Original Research Article

Spectrum of Lesions in Skin Biopsy in a Tertiary Care Hospital

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Abstract

Background: Skin being the largest organ in the body and most exposed to harmful UV rays of sun is susceptible to a large number of neoplastic and non neoplastic conditions. This study gives an idea of the spectrum of various skin lesions on the basis of histopathology along with their frequency, age and sex distribution.**Methods:**This is a retrospective study carried out in the department of Pathology, Chirayu medical college and hospital, Bhopal, India. All the skin biopsies received during the period of one year from January 2020 to December 2020 were included.
Results: Out of 100 cases, 57% cases fall in the category of inflammatory diseases, followed by infective etiology (33%) and least being the neoplastic category with 7% benign tumors and only 3% malignant tumors. Most common age group was 31-40 years with male preponderance.
Conclusions: Many skin diseases present with similar presentations. Hence skin biopsy remains a gold standard test to reach to a specific diagnosis.

Keywords: Skin Biopsy, Histopathological Spectrum, Neoplastic And Non Neoplastic Lesions

Introduction

Skin is the largest organ of body with multiple functions, its main functions being protection by acting as barrier against various environmental insults and maintaining homeostasis. It is the most sun exposed organ and hence susceptible of developing wide spectrum of disorders ranging from inflammatory to neoplastic lesions. Skin diseases depends on multiple factors like age, ethnicity, profession, personal habits,environmental factors, genetic factors, socioeconomic status and social customs. Many of the skin lesions can be diagnosed clinically and sometimes they can be sole manifestation of a systemic disease. However most of the clinical presentations are common in multiple diseases and hence histopathological examination becomes necessary to arrive at a specific diagnosis rather than a much generalized diagnosis on the basis of clinical presentation and history alone which becomes important for specific treatment. Skin biopsy is the most common ancillary technique used for confirmation of skin biopsy [1] and it gives full thickness sample of skin with a small wound.[2] Skin biopsy can be done by punch biopsy, shave biopsy, incisional biopsy, excisional biopsy, scalpel biopsy and curettage biopsy. [3] This study is undertaken to determine the prevalence of the histopathological spectrum of various skin lesions along with their frequency, age and sex in our tertiary care hospital.

Materials and Methods

This is a retrospective study conducted in the department of pathology, Chirayu Medical College & Hospital, Bhopal for a period of one year from January 2020 to December 2020.All the skin biopsies received in our department were retrieved and reviewed. Necessary clinical details were obtained from requisition forms. H & E stained histopathology slides were examined and all the skin lesions were grouped under 4 categories- Inflammatory, Infective, Benign tumors and malignant tumors. Age and sex distribution was done.

Inclusion Criteria

All the skin biopsies received in our department from January 2020 to December 2020.

Exclusion Criteria

- Non conclusive skin biopsy
- Inadequate skin biopsy

Results

The present study includes 100 cases of skin biopsies received in our department during a period of one year. Maximum cases belonged to age group 31-40 years (23%) followed by 21-30 years (21%). Therefore young adults were more commonly involved. Male predominance in these skin lesions was seen with male: female approximately being 3:2. Out of 100 cases, 57% cases fall in the category of inflammatory diseases, followed by infective etiology (33%) and least being the neoplastic category with 7% benign tumors and only 3% malignant tumors. Inflammatory lesions include maximum cases of papulosquamous lesions (10.53%), most common being psoriasis (26.32%). Vesicobullous lesions and pigmentary disorders both constituted 10.53% cases each with 17. 54% cases belonging other groups like morphea, ashy dermatitis and others. Only 3.51% cases of hair follicular disorder was noted. Infective lesions included 87.88% cases of leprosy followed by 9.09% cases of cutaneous tuberculosis and 3.03% cases of molluscum contagiosum. Benign tumors constituted 71.43% of seborrheic keratosis and 28.57% of dermatofibroma. Malignant tumors included 66.66% cases of dermatofibrosarcoma protruberans and 33.34% of squamous cell carcinoma cases.

