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Histopathological spectrum of Nonneoplastic, nonpigmented skin lesions in a tertiary care centre: A prospective study with clinical perspective

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Abstract
Context: Nonneoplastic, nonpigmented skin lesions offer a vast variety of interesting array of histopathological diagnosis. Punch biopsy is a very rapid, effective and Noninvasive method towards histopathological diagnosis of such skin lesions. Proper institution of therapy is possible with minimal discomfort.
Aim: Aim was to study the histopathology of punch biopsies in a variety of skin in patients attending the dermatology OPD. Also an attempt was made to calculate percentage of different Nonneoplastic, nonpigmented skin lesions and compare it with the prevalence.
Materials and Methods: Punch biopsies from 103 skin lesions were processed and histopathological examination of the H&E stained sections was done. The patients were followed through the wards after the institution of therapy.
Results: Out of 103 punch biopsies, 48 cases were offered a diagnosis of dermatitis, 36 were Vesiculobullous lesions, of which 27 were Pemphigus vulgaris, 6 were bullous pemphigoid, 2 Dariers disease, 2 Pemphigus foliacious, 1 IgA Pemphigus, 9 cases of leprosy, 2 each of psoriasis and Discoid Lupus Erythematosus, 1 case each of scleroderma, Steven Jhonsons disease, lichenoid eruption and focal cutaneous mucinosis. Clinical findings and clinical diagnosis were a great help in arriving at a definitive diagnosis.
Conclusion: Nonneoplastic and nonpigmented lesions form a very small portion of surgical pathology specimens. Clinical examination along with histopathological examination of skin together help to arrive at correct diagnosis of diseases. Punch biopsy is a simple, inexpensive, safe OPD procedure, causing minimal discomfort to the patient and no scarring. More skin lesions should be subjected to punch biopsy to know the exact diagnosis and progress of the disease and thus help in better therapeutic intervention.

Keywords: Histopathological study, punch biopsies, nonneoplastic, nonpigmented skin lesions

1. Introduction
Nonneoplastic and nonpigmented skin conditions can be classified into congenital diseases, noninfectious erythematous Papular and squamous diseases, vascular diseases, noninfectious Vesiculobullous and Vesiculopustular diseases, connective tissue diseases, cutaneous toxicities of drugs, thermal injuries, inflammatory diseases of hair follicles, inflammatory diseases of subcutaneous fat and infectious diseases [1]. These skin lesions constitute a major portion of patients attending the dermatology OPD. Only some of the skin lesions are characteristic in their appearance and distribution. A variety of visual clues such as site distribution, color, scaling and arrangement of lesions offer an effortless pattern of recognition which becomes actually quite complex when the individual components are analyzed separately and many a times a definitive diagnosis cannot be made by physical examination alone [2]. Then it becomes mandatory to resort to histopathological examination for a definitive diagnosis.
Although histopathological study is considered the gold standard in diagnosing dermatological lesions, it has its limitations and very often a definite 'specific' diagnosis is not possible [3]. The limitations of histopathology in arriving at a specific diagnosis maybe due to previous treatment effect, non-classical presentation, inappropriate biopsy site, age of the lesions or overlapping clinical and histopathological features.

Histopathological reporting should be accompanied by clinical history because of the overlapping Histopathological features of different clinical conditions [4]. Therefore, a clinicopathological correlation goes a long way in proper treatment of such diseases and can influence the prognosis significantly. The present study is an attempt to analyse various histopathological patterns of non- neoplastic, nonpigmented, Erythaematous, papulosquamous and Vesiculobullous lesions of the skin based on the tissue reaction pattern.

Papulosquamous skin disorders are a heterogeneous group of disorders that comprise the largest group of diseases. Clinically the lesions are characterised by scaly papules and plaques. Histomorphologic diagnosis is important for separation of these disorders because the treatment and prognosis for each tends to be disease specific [5].

