

Histopathological Spectrum of Skin Biopsies: A One Year Retrospective Study

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Abstract

Introduction: Skin is involved in a number of pathological conditions and affects all age groups and both the sexes, ranging from mild to severe skin problems such as dry skin, wrinkling, disfigurement, itching, painful and sometimes fatal life threatening conditions like toxic epidermal necrolysis and malignancies like lymphoma. Skin biopsy is one of the most frequently used ancillary aids to confirm clinical diagnosis. The tissue reaction pattern and pattern of inflammation aid in the diagnosis. *Objective:* The purpose of the present study was to evaluate the skin biopsies in relation to age and sex and the pattern of histological diagnosis of skin biopsy specimens in the department of histopathology in our centre. *Materials and Methods:* The present retrospective study of skin biopsies was conducted in the department of histopathology of Sampurna Sodani diagnostic clinic over a period of one year from January to December 2016. A total of 173 skin biopsies were taken into consideration. All biopsies were fixed in 10% formalin for 24 hours and later 3-4 micron thick sections were made from the blocks and stained with H and E stain. Wherever necessary, PAS and AFB staining and immunohistochemistry was performed to aid in the diagnosis. *Results:* A total of 173 skin biopsy specimens were received from January 2016 to December 2016. There were 76 (43.9%) males and 97 (56.1%) females. Leg was the most common site involved. Non-malignant lesions were more common comprising of 110/173 (65.3%). Borderline tuberculoid Leprosy was the most common finding among the granulomatous skin lesions (38.8%). Among the malignancies, Basal cell carcinoma was the most frequent finding (29.6%). *Conclusion:* Skin diseases present with a variety of patterns and severity. A definite histopathological diagnosis along with clinical presentation is mandatory for proper treatment and prognosis of the disease.

Keywords: Skin Biopsy; Leprosy; Non Malignant Skin Lesions.

Introduction

Skin of humans is made up of stratified cellular epidermis and an underlying dermis of connective tissue [1]. It is the largest organ of the body and accounts for about 15% of the total body weight. Skin is involved in a number of pathological conditions and affects all age groups and both the sexes, ranging from mild to severe skin problems such as dry skin, wrinkling, disfigurement, itching, painful and sometimes fatal life threatening conditions like toxic epidermal necrolysis and malignancies like lymphoma

[2]. Some skin problems affect the quality of the life with social and cosmetic implications. Some skin diseases are intrinsic to skin but some are manifestations of systemic disorders.

Many skin disorders can be diagnosed clinically while several of them require histopathological diagnosis for confirmation [3]. Skin biopsy is one of the most frequently used ancillary aids to confirm clinical diagnosis. The tissue reaction pattern and pattern of inflammation aid in the diagnosis [4].

The present one year retrospective study was carried out with the aim of evaluating the histomorphological spectrum of skin biopsies received in histopathology department of Sampurna Sodani diagnostic clinic from January to December 2016. The relevant patient history and demographic data was retrieved from the archives.

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Materials and Methods

The present retrospective study of Skin biopsies was conducted in the department of histopathology over a period of one year from January to December 2016. A total of 173 skin biopsies of all ages and both sexes were taken into consideration. The demographic data of patients along with the anatomical site and relevant clinical data of patients was collected from the archives. All biopsies were fixed in 10% formalin for 24 hours and later 3-4 micron thick sections were made from the blocks and stained with Hand E stain. Wherever necessary PAS, AFB staining and immunohistochemistry was performed to aid in the diagnosis. The patients were divided into 0-20, 21-40, 41-60, 61-80 and more than 80 years age group in both the sexes. Further, the histopathological diagnosis was categorized into malignant, non malignant and granulomatous skin diseases.

Results

A total of 173 skin biopsy specimens were received from January 2016 to December 2016 out of which 76 (43.9%) were males and 97 (56.1%) were females. Females were more frequently affected compared to males with a male to female ratio of 0.78:1. (Table 1). Maximum number of patients were in 21-40 years age group with 33 (43.4%) males and 40 (41.2%) females, followed by 41-60 years age group comprising of 26 (34.2%) males and 36 (37.1%) females. In 0-20 and 61-80 years age group there were 18 patients each and only two patients in more than 80 years of age (Table 1). Leg was the most common site affected with 16 patients (9.24%), followed by occipital region (8.04%), supraclavicular region (7.5%), back (6.93%), temporal region (6.35%), forehead (5.78%) and scalp (5.20%) (Table 2).