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Table 1: Age Distribution Of Patients

Age Group (Years)	Percentage of Patients (%)
0-10	7
11-20	18
21-30	21
31-40	23
41-50	15
51-60	8
61-70	6
71-80	2

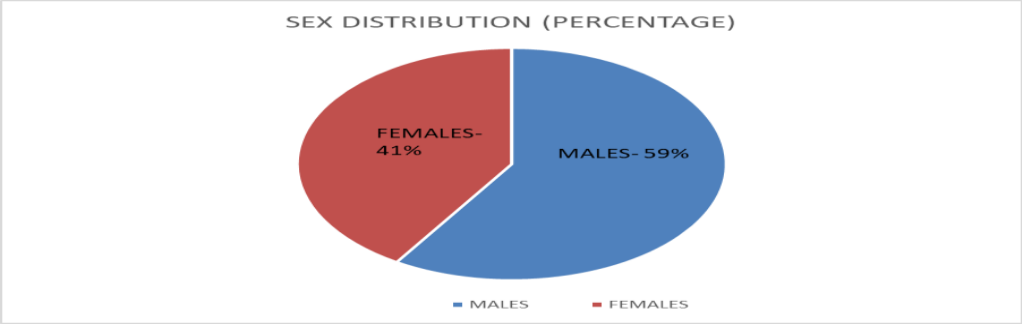

Fig 1: Sex Distribution

Table 2: Histopathological Spectrum of Skin Lesions- Total 100 Cases

S.No.	Skin Lesion	Percentage of Cases
1.	Inflammatory	57%
2.	Infective	33%
3.	Benign Tumors	7%
4.	Malignant Tumors	3%

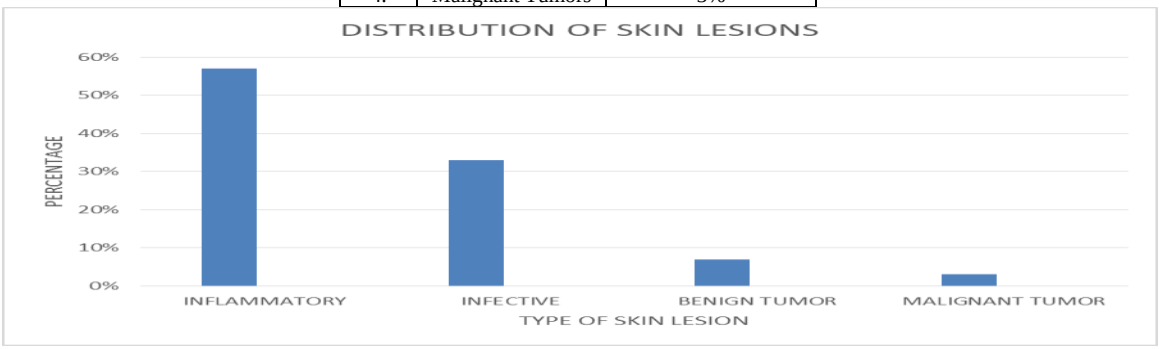

Fig 2: Distribution Of Various Categories Of Skin Lesions

Table 3: Histopathological Spectrum Of Infective Skin Lesions And Inflammatory Skin Lesions

S.No.	Infective Lesion	Number of Cases (33%)
1.	**Bacterial**	
a.	**Hansen's Disease**	
	Histioid Leprosy	1
	Lepromatous Leprosy	13
	Tuberculoid Leprosy	9
	Indeterminate Leprosy	3
	Erythema NodosumLeprosum	3
b.	**Cutaneous Tuberculosis**	
	Lupus Vulgaris	3
2.	**Viral**	
a.	MolluscumContagiosum	1
S.No.	**Inflammatory Lesion**	**Number of Cases (57%)**
1.	**Vesicobullous Lesion**	
a.	Pemphigus Vulgaris	3
b.	Bullous Pemphigoid	2
c.	Pemphigus Foliaceous	1