Vesiculobullous lesions are one of the predominant groups of skin lesions and represent skin reaction to various external and internal pathological stimuli. They may occur in many dermatoses, which include various inflammatory, infective, autoimmune, drug induced as well as genetic. [6] Vesicles and bullae are fluid filled cavities formed within or beneath the epidermis. Vesicles are less than 0.5 c. m. in diameter and bullae are blisters greater than 0.5 c. m. in diameter [7]. They occur in all the layers of epidermis from stratum Corneum to basal and sub-epidermal layers. Though these disorders have a similar clinical presentation, the treatment, mortality and morbidity in various Vesiculobullous lesions differs greatly; therefore accurate diagnosis is important. The diagnosis and differentiation of these diseases includes histopathology, Immuno Flourescence & electron microscopy. Most commonly employed technique for diagnosis of Vesiculobullous lesions is punch biopsy as it is safe, simple, inexpensive and minimally invasive OPD procedure without any major complications, causing minimal discomfort to the patient and no scarring. The greatest diagnostic accuracy is obtained by correlating the clinical and histopathological findings [8, 9].

Clinical examination along with histopathological examination of skin forms primary diagnostic modality in the management of patients with Vesiculobullous lesions of skin where the facility for immunofluorescence technique is not available.

Pattern of skin diseases also varies according to socio-economic status and occupation of the patients, as people from low socio-economic group usually present with infective and allergic disorders whereas maidservants usually affected with candidiasis, paronychia and hand eczemas [10]. Moreover, the overcrowding and poor standards of hygiene are important factors determining the distribution of skin diseases in developing countries. The pattern of skin diseases also varies from country to country and in various regions within the same country [11]. Gender differences in anatomy, physiology, as well as in epidemiology and manifestations of various diseases are well documented in literature. Regarding skin disorders, males are more commonly afflicted with infectious diseases whereas women are more vulnerable to psychosomatic disorders, autoimmune, pigmentary as well as allergic diseases [12]. Higher prevalence of Non-Infective dermatoses than infective dermatoses is observed with a relatively higher prevalence of allergies, eczema and pigmentary disorders [13].

2. Materials and Methods

The study was a prospective design and comprised of 103 clinically diagnosed/suspected and untreated cases of non-neoplastic, nonpigmented, erythaematous, papulosquamous and Vesiculobullous lesions of the skin attending the Department of Dermatology in a tertiary care centre between January 2016 to December 2018. Skin biopsies from 103 clinically diagnosed/suspected cases of non-infectious erythaematous, papulosquamous lesions were performed by the dermatologist and sent to the Department of Pathology in 10% formalin. The specimen obtained were subjected to tissue processing after fixation. Tissue sections were prepared from paraffin block and stained with haematoxylin and eosin followed by microscopic examination. Histopathological features were studied in correlation with the clinical findings and clinical diagnosis. As the facility for immunohistochemistry was not available at the institution the lesions were diagnosed on the basis of clinicopathologic basis. Clinical follow up of the patients with Vesiculobullous lesions was done through the wards after institution of the therapy. Follow up biopsy was done in patients with Vesiculobullous diseases and leprosy to see the progress of disease and effect of treatment.

2.1 Inclusion criteria

Cases included in the study were those with clinical features of non-neoplastic, nonpigmented, erythaematous, Papulosquamous and Vesiculobullous skin disorders.

Cases which lacked a definitive clinical diagnosis and required institution of specific therapy.

2.2 Exclusion criteria

Skin disorders of neoplastic and premalignant conditions, pigmented lesions.

3. Results

The present study comprised of 103 cases studied over a period of 3 years, between 2016 to 2018. Out of the total of 4782 histopathological specimens received in the department of pathology 103 (2.15% of the total biopsies) were the skin punch biopsies. A total of 55 cases i.e 53.39% were rendered a definite histopathological diagnosis and 48 cases i.e 46.60% were rendered a diagnosis of dermatitis on histopathological findings. The commonest finding observed was the vesiculobullous lesions accounting for 36 cases. i.e 34.95% of the total cases followed by 9 cases of leprosy i.e 8.73%, 2 cases of Psoriasis, Discoid lupus erythematosus, and a single case of scleroderma, Steven Jhonsons disease, lichenoid eruption, focal cutaneous mucinosis and IgA pemphigus.

Table 1: The distribution of punch biopsies and their histomorphological diagnosis through the year 2016-2018. Miscellaneous cases included: scleroderma, Steven Jhonsons disease, Lichenoid eruption, focal cutaneous Mucinosis.

