Histopathological spectrum of non-infectious erythematous, papulo-squamous lesions

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ABSTRACT

Background: Papulosquamous diseases assume considerable importance because of their frequency of occurrence. Separation of each of these becomes important because the treatment and prognosis for each tends to be disease specific. Aim of study is histopathology of non infectious erythematous, papulo-squamous lesions of skin and age and sex distribution with incidence**. Materials and methods**: In present study 200 cases of all age and sex who have come with non-infectious erythematous papulosquamous skin disorders were examined and included 80 cases skin biopsies were taken. Study was done for a period of one year from June 2012 to May 2013. **Results**: Out of 80 cases, 62 were males and 18 females. 69 (86.50 %) cases showed compatible clinical as well as histopathological diagnoses .In skin biopsies evaluation psoriasis is higher 34(42.5%) followed by lichen planus 24(30%). **Conclusion**: Age group of 31-40 years was more affected with papulo-squamous lesions. Sex distribution pattern revealed a male preponderance. Psoriasis constitutes major skin lesions cases followed by lichenplanus. Clinical and histopathological diagnosis correlated in majority of cases Histopathological diagnosis is important as it effects the clinical management.

Key-words: Papulosquamous lesions, Psoriasis, Lichen planus Polymorphic light eruptions.

Introduction

As for any other organ system, diagnosis of skin disease involves history and examination. The visibility of skin allows an instant diagnosis in some cases, using a variety of visual clues such as site distribution, color, scaling and arrangement of lesions. Such apparently effortless pattern recognition is actually quite complex when the individual components are analyzed separately.[1]

The frequency of occurrence of erythematous, papulosquamous diseases is high. It is feasible to consider them in a group because all of them are characterized by similar morphological characteristics· Therefore histopathological reporting should be accompanied with detailed clinical history as many of the lesions share similar histopathological features while clinically they present as different entities.[2] Histopathology is highly specific and sensitive for many lesions and it remains the gold standard for most dermatological diagnosis. [3]

Pathological studies have documented the extent of spread of various skin lesions and have made significant contribution to the understanding of etiology and pathogenesis. 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. Separation of each of these becomes important because the treatment and prognosis for each tends to be disease specific.The spectrum of clinical disease related to non-infectious erythematous, papular and squamous lesions namely psoriasis, para psoriasis, lichen planus,prurigo simplex, prurigo nodularis, pityriasis rosea, pityriasis rubra

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pilaris and many more. Few papulosquamous conditions, like psoriasis mimic diverse dermatological conditions as they present with numerous clinical variants and pose to be a diagnostic dilemma for the clinician. Some conditions like lichen planus are well defined in general population, however their pathogenesis is not exactly defined[5]. In such diseases studies are lacking in India and hence a histopathological study for clinical correlation will help the dermatologist in instituting proper therapy and can vary the prognosis significantly.

Materials and methods

The study was carried out on patients who consulted the Department of Dermatology at Mediciti Institute of Medical Sciences and Hospital during a period of one year from June 2012 to May 2013. It is larger study comprising of more than 200 patients of all age and sex were included.

Inclusion criteria: Cases included in the study are those with features of non-infectious erythematous papulosquamous skin disorders.

Exclusion criteria: Skin disorders with infective etiology and other skin lesions which are not papulosquamous disorders are excluded.

Patients' history such as age, sex and other relevant clinical details such as site of lesion & character were noted/ provided by dermatologist. Wedge biopsy was taken under local anesthesia. The tissue was immediately fixed in 10 % formalin and processed for 24 hours in the tissue processor. The sections were stained by hematoxylin and eosin. The stained sections were systemically evaluated in the weekly clinicopathological conference regularly held in the pathology department with the collaboration of the dermatology department, Informed consent of the patient for the procedure will be obtained by the dermatologists when biopsy is done. Study was approved by ethical committee.

Results

Present study included 200 cases of which 80 cases were papulosquamous diseases attending dermatology OP. Out of 80 cases, 62 were males and 18 females. Out of cases, 69 (86.50 %) showed compatible clinical as well as histopathological diagnoses. Various disease entities studied are detailed below.