2.	**Papulosquamous Lesions**	
a.	Psoriasis Vulgaris	13
b.	Inverse Psoriasis	1
c.	Pustular Psoriasis	1
d.	Lichen Planus	5
e.	Lichen Planopilaris	1
f.	Lichen Simplex	1
g.	Photodermatitis	2
h.	Stasis Dermatitis	2
i.	Non Specific Dermatitis	2
j.	Pustular Dermatitis	1
k.	Atrophic Dermatitis	1
l.	Pityriasisrubrapilaris	2
m.	Pityriasisrosea	1
3.	**Pigmentary disorders**	
a.	Lentigo simplex	3
b.	Vitiligo	2
c.	Post inflammatory pigmentation	1
4.	**Hair follicular disorders**	
a.	Pilimultigemini	1
b.	Erruptivevellus hair cyst	1
5.	**Miscellaneous**	
a.	Morphea	3
b.	Ashy dermatosis	2
c.	Sweet syndrome	1
d.	Calcinosis cutis	1
e.	Blaschkitis	1
f.	Keratoderma	1
g.	Erythrokeratodermisvariabilis	1

Table 4: Histopathological Spectrum Of Benign And Malignant Skin Tumors

S.No.	Benign skin tumors	Number of cases (7%)
1.	Seborrhoic keratosis	5
2.	Dermatofibroma	2
S.No.	**Malignant skin tumors**	**Number of cases (3%)**
1.	Dermatofibrosarcomaprotruberans	2
2.	Squamous cell carcinoma	1

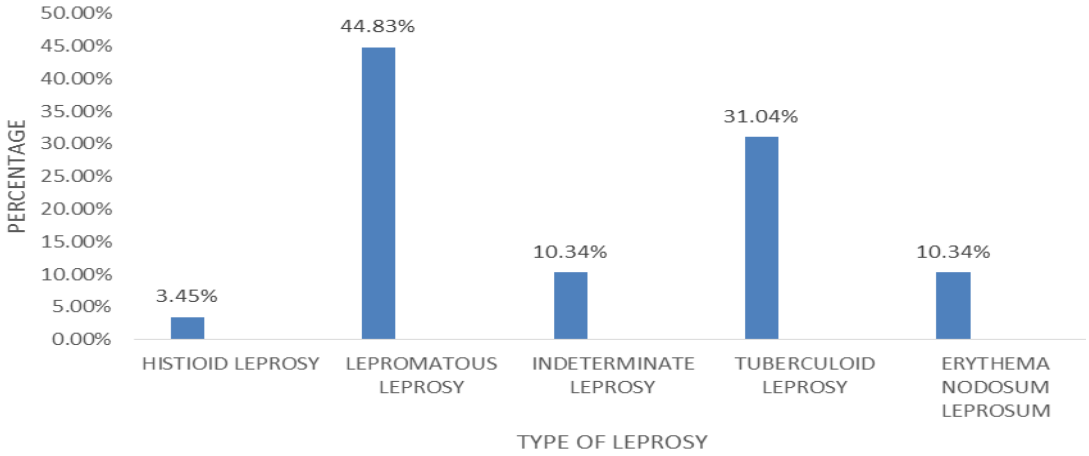

Fig 3: Incidence Of Various Types Of Leprosy

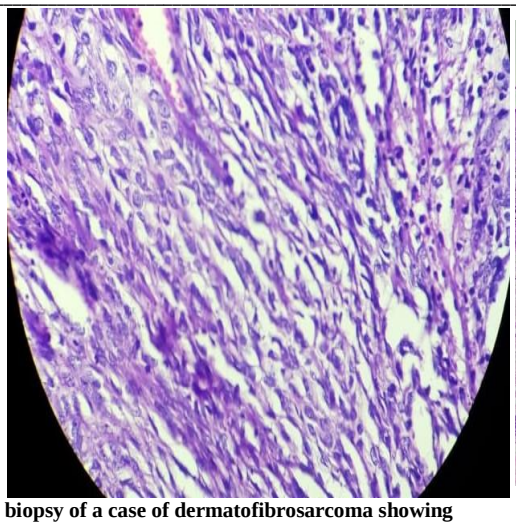

Fig 4: Skin biopsy of a case of dermatofibrosarcoma showing densely packed sheets of pleomorphic spindled cells arranged in sheets and whorled pattern. High mitosis seen