Sr. No.	Year	No. of Specimen	Punch biopsies		VB	Leprosy	Psoriasis	DLE	Non Specific dermatitis	Misc.
1	2016	1621	21	1.29%	6	3	1	1	9	1
2	2017	1487	33	2.21%	11	4	0	0	17	1
3	2018	1674	49	2.92%	21	2	1	1	22	2
4.	Total	4782	103	2.15	3	9	2	2	48	4

VB: Vesiculobullous, DLE-discoid lupus erythematosus. Misc.-miscellaneous

Table 2: Total number and percentage of various Vesiculobullous diseases. Out of the Vesiculobullous (VB) diseases pemphigus vulgaris (PV) was the commonest accounting for 75% of cases followed by bullous Pemphigoid (BP) 16.66%, Dariers disease 5.55%, pemphigus Foliaceous (PF) 5.55%, and Ig Apemphigus 2.7%

S. No	Year	VB	PV	BP	Darier	IgA	PF
1.	2016	6	4	2	0	0	0
2.	2017	11	9	1	1	0	0
3.	2018	19	14	3	1	1	2
4.	Total	36	27	6	2	1	2
5.	Total %	100%	75%	16.66%	5.55%	2.7%	5.55%
6.	Age range in years	20-67	18-75	36-42	36-42	28	41-42

Table 3: Number of cases of each skin lesion and their distribution, the commonly affected age range and sex distribution

Diagnosis	PV	BP	Dariers	IgA	PF	BTL	TL	IDL	DLE	Psoriasis	Total
No of cases	27	6	2	1	2	2	4	3	2	2	51
Age range in years	20-67	18-75	36-42	28	41-42	30-40	26-69	19-40	21-40	21-36	18-75
Male	12	4	1	1	0	2	2	1	1	1	25
Female	15	2	1	0	2	0	2	2	1	1	26

PV-pemphigus vulgaris, BP-bullous Pemphigoid, IgA-IgA pemphigus, BTL-borderline Tuberculoid leprosy, TL-tuberculoid leprosy, IDL-indeterminate leprosy, DLE-discoid lupus erythematosus.

Higher incidence of Pemphigus vulgaris was found in females and in age group of 40 to 60 whereas Bullous pemphigoid was commoner in males and in age group of 60 to 70 years. Incidence of leprosy was equal in all age groups. DLE and Psoriasis were seen in age group of 20-30 years. Scleroderma was seen in a 33 year old female, Steven Jhonsons disease, lichenoid eruption in a 62 year old female patient and focal cutaneous mucinosis seen in a 13 year old male.

4. Discussion

D' Costa G reported the non-infectious erythematous papular and squamous lesions lesions comprising 15.80% of the total load of surgical pathology. Lichenoid lesions were the commonest (46.57%) with lichen planus 26.7% and psoriasis vulgaris-19.88% being the most frequent [4].

In a study by Ogun GO *et al*. non-neoplastic skin lesions comprised 1.3% of all surgical pathology specimen received within the study period. Dermatitis/Eczema group representing 41.6% of cases, papulosquamous disorders 18, infectious disorders 17.7%, bullous disorders 5.3% and connective tissue disorder 4.3%. Chronic non-specific dermatitis was the commonest specific diagnosis comprising 60 cases (28.7%) of all the skin diseases. The other common specific skin lesions were lichen planus/lichenoid dermatitis 27(12.9% of 209 cases), verruca vulgaris 25 (12% of 209 cases) [14].

Albasri AM [1], *et al.* reported most of the skin diseases (n=639; 57%) in the age group 20-49 years, papulosquamous lesions (11.4%), and dermatitis/eczema (10%) of patients [15].

Sonal Agrawal *et al.* in the study of 50 cases of papulosquamous disorders, found that psoriasis 60% (30 Cases) was the commonest disorder followed by lichen planus 20% (10 cases), 3% (6 cases) each of pityriasis rubra, pilaris, parapsoriasis, Pityriasis rosea, and 4% (02 cases) of seborrheic dermatitis. Age-group 31-40 years was most affected, sex distribution pattern revealed a male preponderance [16].

In a study by Vivek Kumar *et al*. 21-30 years age group constituted 22% of the total cases. Male/Female ratio was 61/39. Hypopigmented patch/plaque was the most common clinical lesion (27%). Hansen's disease was the most common histopathological diagnosis reported (30%) followed by Vesiculobullous lesions (12%). Vesiculobullous lesions, Pemphigus vulgaris was seen in 15 patients with equal M: F ratio and commonest age group affected 20-62 years. Bullous pemphigoid 6 cases with male predominance with a peak in age group 43-72 years, Pemphigus foliaceous 3 cases with male preponderance and age group 29-75 years. Dermatitis herpetiformis in 2 patients with equal sex distribution and 25-55 years. IgA pemphigus 1 case M 53 years Pemphigus herpetiformis 1 F 16 years Epidermolysis bullosa pruriginosa 1 M 40 years 3. Lichen planus 19 cases with a male female ratio of 1.7/1 and an age range of 16-70 years [17].