Discussion

Out of 200 patients 80 were included in the study, 62 were males and 18 cases were females. Erythematous, papulo-squamous lesions constitute 40% of the total skin biopsies. The age distribution pattern indicated a 23.75% percentage in age group of 31-40 years of which 77.5% were male and 22.5% were females(figure-1) .

In our study 69(86.5%) cases correlate clinically and histological diagnosis 11 are clinically non diagnosed. The present prospective study revealed that the most frequently encountered lesion is psoriasis (42.5%)., common in males26(76.4%) in the age group of 31-40 yrs.Within this group, psoriasis vulgaris had the highest number of lesions (86.64%).followed by chronic plaque psoriasis(3.20%), guttate psoriasis(2.80%) and pustular psoriasis(1.26%) (table-1&3) .

A study done in Pakistan by Yonus M *et al*., reported similar findings with respect to sex distribution and the most common age group of 21 to 30 years[4].The most common lesions were psoriasis (36.8%) and lichen planus (31.5%). and these findings were comparable to the present study. A similar study done in Mumbai , by Bharambe *et al*.[5] showed highest percentage was in the 30-40 year age group (28.6%) with a male preponderance of 60.25%.The study also reported that the most frequently encountered lesion was the lichenoid group (46.57%); followed by psoriasiform lesion (23.60%) .

On histopthological examination of 34 cases of psoriasis , revealed both hyperkeratosis and acanthosis in 82.5% cases, elongation of rete ridges (Camel-foot appearance) in 73.5% cases, supra papillary thinning (38.23%), hypogranulosis (23.5%) and Munro micro abscesses (29.4%). Dermal inflammation and vascular changes (dilated and torturous blood vessels) in 94.1% and 88.20% respectively as the commonest histopathological features(table-4,figure2 and 3). Similar findings were reported in many studies by different authors[6-9].

In the present study psoriasis comprised of 34 cases, clinical and pathological correlation was seen in 32 cases out of 34(94.1% correlation). Non correlated 2 cases were clinically diagnosed as palmoplanter keratoderma and lichen planus.

A prospective study by Shilpa Mehta *et al* involving 100 patients with the single clinical diagnosis of psoriasis (61-group A) and with psoriasis as one of the differential diagnosis(39-group B) and their correlation with histopathological features[10]. In group A out of 61, 42 were histopathologically concordant for psoriasis.8 were psoriasiform dermatitis. The remaining 11 could not be categorized in either of the histological groups. In group B out of 39, 16 were histopathologically concordant for

psoriasis, 15 were psoriasiform dermatitis. The remaining 8 could not be classified in to either of the two groups based on these criteria.

Present study comprised of typical clinical features of psoriasis that is why clinicopathological correlation is maximum. Lichen planus, accounted for 30% of total cases, with male preponderance (83.3%), common in the age group of 31- 40 yrs.(29.1%) Lichen planus constituted the highest percentage of cases i.e. (58.83%) followed by hypertrophic lichen planus (18.67%) lichenplanus pigmentosus (12.50%) and lichen planopilaris(10%). On histopathological examination, the epidermis in all the cases (100%) revealed hyperkeratosis and irregular acanthosis with saw toothed rete ridges. (table-5 and 6) Vacuolar degeneration of basal cells was seen in 79.1% cases, hypergranulosis was seen 66.6%. Max Joseph spaces and Civatte bodies are observed in 20.8%. Dermal changes comprised of band like mononuclear cell type of infiltrate seen in 75% and pigment incontinence were seen in 87.5%(figure-4 and 5) correlates with study by Boyd *et al*., describes Max Joseph spaces and civatte bodies in the epidermis and a recent study by Bharambe *et al*., confirms these findings[5-6].

In the present study of 24 cases of lichen planus clinical and pathological correlation was seen in 21 cases (87.5% correlation). 3 non correlated cases were clinically diagnosed as Lichen simplex chronicus (Table-2). A Clinico histopathological study of 75 cases of lichen planus at Smt. Sucheta Kriplani Hospital and Lady Hardinge Medical College, New Delhi[11]. The commonest affected age group was 31-40yrs. Out of 75 patients; the clinical diagnosis of 55 cases was classical lichen planus, 48 showed classical as it effects the clinical management histopathological features. 7 out of 13 were diagnosed as lichen planus hypertrophicus. The remaining, lichen planus actinicus (03), lichen planopilaris (02) and oral lichen planus (02) were confirmed histopathologically.

