this study is to correlate the clinical findings with histopathological features of noninfectious erythematous papulosquamous lesions of the skin.

Materials and Methods

Study includes total of 100 clinically diagnosed/suspected and untreated cases of

noninfectious erythematous papulosquamous lesions. The study was conducted after the approval by Institutional Ethical Committee.

Biopsy of clinically diagnosed/suspected cases of non-infectious erythematous papulosquamous lesions were performed in the Department of Dermatology and sent to the Department of Pathology in 10% neutral buffered formalin.

The punch was pushed into the skin with a downward twisting movement, and then removed. The tissue sample was separated from the underlying tissue, and removed from the biopsy punch.

Skin disorders with infective etiology, skin lesions other than papulosquamous disorders and treated cases are excluded.

Biopsy was taken into 10% formalin. After routine processing and embedding, paraffin blocks were prepared. 5-7 μ thick sections were obtained and stained with hematoxylin and eosin staining. H&E sections were studied and correlated with clinical features.

Results

In the present study, Lichen planus consists 50 cases is the commonest group, followed by Psoriasis of 30 cases, Pityriasis lichenoides of 8 cases, Pityriasis rubra pilaris of 4 cases, Pityriasis rosea of 3 cases, Parapsoriasis of 2 cases, Lichen striatus of 2 cases, and Lichen nitidus of one case respectively.

Table 1: Clinical diagnosis in histologically diagnosed cases of Lichen planus

Clinical diagnosis / Differential diagnosis	Frequency (n)
Lichen planus as definitive diagnosis	35
Lichen Planus as a differential diagnosis	11
Lichen simplex chronicus	1
Prurigo nodularis	1
Eczema	1
Lichen sclerosus et atrophicus	1

Among 50 cases, 46 were clinically diagnosed and confirmed by histopathology. 4 cases had different clinical diagnosis.

Table 2: Clinical diagnosis in histologically diagnosed cases of Psoriasis

Clinical diagnosis/Differential diagnosis	Frequency (n)
Psoriasis as definitive diagnosis	22
Psoriasis as a differential diagnosis	2
Lichen planus – Psoriasis overlap lesions	2
Psoriasiform dermatitis	1
Follicular Lichen planus	1
Chronic eczema	1
Seborrheic dermatitis	1
Parapsoriasis	1
Pityriasis lichenoides chronica	1
Total	30

Among 30 cases 24 were clinically diagnosed as Psoriasis and confirmed by histopathology. 6 cases had varied clinical diagnosis.

Pityriasis Rosea

Most common histopathological findings in epidermis were hyperkeratosis, intraepidermal spongiosis, encrusted neutrophils and red cells in stratum corneum along with necrotic keratinocytes. Dermis showed superficial perivascular inflammatory infiltrate and extravasated erythrocytes.

All the three cases were diagnosed both clinically and histopathologically as Pityriasis rosea. Two cases had PR as one of the differential diagnosis. Other differential diagnosis offered clinically was Psoriasis.

Lichen Striatus

Most prominent histopathologic findings in epidermis were mild acanthosis, spongiosis

with exocytosis, focal parakeratosis, vacuolar alteration of basal layer, necrotic keratinocytes.

Dermal changes were perivascular chronic inflammatory infiltrate, perifollicular inflammatory infiltrate and pigment incontinence.

Lichen Nitidus

Most prominent histopathologic findings in epidermis were elongated rete with claw clutching ball appearance, epidermal flattening, subepidermal clefting. Upper dermis showed granuloma containing lymphocytes and histiocytes and pigment incontinence.

Most prominent histopathologic findings in epidermis were elongated rete with claw clutching ball appearance, epidermal flattening, subepidermal clefting.

Upper dermis showed granuloma containing lymphocytes and histiocytes and pigment incontinence.

