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KEY WORDS:
Papulosquamous dermatoses; Vesiculobullous lesions; Clinicopathological correlation

PAPULOSQUAMOUS AND VESICULOBULLOUS DERMATOSES: A CLINICOPATHOLOGICAL CORRELATION STUDY

Dr. Devangi Chandra

Post PG Resident, Department of Pathology, Gandhi Medical College, Bhopal.

ABSTRACT

Papulosquamous and vesiculobullous dermatoses constitute a heterogeneous group of non-neoplastic skin disorders with overlapping clinical features, often posing diagnostic challenges. Histopathological examination remains the gold standard for accurate diagnosis and differentiation of these entities. **Aim:** To study the clinicopathological spectrum of papulosquamous and vesiculobullous dermatoses and to assess the degree of clinicopathological correlation. **Materials And Methods:** This was a descriptive, observational study conducted in the Department of Pathology at Gandhi Medical College, a tertiary care centre. Skin biopsy specimens diagnosed as papulosquamous and vesiculobullous dermatoses were included. Relevant clinical details such as age, sex, site, duration, and provisional clinical diagnosis were recorded. Histopathological examination was performed using routine hematoxylin and eosin-stained sections. Clinicopathological correlation was assessed by comparing clinical and histopathological diagnoses. **Results:** A total of 47 cases were studied. Papulosquamous dermatoses were more common than vesiculobullous lesions. The most frequently encountered papulosquamous lesion was Psoriasis, while Dermatitis was the most common vesiculobullous disorder. Overall clinicopathological concordance was observed in 80.8% cases. Higher concordance was noted in classical papulosquamous lesions, whereas vesiculobullous disorders showed greater diagnostic variability due to overlapping clinical presentations. **Conclusion:** Clinicopathological correlation plays a crucial role in the accurate diagnosis of papulosquamous and vesiculobullous dermatoses. Histopathological evaluation is indispensable, particularly in clinically ambiguous cases, and significantly enhances diagnostic accuracy, guiding appropriate patient management.

INTRODUCTION

The prevalence and pattern of skin diseases are influenced by the overall ecosystem of the region including level of literacy, social backwardness, varied climate, industrialization, access to primary health care, different religious rituals, cultural factors, and nutrition and genetics. Knowing the exact nature of a non-neoplastic lesion enables clinicians to choose the best course of treatment. For example, inflammatory skin conditions may be managed with topical steroids, immunosuppressive therapies, or lifestyle changes. Infectious causes may require antibiotics, antifungals, or antivirals, depending on the microorganism involved. The ability to accurately identify these conditions ensures that patients receive appropriate and targeted treatment, improving outcomes. The histopathologic diagnosis is used by clinicians to aid in the management of patients. The most accurate diagnosis is the one that most closely correlates with clinical outcome and helps to direct the most appropriate clinical intervention thus depicting a close relationship between diagnosis and prognostification (1). Although histopathology remains the gold standard for most dermatologic diagnosis,it must be recognized that not all lesions are amenable to definitive "specific" histologic diagnosis.(1)

Vesiculobullous diseases are a group of disorders in which the primary lesion is a vesicle or a bulla on the skin or mucous membrane or both. (2) Though some of the vesiculobullous lesions are characteristic in their appearance and distribution, clinically many a times a definitive diagnosis cannot be made by physical examination alone. Basic histopathological study is helpful in knowing the level of cleavage in the bulla, mechanism of blister formation, the character of inflammatory infiltration, condition of epidermis and dermis lend a possible clue to the etiology and stage of the disease. (2) Papulosquamous diseases characterized by scaling papules or plaques compose the conglomerate group of diseases seen by the dermatologist. These assume considerable importance because of their frequency of occurrence (3)

MATERIALS AND METHODS

The study was conducted in the Department of Pathology, Gandhi Medical College, & Associated Hospitals Bhopal for a period of 2 years. Samples were received in the Department of Pathology, as formalin fixed tissue samples/biopsies of skin from the Department of Dermatology. A detailed history with clinical presentation, duration and site of symptoms along with the clinically probable differential diagnosis was noted.

Inclusion Criteria:
All skin biopsy specimens received in the Department of Pathology with the clinical diagnosis of Non neoplastic skin lesions.

Exclusion Criteria:
Patients on topical steroids or anti-inflammatory drugs for lesions as they suppress inflammatory response; Patients with healed lesions.

History regarding age, sex, site, type of the lesion and clinical classification was noted. Skin specimens fixed in 10% formalin, processed and sectioned. Slides were stained by Hematoxylin-Eosin (HE) and the lesions were classified histopathologically and were clinically correlated.