A clinico histopathological and etiological study done by K.Dilip *et al* in India show that Out of 375 patients 220 were male and 155 were female[12].The commonest affected age group was 20-39 yrs. Out of 113 biopsies 95 showed histopathological features of lichen planus or its variants, and features of chronic non specific dermatitis was seen in 18 biopsies.

In the present study after psoriasis and lichen planus remaining lesions constitute 27.5%. Among these lesions, pityriasis rubra pilaris constitute 4 cases (5%), purigo nodularis 3(3.75%) , Pityriasis rosea4(5%),para psoriasis3(3.75%), lichen nitidus 3(3.75%),pityriasis lichenoidis3(3.75%), polymorphic light eruption 2(2.5%).(table-1)

Pityriasis rubra pilaris, purigo nodularis and para psoriasis show100%clinical and histopathological correlation, where as pityriasis rosea and polymorphic light eruption show 50% and pityriasis lichenoidis show 33.3% clinical and histopathological correlation. Clinically 2 cases of pityriasis rosea were diagnosed as erythema multiforme and nummular dermatitis, a case of polymorphic light eruption was diagnosed clinically as contact dermatitis and 2 cases of pityriasis lichenoides were clinically diagnosed as lichen planus and pityriasis rosea.

In the present study, clinical and histopathological diagnosis was correlated in 86.25% cases. Histopathological diagnosis definitely helped in reminder of cases.

Table-1: Distribution of skin lesions in males and females

Type of Lesions	Male	Female	Total	Percentage
	N	N	N	%
Psoriasis	26	8	34	42.5
Lichen planus	20	4	24	30
Pityriasis rubra	3	1	4	5
Pilaris purigo nodularis	3	0	3	3.75
Pityriasis rosea	2	2	4	5
Para psoriasis	2	1	3	3.75
Lichen nitidus	3	0	3	3.75
Pityriasis lichenoidis	2	1	3	3.75
Polymorphic light eruptions	1	1	2	2.5
TOTAL	62	18	80	100

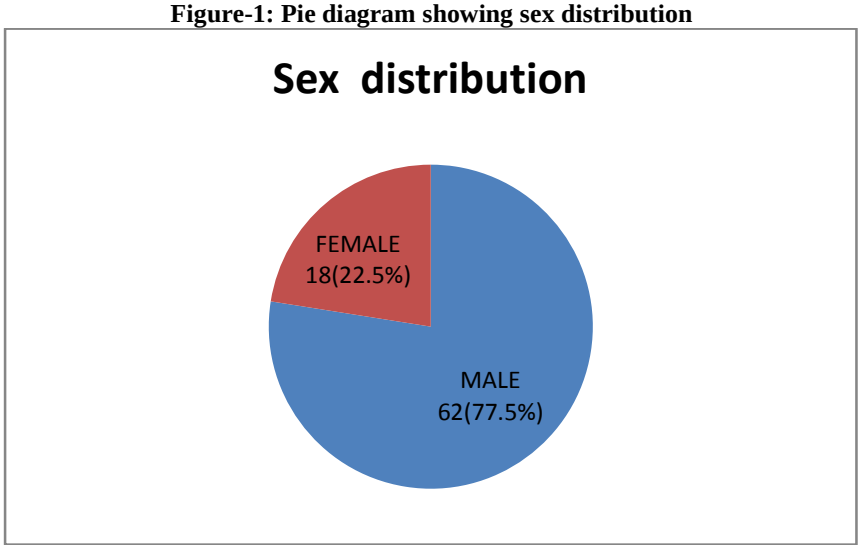
Psoriasis accounts 42.5 % which is highest of total lesions, second is lichen planus with 30%.