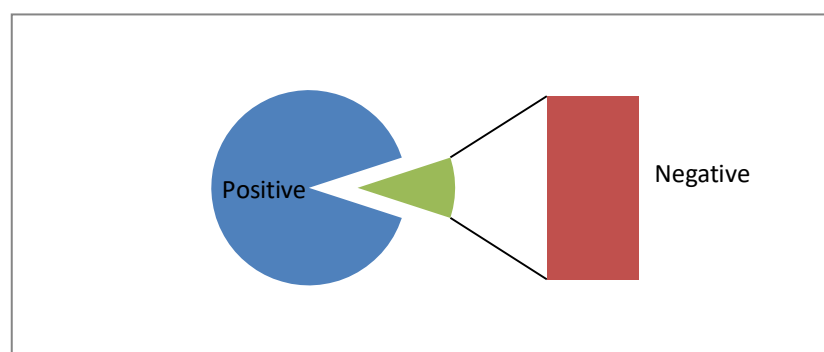


Figure 1: Pie diagram showing clinicopathologic correlation

90% percent of clinically diagnosed papulosquamous lesions were correlated with histopathological diagnosis.

Table 3: Correlation of histopathological and clinical diagnosis in noninfectious papulosquamous skin diseases

Clinical Diagnosis	2 or more differential diagnosis	Histopathological Diagnosis							
		LP	PS	PL	PRP	PR	PP	LS	LN
LP	11	46	1	-	-	-	-	-	-
PS	2	-	24	-	-	-	-	-	-
PL	4	-	1	8	-	-	-	-	-
PRP	2	-	-	-	4	-	-	-	-
PR	1	-	-	-	-	3	-	-	-
PP	2	-	1	-	-	-	2	-	-
LS	2	-	-	-	-	-	-	2	-
LN	1	-	-	-	-	-	-	-	1
	25								

Degree of clinicopathological correlation was highest in Pityriasis lichenoides, Pityriasis rubra pilaris, Pityriasis rosea, Parapsoriasis, Lichen striatus and Lichen nitidus followed by Lichen planus and least in Psoriasis.

Table 4: Comparison of histopathological diagnosis of Lichen planus and its clinical diagnosis

Clinical diagnosis / Differential diagnosis	Frequency (n)
Lichen planus as definitive diagnosis	35
Lichen Planus as a differential diagnosis	11
Lichen simplex chronicus	1
Prurigo nodularis	1
Eczema	1
Lichen sclerosus et atrophicus	1

Discussion

In the present study 50 cases were histologically diagnosed as Lichen planus. 35 of them were clinically diagnosed and confirmed histologically. 11 cases had Lichen planus as one of the differential diagnosis. 4 cases had clinically different diagnosis. 46 out of 50 cases showed clinicopathological correlation.

Table 5: Comparison of histopathological diagnosis of Psoriasis and its clinical diagnosis

Clinical diagnosis / Differential diagnosis	Frequency (n)
Psoriasis as definitive diagnosis	22
Psoriasis as a differential diagnosis	2
Lichen planus – Psoriasis overlap lesions	2
Psoriasiform dermatitis	1
Follicular Lichen planus	1
Chronic eczema	1
Seborrheic dermatitis	1
Parapsoriasis	1
Pityriasis lichenoides chronica	1
Total	30

In the present study, 30 cases were histologically diagnosed as Psoriasis. Twenty two out of 30 were clinically diagnosed (without differential diagnosis) and confirmed histologically. 2 cases had Psoriasis as one of the differential diagnosis. Two cases were clinically designated as Lichen planus - Psoriasis overlap. Most common differential offered for Psoriasis was Lichen planus. Six cases had differing clinical diagnosis like Psoriasiform dermatitis, follicular LP,

chronic eczema, Seborrheic dermatitis, Parapsoriasis, Pityriasis lichenoides chronica.

Twenty four out of 30 cases showed clinicopathological correlation. The rest six cases were having no clinical correlation as there was an overlap of both clinical pattern and distribution of lesions of Psoriasis making clinical diagnosis difficult. Hence histopathological diagnosis is considered as gold standard in such cases.