RESULTS

The present study included 47 cases of which 30 cases were of papulosquamous diseases and 17 cases of vesiculobullous lesions attending dermatology OPD . Out of 47 cases, 26 were males and 21 females. The male to female ratio was 1.23:1 (Table 1). 38 (80.85 %) cases showed compatible clinical as well as histopathological diagnoses.

Table 1 : GenderWise Distribution

Sex Distribution	Frequency	Percentage
Male	26	55.3%
Female	21	44.7%

The age of the patients ranged from 8 years to 74 years. Majority of the patients, 19 were in the age group below 30 years (40.4%), followed by 15 (31.9%) between 31-50 yrs and 13 (27.7%) above 51years (Table 2).

Table 2 : AgeWise Distribution

Age Distribution	Frequency	Percentage
< 30 years	19	40.4%
31-50 years	15	31.9%
>50 years	13	27.7%

Among the papulosquamous diseases (Table 3) Psoriasis

(Figure 1 and 2) was the most common condition, accounting for 43.5% (n=13) of cases. This was followed by lichen planus, which was reported in 26.7% (n=8) of the total in this category. Pityriasis lichenoides chronica was the next most prevalent condition, contributing to 10% (n=3) of cases. Additionally, a single case each of lichen nitidus, lichen planus pemphigoid, erythema annulare, ashy dermatosis, and urticaria was documented, with each constituting 3.3% of the total caseload. This distribution highlights the predominance of psoriasis and lichen planus among non-infectious erythematous, papular, and squamous diseases, while also emphasizing the occurrence of rarer dermatological conditions within this group.

Table 3 : Spectrum Of Papulosquamous Disorders

Papulosquamous disorders	Frequency	Percentage
Psoriasis	13	43.5%
Lichen Planus	8	26.7%
Pityriasis Lichenoid Chronicus	3	10%
Pityriasis Rosea	1	3.3%
Lichen nitidus	1	3.3%
Erythema Annulare	1	3.3%
Ashy dermatoses	1	3.3%
Urticaria	1	3.3%
TOTAL	30	100%

Figure 1: Psoriasis - Clinical Presentation

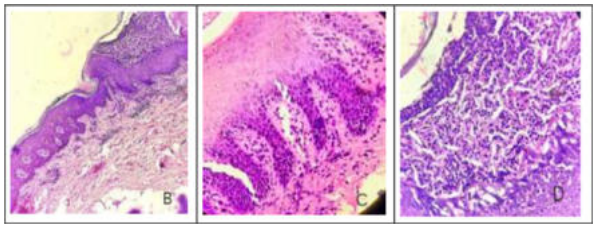

Figure 2: Psoriasis - Histopathological Findings
B (H&E 10x): Stratified squamous epithelium showing features of hyperkeratosis and acanthosis along with suprapapillary thinning at few foci
C (H&E 40x): Bulbous rete ridges with dermal papillae containing vessels
D (H&E 40x): Neutrophilic abscess (Munro's abscess) in stratum corneum

Within vesiculobullous and vesiculopustular diseases (Table 4), dermatitis (Figure 3 and 4) was the most frequently observed condition, accounting for 47.05% (n=8) of the total cases. Pemphigus was the second most prevalent entity, reported in four cases, making up 23.52% (n=4) of the cases in this category. This was followed by bullous pemphigoid, which contributed to 17.64% (n=3) of the caseload. Additionally, one case each of erythema multiforme and toxic epidermal necrosis was documented, contributing 5.88% each. Acute and subacute dermatitis were the most frequently occurring subtypes within the dermatitis category, with each being reported in 2 cases, accounting for 25% of the total dermatitis cases individually. Additionally, one case each of chronic dermatitis, psoriasiform dermatitis, psoriasiform drug eruption, and interface dermatitis was observed, with each contributing 12.5% to the total dermatitis cases. This distribution highlights the varied clinical presentations of dermatitis, with acute and subacute forms being the most prevalent, while other subtypes, including drug-induced and interface dermatitis, were less commonly encountered.