Table-2: Cases diagnosed histopathologically and diagnosed clinically

Type of lesions	No. of cases diagnosed histopathologically(%)	Clinical diagnosis	Clinically non diagnosed
Psoriasis	34(42.5)	32	2
Lichen planus	24(30)	21	3
Pityriasis rubra Pilaris	4(5.0)	4	0
Purigo nodularis	3(3.75)	3	0
Pityriasis rosea	4(5.0)	2	2
Para psoriasis	3(3.75)	3	0
Lichen nitidus	3(3.75)	2	1
Pityriasis lichenoidis	3(3.75)	1	2
Polymorphic light eruptions	2(2.5)	1	1
TOTAL	80	69(86.25%)	11(13.75%)

86.26% cases are clinically diagnosed

Figure-1: Pie diagram showing sex distribution



Male preponderance is observed in the above pie diagram

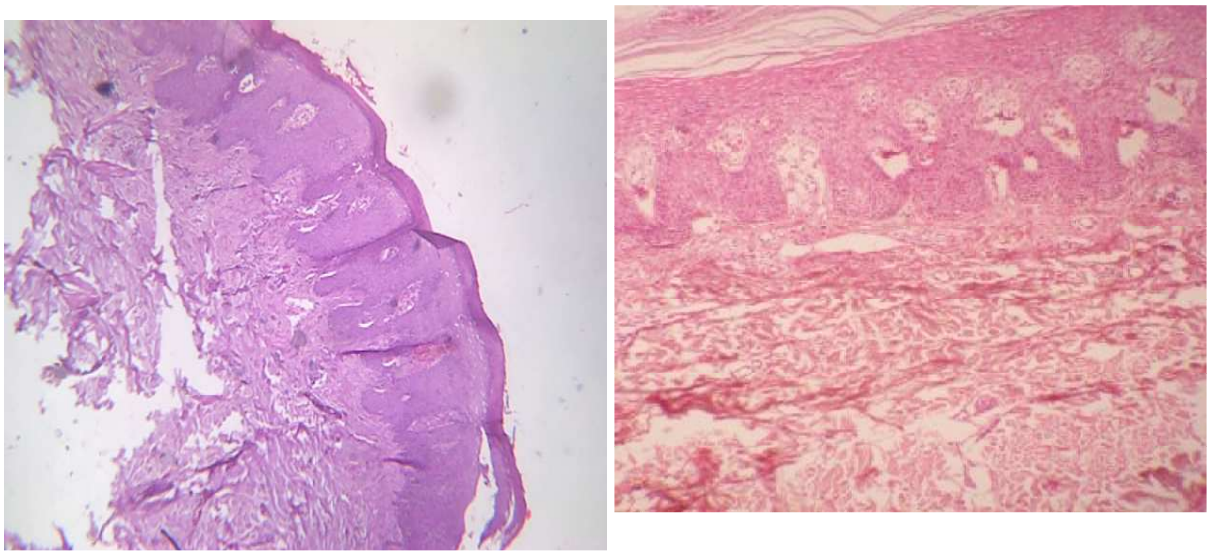
Table-3: Varients in psoriasis

Varients	percentage %
Psoriasis vulgaris	86.64
Chronic plaque	3.20
Guttate psoriasis	2.80
Pustular psoriaisis	1.26

Psoriasis vulgaris is observed to be 86.64% of total psoriasis lesions.

Table-4: Histopathological changes in psoriasis

Histopathological changes	no.ofcases(%)
Epidermal Changes	
Hyperkeratosis	28(82.5)
Parakeratosis	27(79.4)
Acanthosis	28(82.5)
Suprapapillary thinning	13(38.23)
Hypogranulosis	08(23.5)
Munro micro abscesses	10(29.4)
Elongated/club shaped rete ridges	24(73.5)
Dermal Changes	
Papillary edema	20(58.8)
Vascular changes	30(88.2)
Dermal infiltration	32(94.1)



Supra papillary thinning and papillary edema(H&E 10X) **Munro's micro abscess(H&E 40X)**

Figure 2: Psoriasis. Hyperkeratosis, parakeratosis, acanthosis, elongated rete ridges