Table 6: Comparison of histopathological diagnosis of Pityriasis lichenoides and its clinical diagnosis

Clinical diagnosis / Differential Diagnosis	No. of cases
PLC as definitive diagnosis	1
PLEVA as definitive diagnosis	3
Pityriasis lichenoides as a differential diagnosis	4
Total	8

In the present study, four cases were clinically diagnosed (without differential diagnosis) and confirmed histologically. Four cases had Pityriasis lichenoides as one of the differential diagnosis. All the eight cases were showing same diagnosis both clinically and histologically. Therefore 100% clinicopathological correlation was seen.

and confirmed histologically. The rest two had PRP as one of the differential diagnosis. Other differential diagnoses provided were Erythroderma varioliformis, Pityriasis rotunda, Photo dermatitis and Lichen planus. All the four cases were showing same diagnosis both clinically and histologically. Therefore to summarize all the cases showed clinicopathological correlation.

In the present study of 2 cases of parapsoriasis, both the cases had parapsoriasis as one of the differential diagnosis. Pityriasis versicolor was offered as the differential diagnosis in both the cases. Both cases were showing correlating diagnosis both clinically and histologically.

In the present study two cases were clinically diagnosed and confirmed histologically (Pityriasis rosea). The other case had Pityriasis rosea as one of the differential diagnosis along with Psoriasis. To conclude clinicopathological correlation was seen in all cases.

Two of four cases were clinically diagnosed

Table 7: Correlation of histopathological and clinical diagnosis in individual disease

Clinical Diagnosis	2 Or More Differential Diagnosis	Histopathological Diagnosis							
		LP	PS	PL	PRP	PR	PP	LS	LN
Lichen planus (LP)	11	46	1	-	-	-	-	-	-
Psoriasis (PS)	2	-	24	-	-	-	-	-	-
Pityriasis lichenoides (PL)	4	-	1	8	-	-	-	-	-
Pityriasis rubra pilaris (PRP)	2	-	-	-	4	-	-	-	-
Pityriasis rosea(PR)	1	-	-	-	-	3	-	-	-

Parapsoriasis (PP)	2	-	1	-	-	-	2	-	-
Lichen striatus (LS)	2	-	-	-	-	-	-	2	-
Lichen nitidus (LN)	1	-	-	-	-	-	-	-	1
	25								

50 cases were diagnosed as LP histopathologically. 35 were having LP as clinical diagnosis, 11 had LP as one of the differential diagnosis. Four cases had differing clinical diagnosis. The diagnosis of LP usually is made from the characteristic clinical appearance and distribution of the lesion.⁷ However LP must be differentiated from other papulosquamous diseases like psoriasis and

others.⁷¹ Hence confirmation with a skin biopsy is always warranted to exclude other papulosquamous disorders.

25 out of 100 cases had 2 or more clinical differential diagnosis and they were diagnosed on histopathology, which need histopathological study to offer a more definitive diagnosis.

Table 8: Correlation of clinical diagnosis with histopathological diagnosis in noninfectious papulosquamous skin diseases

Clinical correlation	Number of biopsies
Positive	90 (90%)
Negative	10 (10%)
Total	100

Younas and Haque⁸ (2004) studied 38 cases, 29 (76.30 %) of which showed compatible clinical as well as histopathological diagnoses.

D' Costa et al^[9] (2010) studied 161 cases. Correlation with the histopathological diagnosis was positive in 97.52% cases.

Raju et al^[10] (2015) studied 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 differed from clinical judgment.

In a study by Faraz et al (2015) 67.5% of clinically diagnosed cases of papulosquamous lesion were confirmed.¹¹

Chichani et al^[12] (2016) studied 78 cases, 57% of the clinically diagnosed cases of papulosquamous lesion were confirmed histologically.

Hosamane et al^[13] (2016) studied 150 cases, only 46.67 of which correlated

histologically.

In the present study 90% of clinically diagnosed papulosquamous lesions were correlated with histological diagnosis.

Conclusion

All the papulosquamous diseases present with similar clinical features like scaling papules and plaques. There was overlap of clinical presentation and distribution of lesions in these diseases, which often make clinical diagnosis difficult. A conclusive histopathological diagnosis by clinicopathological correlation serves as an ideal approach. We studied the role of clinicopathological correlation for accurate diagnosis, which leads to effective clinical management and better clinical outcome.

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