Bommakanti *et al*. in his door to door survey and study of a locality reported that among non-infectious conditions, eczema was the common disease with (182 cases, 15.53%), followed by Pigmentary disorders with (138 cases, 11.77%), other conditions like alopecia areata, seborrheic dermatitis and senile xerosis in (136 cases, 11.60%), Papulosquamous disorders in (109 cases, 9.30%), acne and acneiform dermatoses in (54 cases, 4.61%), polymorphous light eruptions in (50 cases, 4.27%) and bite and stings in (26 cases, 2.22%). Eczemas were found in (58 cases, 4.95%) followed by lichen simplex chronicus in (41 cases, 3.5%) and allergic contact dermatitis in (37 cases, 3.16%) [13].

A total of 4782 histopathological specimens were received in the department of pathology in 3 years. Of these, 103 (2.15% of the total biopsies) were the skin punch biopsies. The percentage of punch biopsies shows a steady increase from 1.29% to 2.92% in 2018. A total of 55 cases i.e 53.39% were rendered a definite histopathological diagnosis and 48 cases i.e 46.60% were rendered a diagnosis of dermatitis on histopathological findings. The higher number could be attributed to the higher prevalence of non-infective dermatoses as reported by Bommakanti J. *et al.* [13] Other reasons could be the lack of specific histomorphological features pointing towards a definitive diagnosis, some technical reasons like unavailability of clinical findings or proper history, site of biopsy, age of the lesion, loss of tissue

during processing. Dermatitis is a reaction to various underlying diseases or environmental conditions and insect bites. Usually the patients report early due to irritating, itchy lesions which respond very quickly to steroid applications and antiallergic drugs. The other lesions usually don't demand an urgent clinical attention as they produce less severe symptoms and hence ignored even if they are potentially hazardous and require institution of therapy in earlier stages.

The commonest lesion observed was the Vesiculobullous lesions accounting for 36 cases. i.e 34.95% of the total cases followed by 9 cases of leprosy i.e 8.73%, 2 cases of Psoriasis, Discoid lupus erythematosus, and a single cases of scleroderma, Steven Jhonsons disease, lichenoid eruption, focal cutaneous mucinosis and IgA pemphigus. Out of the Vesiculobullous diseases pemphigus vulgaris was the commonest accounting for 75% of cases followed by bullous pemphigoid 16.66%, dariers disease 5.55%, pemphigus Foliaceous 5.55%, and Ig Apemphigus 2.7%. The percentage of Vesiculobullous lesions was comparable with that found in other studies.

The percentage of leprosy was found to be 8.73% which appears to be much less than that reported by other researchers. It could be a result of improvised community health or lesser number of patients coming to the OPD as a result of being ignorant about the disease process resulting in a false low number. The number may be less as compared to other studies, still it raises an alarm where we are trying to eradicate the disease and new cases are seen cropping up. Issues need to be raised at the national level for successful implementation of eradication programme along with other infectious diseases.

The percentage of psoriasis and other papulosquamous lesions in our study was much less than other studies. The possible reason could be the perfectly rendered clinical diagnosis and specific treatment which averts the need for biopsy.

Higher incidence of Pemphigus vulgaris was found in females and in age group of 40 to 60 whereas Bullous pemphigoid was commoner in males and in age group of 60 to 70 years. Incidence of leprosy was equal in all age groups. DLE and Psoriasis were seen in age group of 20-30 years.

5. Conclusion

Nonneoplastic and nonpigmented disorders form a Very neglected group as far as the data is concerned. Though the enigmatic expanse of the histopathological diagnosis is very intriguing these lesions take a back seat when looked for in the surgical pathology specimens. Need for more punch biopsies with proper clinical diagnosis and clinical correlation can definitely change the picture. Also awareness amongst general population is required so that more number of patients turn up for the diagnosis of these petite but harmful skin lesions. Door to door community surveys can be of a greater help, as dermatologists can identify the skin lesions with greater ease than the general public. Punch biopsy is a simple, inexpensive, safe OPD procedure, causing minimal discomfort to the patient and no scarring. Patients with Vesiculobullous lesions can be efficiently diagnosed with Clinopathological correlation and proper treatment can be instituted in the absence of immunofluorescence studies.