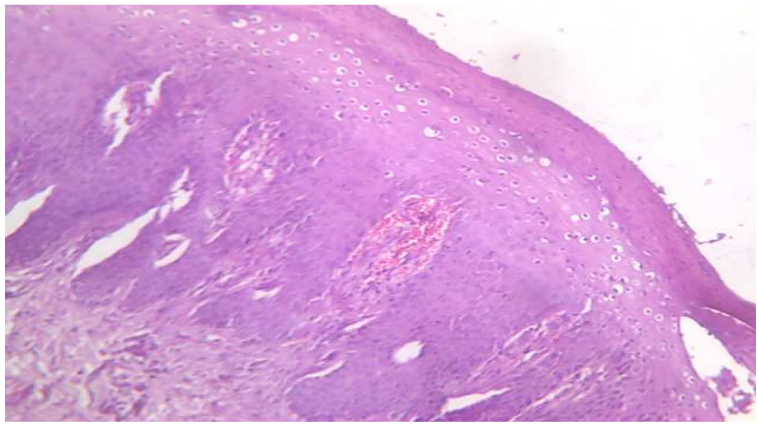


Figure 3: Psoriasis, hyperkeratosis, parakeratosis, acanthosis, elongated rete ridges with papillary dermis showing dilated capillaries , supra papillary thinning with Munro's microabscess (H&E 40X)

Table-5: Varients of lichen planus

Lesions	Percentage%
Lichen planus	58.83
Hypertrophic lichen Planus	18.87
Lichen planus pigmentosus	12.50
Lichen planopilaris	10

Table-6: Histopathological changes in lichen planus

Histopathological changes	No.of cases
Epidermal Changes	
Hyperkeratosis	24(100)
Orthokeratosis	24(100)
Irregular acanthosis with saw tooth rete ridges	24(100)
Hypergranulosis	16(66.6)
Vacuolar degeneration of basal cells	19(79.1)
Civatte bodies	5(20.8)
Dermal Changes	
Dermal mononuclear in filtrate	18(75)
Pigment incontinence	21(87.5)

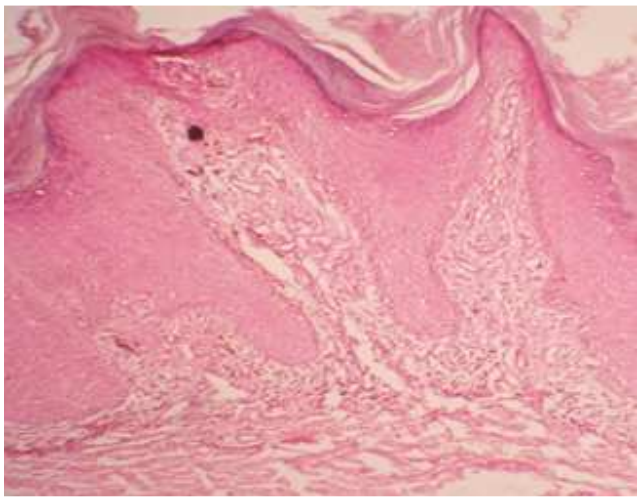


Figure 4:Lichen planus. Hyperkeratosis, orthokeratosis, irregular acanthosis with saw tooth rete ridges, hypergranulosis, vacuolar degeneration of basal cells and band like dermal infiltrate (H&E 40X)

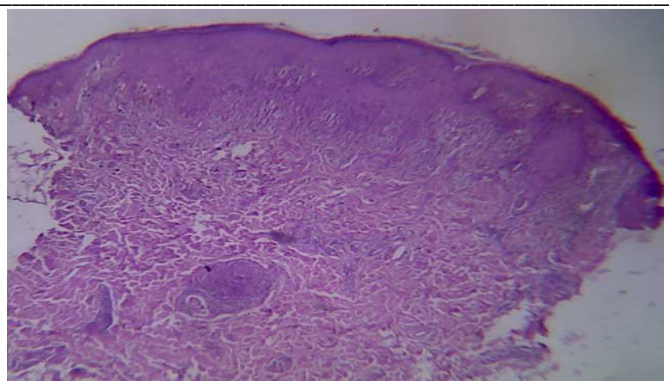


Figure 5: Lichen planus, showing hyperkeratosis, irregular acanthosis, saw tooth rete ridges and band like dermal infiltrate (H&E 10X)

Conclusion

Non-infectious erythematous papulosquamous lesions biopsies constituted majority of total number of skin .The age distribution pattern indicated a high percentage in age group of 31-40 years. Sex distribution pattern revealed a male preponderance. Psoriasis constitutes major skin lesions cases followed by lichen planus. Clinical and histopathological diagnosis was correlated in 86.25% cases. Clinical management was definitely benefited in remainder of cases by histopathological examination.

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