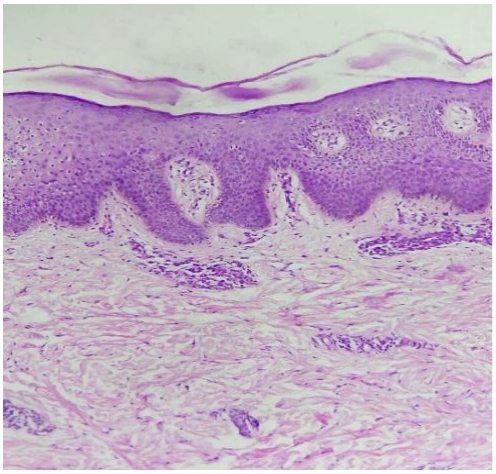

Fig 5:Skin biopsy of a case of Inverse psoriasis showing Irregular acanthosis with elongated rete ridges and suprapapillary thinning

Discussion

Diagnosis of skin lesions sometimes becomes very challenging for the clinician only on the basis of clinical findings. Skin biopsy serve as a simple and cost effective procedure which aid the clinician in reaching to a proper diagnosis. Also, multiple studies have considered histopathological examination as a gold standard in comparison to clinical diagnosis. [4,5] The diagnostic accuracy can be increased further by using a dermatoscope during skin biopsy [6] and applying immunofluorescence and immunohistochemistry techniques wherever necessary. [7,8]

Present study includes 100 cases, out of which 23% patients belonged to age group 31-40 years. This is in concordance with Indian studies, one of which has 23.75% patients and other has 24% patients in the same age group. [9,10] Also, male predominance was seen in this study with a ratio of 3:2 similar to an Indian study which also showed the same ratio. [10] Another Indian study showed 57.94% males and 42.06% females with skin lesions. [11]

Out of 100 cases, maximum lesions (57%) belonged to inflammatory etiology followed by infective etiology (33%). This is in concordance with the study done in Ahmedabad [12] which showed % cases of inflammatory origin and % cases of infective etiology. Also, only 10% lesions belonged to neoplastic group, out of which 70% tumors were benign and only 30% malignant. A study of 258 skin biopsies from South India [13] showed 91.08% non neoplastic cases and only 8.91% neoplastic cases, out of which 65.21% were benign and 34.79% cases were malignant. Hansen's disease was the most common skin lesion with 29% cases. A study from Ahmedabad showed 18.1% cases of Leprosy. [12] Many Indian studies [14,15,16] showed squamous cell carcinoma as the most common malignant skin lesion. But in this study, 2 cases of dermatofibrosarcoma were seen with only 1 case of squamous cell carcinoma which could be due to the minute number of malignant cases in this study. Miscellaneous cases included sweet syndrome, morphea, ashy dermatosis, calcinosis cutis, blaschkitis, keratoderma and erythro keratodermis variabilis.

Conclusion

The present study has shown the histopathological spectrum of various skin lesions in our tertiary care center. Skin lesions are more prevalent in second and third decade of life with males more common as compared to females. Neoplastic lesions still comprises a very low percentage in India. A massive percentage still belongs to inflammatory lesions followed by infective lesions. Leprosy was the most common skin lesion followed by psoriasis. This study showed a wide spectrum of skin lesions. Hence histopathological examination along with clinical examination and proper history aids in a more specific diagnosis so that proper treatment could be started.

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