6. References

1. Lever's Histopathology of the Skin. David E Elder, Lippincott Williams and Wilkins; 10th revised edition edition, 2008.
2. Calonje E. Histopathology of the skin: General Principles. Burns D.A, Breathnach S M, Cox N, Griffiths C E M. Rook's Textbook of Dermatology. 8th ed. UK: Blackwell. 2010; 10(1):1043.
3. Sushma Hosamane, Muktha Pai, Thoppil Reba Philipose, Umaru Nayarmoole J Clin Diagn Res. 2016; 10(6):EC19-EC22. Published online 2016 Jun Clinicopathological Study of Non-Infectious Erythaematous Papulosquamous Skin Diseases
4. D' Costa G, Bharambe BM. Indian J Dermatol Spectrum of non-infectious erythematous, papular and squamous lesions of the skin. 2010; 55(3):225-8.
5. Chavhan SD, Mahajan SV, Vankudre AJ. A Descriptive Study on Patients of Papulosquamous Lesion at Tertiary Care Institute. MVP Journal of Medical Sciences. 2014; 1(1):30-35.
6. Wojnarowska FBM, Venning VADM. Imunobullous Diseases JD, Fine MD, Burge DMSM, Genetic blistering diseases. Burns D.A, Breathnach S M, Cox N, Griffiths C E M. Rook's Textbook of Dermatology. 8th ed. UK: Blackwell. 2010; 10(1):1043.
7. Cotran RS, Kumar V, Robbins SL Robbins. Cotran's Pathologic basis of Disease. 8th ed. Philadelphia: Saunders Elsevier, 2010, 112-28.
8. Zuber TJ. Punch biopsy of the skin. Am Fam Physician. 2002; 65(6):1155-8. 1161-2, 1164.
9. Kushtagi AV, Neeravari VS, Sidhalingreddy, Pratima S. Clinical and Histopathological Spectrum of Vesiculobullous Lesion of skin: A Study of 40 cases. Indian Journal of Pathology and Oncology, April-June. 2016; 3(2):152-158.
10. Kar C, Das S, Roy AK. Pattern of Skin Diseases in a Tertiary Institution in Kolkata. Indian Journal of Dermatology. 2014; 59:209-14.
11. Memon KN, Soomro RA, Ansari MS. Pattern of skin diseases in patients visiting a tertiary care health facility at Hyderabad, Pakistan. J Ayub Med Coll Abbottabad. 2011; 23(4):37-9.
12. Chen W, Mempel M, Traidl-Hofmann C, Al Khusaei S, Ring J. Gender aspects in skin diseases. J Eur. Acad. Dermatol Venereol. 2010; 24(12):1378-85.
13. Bommakanti J, Pendyala P. Pattern of skin diseases in rural population: a cross sectional study at Medchal mandal, Rangareddy district, Telangana, India. Int. J Res Med Sci. 2017; 5:50-5.
14. Kumar A, Mittal A, Chauhan R, Ahmad F, Awasthi S, Dutta S *et al*. Histopathological Spectrum of Vesiculobullous Lesions of the Skin: Study at a Tertiary Care Hospital. Int. J Med Res Prof. 2018; 4(4):250-55. DOI:10.21276/ijmrp.2018.4.4.058
15. Ogun GO, Okoro OE. The spectrum of non- neoplastic skin lesions in Ibadan, Nigeria: a histopathologic study. Pan Afr Med J. 2016; 23:221.
16. Albasri AM, Ansari IA. The histopathological pattern of benign and non-neoplastic skin diseases at King Fahad Hospital, Madinah, Saudi Arabia. Saudi Med J. 2019; 40(6):548-554. Doi: 10.15537/smj.2019.6.24205.
17. Agrawal S, Mishra KB, Gupta CM. Histopathological spectrum of non-infectious erythematous, papulo-

squamous lesions: at a teritary care institute. Int. J Res Med Sci. 2018; 6:2072-5.
18. Kumar V, Goswami H. Spectrum of Non-neoplastic Skin Lesions: A Histopathological Study based on Punch Biopsy. International Journal of Current Research and Review. IJCRR, 2018, 1069.