Table 1: Showing demographic data of patients

S. No.	Age	Male	Percentage	Female	Percentage
1	0 to 20	8	10.5	10	10.3
2	21 to 40	33	43.4	40	41.2
3	41 to 60	26	34.2	36	37.1
4	61 to 80	8	10.5	10	10.3
5	> 80	1	1.31	1	1.03
6	Total	76	43.9	97	56.1

Table 2: Showing involved site

S. No	Site	No. of cases	Percentage
1	Occipital	14	8.09
2	Cervical	7	4.04
3	Submandibular	3	1.73
4	Pre auricular	10	5.78
5	Sub Mental	5	2.89
6	Supraclavicular	13	7.51
7	Chest Wall	7	4.04
8	Nipple	1	0.57
9	Hand	3	1.73
10	Back	12	6.93
11	Leg	16	9.24
12	Labia	3	1.73
13	Temporal	11	6.35
14	Perianal	4	2.31
15	Thigh	4	2.31
16	Scrotum	1	0.57
17	Gluteal region	5	2.89
18	Cheek	2	1.15
19	Supraorbital	1	0.57
20	Nose	2	1.15
21	Axillary	3	1.73
22	Elbow	2	1.15
23	Eye	7	4.04
24	Ear	5	2.89
25	Forehead	10	5.78
26	parietal	1	0.57
27	Scalp	9	5.2
28	post Auricular	1	0.57
29	Sternum	3	1.73
30	Neck	3	1.73
31	Buccal region	1	0.57
32	Breast	2	1.15
33	Abdominal region	1	0.57
34	Anal region	1	0.57

In this study 27 cases of malignancy were reported accounting for 15.6% of all biopsies with 12 (44.4%) males and 15 (55.6%) females. Out of the malignancies reported, basal cell carcinoma was reported in 8 cases (29.6%), followed by squamous cell carcinoma and basiscarcinoma (18.5%) and malignant melanoma (14.8%). There were two cases of lymphoma accounting for 7.4% of all reported malignancies (Table 3).

A total of 36/173(20.8%) granulomatous skin lesions were reported, out of which 20(55.5%) were males and 16 (44.5%) females. Among the granulomatous skin lesions, borderline tuberculoid leprosy was the most frequent finding (38.8%),

followed by tuberculoid leprosy (33.3%). Lupus vulgaris was reported in 13.8% cases (Table 4).

Non malignant skin lesions accounted for 110/173 (63.5%) of all cases. Psoriasis and dermoid cyst (12.7%) were the most common findings followed by viral warts (10.9%), seborrhic dermatitis (10.0%), fibroma and neurofibroma (3.09%) each, followed by pilomatrixoma, keloid and hydatid cyst (6.36%) each. Trichilemmal cyst was diagnosed in 6 cases (5.54%), capillary haemangioma in 4.54%, fibroepithelial polyp (2.63%) and schwannoma (2.72%). No case of condylomata acuminatum, congenital naevus, intradermal naevus or junctional naevus was found in our study (Table 5).

Table 3: Showing distribution of malignant lesions

S. No.	Malignancy	No. of Cases	Percentage	Male	Female
1	Squamous Cell Carcinoma	5	18.5	3	2
2	Malignant Melanoma	4	14.8	4	0
3	Basal Cell Carcinoma	8	29.6	3	5
4	Sebaceous Cell Carcinoma	3	11.11	0	3
5	Basiscarcinoma	5	18.5	2	3
6	Lymphoma	2	7.4	0	2
	Total	27	15.6	12	15
	Percentage			44.40%	55.60%

Table 4: Showing distribution of granulomatous skin lesions

S. No.	Type of Lesion	No. of Cases	Percentage	Male	Female
1	Lupus Vulgaris	5	13.8	0	5
2	Tuberculosis	2	5.55	1	1
3	Leprosy TT	12	33.3	6	6
4	Leprosy BT	14	38.8	10	4
5	Leprosy LL	3	8.33	3	0
6	Leprosy IT	0	0	0	0
	Total	36	20.8	20	16
	Percentage			55.50%	44.50%

Table 5: Showing distribution of non malignant skin lesions

S. No.	Type of Lesion	No. of Cases	Percentage
1	Trichilemmal Cyst	6	5.45
2	Dermoid Cyst	14	12.7
3	Wart	12	10.9
4	Condyloma acuminatum	0	0
5	Congenital Nevus	0	0
6	Intradermal Nevus	0	0
7	Pilomatrixoma	7	6.36
8	Hidradenoma	0	0
9	Fibroepithelial polyp	4	3.63
10	Keloid	7	6.36
11	Neurofibroma	10	9.09
12	Capillary Haemangioma	5	4.54
13	Psoriasis	14	12.7
14	Seborrhic Dermatitis	11	10
15	Junctional Nevus	0	0
16	Hydatid Cyst	7	6.36
17	Schwannoma	3	2.72
18	Fibroma	10	9.09
	Total	110	63.50%

Fig. 1:

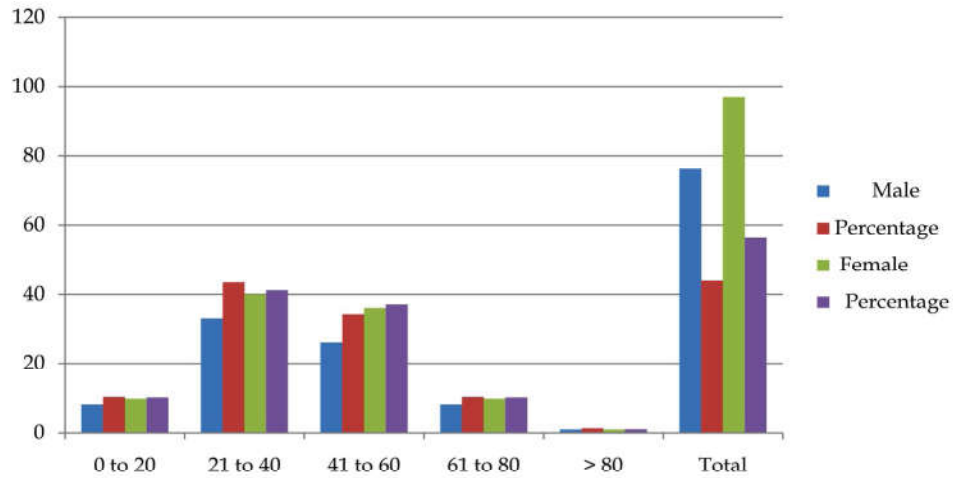


Fig. 2:

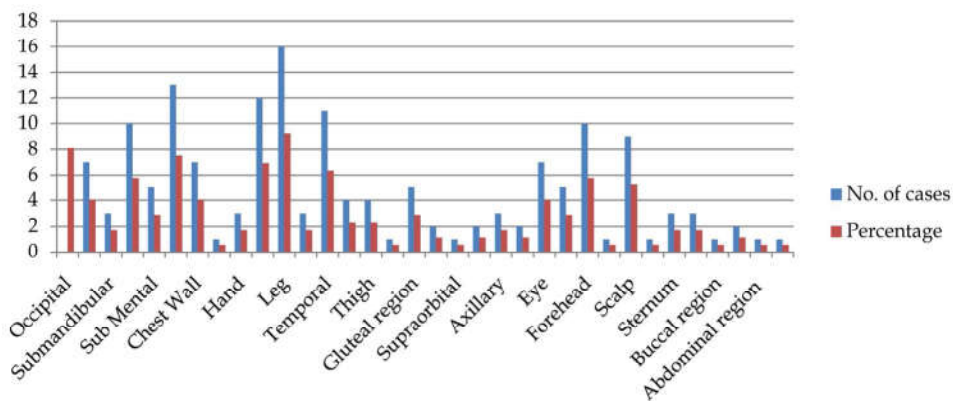


Fig. 3:

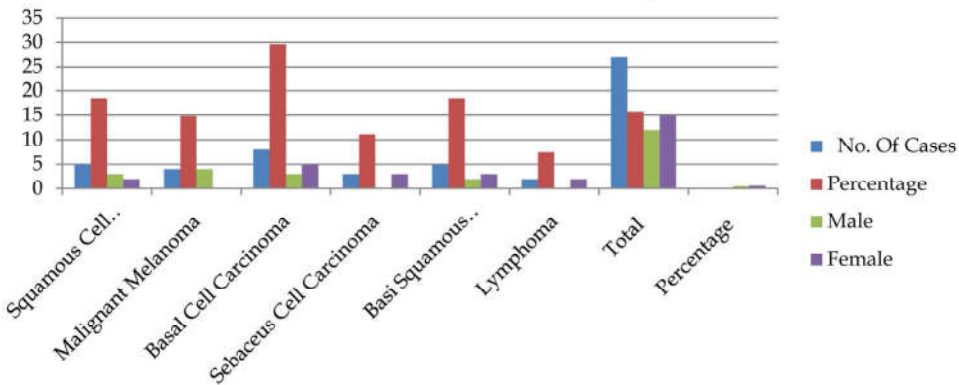


Fig. 4:

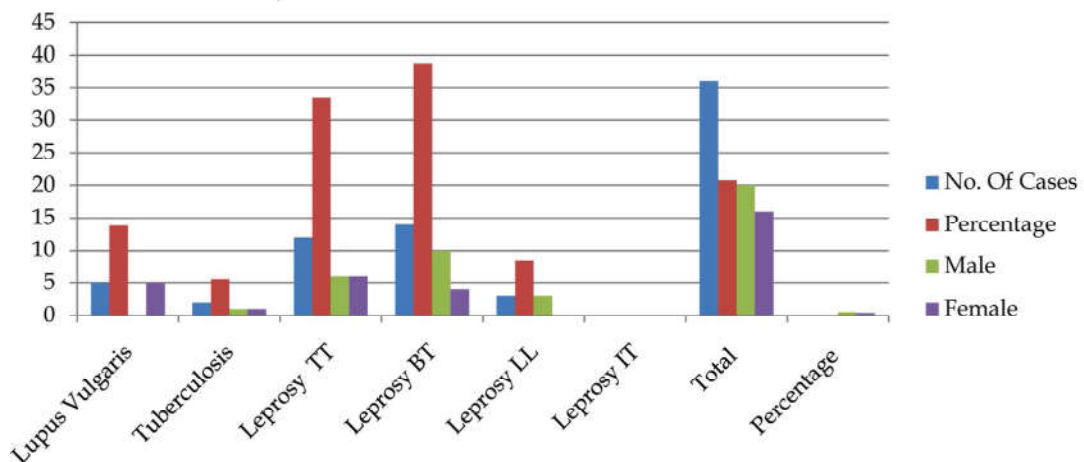
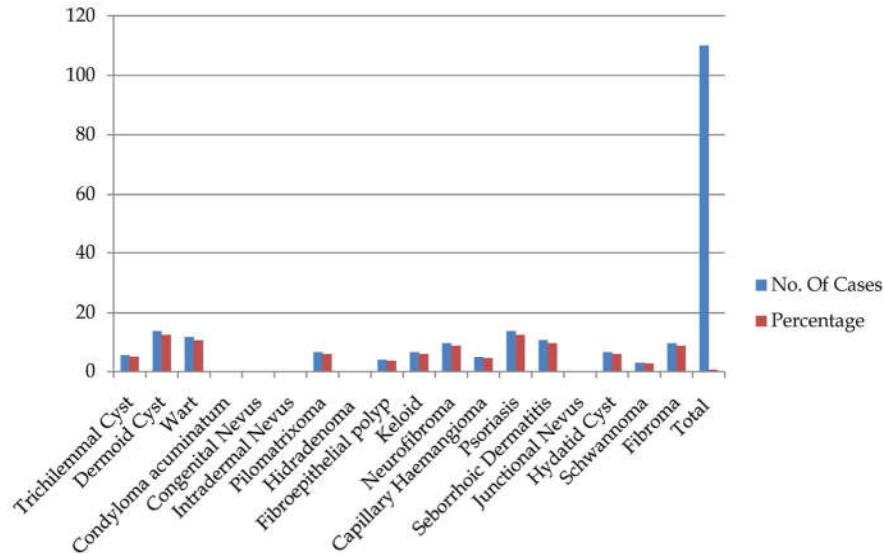


Fig. 5:



Discussion

Out of 173 skin biopsies received, non malignant skin lesions were most common (63.5%), followed by granulomatous lesions (20.8%) and malignancies (15.6%). There was a female preponderance (56.1%) in our study as compared to males (43.9%). In the study conducted by R. Singh, K. Bharathi et. al there was a male preponderance (54.5%) and females were (45.5%) [5]. In their study, leprosy was the most common granulomatous lesion, which correlates with our study. Dhan et al and Bal et al in their study also showed a male preponderance [6,7]. In the study by Rakesh Mehar et al, 42% cases were of leprosy [8].

In our study, psoriasis accounted for 12.7% of all non malignant skin lesions while Nailes G. Patel et al found 6% cases of psoriasis [9]. Mohd. Yunus et al in 2004 concluded that psoriasis is a common papulosquamous disorder of idiopathic etiology and was found in 4.5% cases in their study [10]. In our study, maximum cases were found between 21- 40 years age group while in a study by Jha et al 21-30 years was the most affected(29%) [11]. Our study correlates with the study by D'costa et al, Singh et al, Rajput et al who also noted maximum cases between 30-40 years of age [12,13]. They also noted a male preponderance (1.08 :1) as compared to our study where we observed a female preponderance. Maximum number of cases were of non malignant skin lesions in our study(63.5%) with Psoriasis as the most common lesion. Similar findings were observed by Alexander et al and Yang et al in their studies [14,15].

In our study ,borderline tuberculoid leprosy was the most common granulomatous lesion (38.8%)

which correlates with the study by Suri et al who observed 42% cases of BT leprosy [16].

Vijay S et al in their study observed that lichenoid lesions were most common(26%), followed by Hansen's disease (23.9%) [17].

Conclusion

Skin diseases present with a variety of patterns and vary in presentation from one geographical area to another. Clinically, they may present as macules, papules, hypo or hyperpigmented patches and also vary in severity. A definite histopathological correlation along with clinical presentation is mandatory for proper treatment and prognosis of the disease.

Conflict of Interest

None

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