Table 4: Spectrum of Vesiculobullous Disorders

Vesiculobullous disorders	Frequency	Percentage
Dermatitis	8	47.05%
Pemphigus	4	23.52%
Bullous pemphigoid	3	17.64%
Erythema multiforme	1	5.88%
Toxic Epidermal Necrosis	1	5.88%
TOTAL	17	100%

Figure 3: Dermatitis - Clinical picture

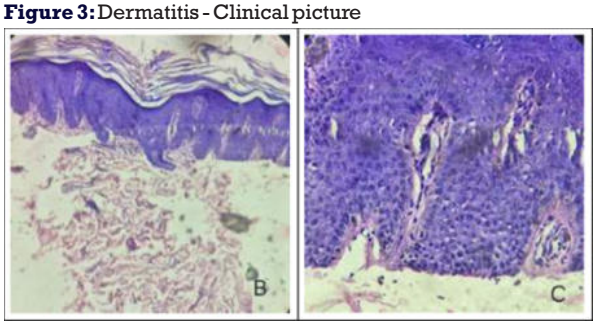

Figure 4 : Dermatitis - Histopathological findings
B (H&E 10x) : Epidermal Hyperkeratosis, Acanthosis and Elongation of the rete ridges
C (H&E 40x) : Mild spongiosis with intraepidermal vesicle formation

DISCUSSION

Among the 30 cases of Non infectious erythematous, papular and squamous disorders, the most common lesion observed was Psoriasis (n=13; 43.5%), followed by Lichen planus (n=8; 26.7%), followed by Pityriasis lichenoid chronicus (n=3; 10%). One case each of Pityriasis rosea, Lichen nitidus, Lichen planus pemphigoid, Erythema annulare, Ashy dermatosis and Urticaria, with each contributing to 3.33% were reported.

Similar findings were observed by Dawande P et al (4) with the most common lesions among this category being Psoriasis (n=2; 4%). 1 case each of Lichen planus, Pityriasis rosea and Urticaria were also reported, each contributing to 2% cases. Gupta I et al (1) also reported similar observations with 16 cases (24.96%) of Psoriasis followed by 15 cases (23.4%) of Lichen planus. 5 cases (7.8%) of Ashy dermatosis and 2 cases (3.12%) of Pityriasis lichenoid chronicus were reported. Similar findings, with Psoriasis being the commonest entity, was also observed by Veldurthy VS et al (5) , with 11 cases corresponding to 11.95% cases. 7 cases of Pityriasis rosea were reported. Gupta P et al (6) reported Psoriasis as the most common entity (n=24; 54.54%) followed by Lichen planus (n=19; 43.18%).

In contrast, in a study done by Adhikari RC et al (7) Erythema dyschromicum perstans (Ashy dermatosis) was the most commonly reported lesion with 86 cases, attributing to 31.8% of the total cases, followed by Psoriasis (n=79; 29.3%), followed by Lichen planus (n=47; 17.4%) and Pityriasis Lichenoid chronicus (n=6; 2.2%). Prurigo Nodularis (n=17; 6.3%), Pityriasis rosea and Parapsoriasis (n=7 each; 2.6% contribution each) were also reported. 5 cases (1.9%) of Urticaria were noted among others.

Amongst Vesiculobullous and vesiculopustular lesions, dermatitis was the most prevalent, accounting for 8 cases (47.05%). This was followed by pemphigus, with 4 cases (23.52%), and bullous pemphigoid, with 3 cases (17.64%). Additionally, 1 case (5.88%) each of erythema multiforme and toxic epidermal necrosis was observed. Similar to the current study, Adhikari RC et al. (7) also found dermatitis to be the most common entity, representing 252 out of 297 cases (84.8%) in this category. However, the second most common lesion was lichen simplex chronicus, with 23 cases (7.7%). Gupta I et al. (1) similarly reported dermatitis as the most common entity, with 14 cases (40%), while pemphigus, including vulgaris, vegetans, and foliaceous forms, was seen in 13 cases (37.1%), followed by 4 cases (11.4%) each of bullous pemphigoid and erythema multiforme. In contrast, Dawande P et al. (4) reported pemphigus vulgaris as the most common lesion (5 cases; 10%), followed by subepidermal bullous disease (2 cases; 4%) and spongiotic dermatitis (1 case; 2%). Gupta P et al. (6) also identified pemphigus as the most common entity (3 cases; 50%).

Acute and subacute dermatitis were the most frequently occurring subtypes within the dermatitis category, with each reported in 2 cases (25%), accounting for 25% of the total dermatitis cases individually. Additionally, 1 case (12.5%) each of chronic dermatitis, psoriasiform dermatitis, psoriasiform drug eruption, and interface dermatitis was observed, with each contributing 12.5% to the total dermatitis cases.

CONCLUSION

Papulosquamous and vesiculobullous dermatoses often present with overlapping clinical features, making accurate clinical diagnosis challenging. This study demonstrates that histopathological evaluation significantly enhances diagnostic accuracy and plays a pivotal role in achieving clinicopathological concordance. Early biopsy and close collaboration between clinicians and pathologists can improve diagnostic precision and guide effective patient management.

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