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RESEARCH ARTICLE

HISTO-PATHOLOGICAL SPECTRUM OF SKIN LESIONS IN TERTIARY CARE CENTRE: A THREE YEAR STUDY

Dr. Vandhana C.M[1] and Dr. Gireesh V. Achalkar[2]

1. Junior Resident, Department of Pathology, Shridevi Institute Of Medical Sciences And Research Hospital Tumkur 572106.
2. Professor and HOD Department of Pathology, Shridevi Institute of Medical Sciences and Research Hospital Tumkur 572106.

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Abstract

Introduction: The largest sensory organ of human body is the skin, which accounts for about 15% of total body weight. It is a complex organ having multiple functions. Primarily it acts as a barrier against various harmful environmental agents [(1)].Skin diseases affect all age groups and are much common in developing countries. In the field of dermatology, 2000 different skin diseases are well known[(2)]

Objectives: The objectives of the study were as follows: (1) To estimate the prevalence of various non-neoplastic and neoplastic skin lesions in our tertiary care hospital. (2) To study the age and sex-wise distribution of non-neoplastic and neoplastic skin lesions.

Methods: The present study comprised a total of 102 skin biopsies of non-neoplastic lesions and neoplastic skin lesions, relevant data like age, sex, and sites of skin lesion were obtained from request forms provided to histopathology section. Specimens received were fixed in 10% formalin. Biopsy bits were submitted as whole and processed in automated tissue processor for routine paraffin embedding.

Results: Out of 102 biopsies that were analyzed, most belonged to 21- 60years with slight male predominance with a total of 85 cases being Non-Neoplastic skin lesions, of which Chronic dermatitis 18 (28.5%) was the most common histopathological diagnosis, followed by Hansen's disease 21(24.7%) among granulomatous skin disease, and a total of 17 cases of neoplastic skin lesions were identified of which dermatofibroma 2(11.8%) and eccrine spiradenoma 2(11.8%) were the benign variants , and Squamous cell carcinoma 3(17.6%) was the most common malignant variant.

Conclusion: Histopathological evaluation of skin biopsies holds gold standard technique for diagnosing various skin lesions and their microscopic evaluation helps in assessing variegated morphological features of different types of skin lesions.

Corresponding Author:- Dr. Vandhana C.M
Address**:-** Junior Resident, Department of Pathology, Shridevi Institute Of Medical Sciences And Research Hospital Tumkur 572106.

Introduction:-

The largest sensory organ of human body is the skin, which accounts for about 15% of total body weight. It is a complex organ having multiple functions. Primarily it acts as a barrier against various harmful environmental agents [1].Skin diseases affect all age groups and are much common in developing countries. In the field of dermatology, 2000 different skin diseases are well known[2] . Skin is the most exposed organ to Ultraviolet rays and is susceptible to a wide spectrum of disorders, ranging from inflammatory conditions to neoplastic lesions[3]. Dermatological disorders are one of the frequently encountered health disorders in tropical countries especially India with varied spectrum depending on geographical domicile[4].

Studies from developing countries conducted over a period of years in the past have reported high prevalence of skin disorders, the spectrumof which has been highly variable[5]

The spectrum of cutaneous disorders varies in their severity ranging from benign forms to lifethreatening lesions. Many factors contribute to this high incidence which includes environmental factors, social customs, economy and literacy[6]

The skin is comprised of Epidermis, dermis and hypodermis. Epidermis contains superficial lining epithelium. Dermis contains loose areolar tissue, blood vessels, sweat glands, sebaceous glands and root of hair follicles. Hypodermis contains mainly adipose tissue[7].

Imbalance among factors affecting the delicate homeostasis that exists among skin cells result in different skin diseases comprising of non specific, non infectious and infectious disease to various type of benign and malignant neoplastic lesions.

Skin problems are very commonly encountered health problems in India.[5]Prevalence ranges from 6.3 to 11.6%.[6] Skin diseases show many different patterns which range from simple vesicular non-neoplastic lesion to fatal neoplastic lesion.[7,8]

Histopathological examination of skin biopsy is necessary for accurate diagnosis, to identify etiological agents and to guide dermatologist or clinician for deciding appropriate management.[9,10]

The spectrum of histopathology of skin disorder are too many but its clinical presentation is restricted to only a few changes such as hyper pigmentation, hypopigmention, macules, papules, nodules, patches and others. And thus definitely histopathology aids as a confirmatory diagnostic tool.

Materials and Methods:-

This is a prospective cross-sectional study that was conducted in the Department of Pathology, Shridevi Institute of Medical Sciences and Research Hospital, Tumkur, Karnataka, India. It was performed between January 2020 to December 2022.

The study included all the non-neoplastic and neoplastic skin lesion biopsy specimens presenting in our department over a period of January 2020 to December 2022 while those withinadequate samples were excluded from this study.

A total of 102 cases of non-neoplastic and neoplastic skin lesions were collected from the hospital and were analyzed in our pathology department,all biopsy tissue specimens fixed in formalin were examined and all dimensions were taken. A complete detailed history of the patients was taken down from the request provided by the dermatologist.All the relevant demographic data was extracted from the histopathology request forms.
The histopathological examination of the skin biopsies was done on 4µ thin paraffin-embedded sections stained with hematoxylin and eosin. Histopathological diagnosis was correlated with the clinical diagnosis. The skin lesions were classified under various non-neoplastic and neoplastic categories according to the morphology of the lesions.

The study was conducted in compliance with the ethical standards of the institution.Results were tabulated and subjected to statistical analysis. Statistical analysis was done by calculating the number and percentage of the incidence in various age groups, in sexes, types of lesions, and also the comparison with other studies.

Results:-

Our current study was a prospective study of skin lesion studied during January 2021 to December 2021. A total of 102 cases were studied out of which 85 were non-neoplastic and 17 were neoplastic.

The male to female ratio was 1.02:1, which is nearly equal. Among both males and females, most common nonneoplastic lesion was chronic dermatitis 18(28.5%) followed by epidermal inclusion cyst 12(19%) and lichen planus 7(11.1%) and there were 22(25.8%) cases of granulomatous skin lesions, under which Hansen's 21(95.4%) was highest. And among the cases included under neoplastic lesions, benign were dermatofibroma 2(20%) and eccrine spiradenoma 2(20%). When we analyzed the specimens among neoplastic lesions, we observed that Squamous cell carcinoma 3(43%) was the most common finding, followed by basal cell carcinoma 2(28.5%) and malignant melanoma 2(28.5%).

Age and sex wise distribution of skin lesion is tabulated in Table 1: age wise and Table 2: sex distribution

Sl no	Age in years	No of cases
1	< 10	4
2	11 - 20	5
3	21 - 30	26
4	31 - 40	18
5	41 - 50	20
6	51 - 60	22
7	61 - 70	7

Table 1:-

Table 2:-

Total no of cases	Males	Females
102	54	48

Table 3:- List of non neoplastic lesions identified on HPE.

Sl. no	Non Neoplastic lesion	No. of cases	%
1	Chronic dermatitis	18	28.5
2	Pityriasis rubra pilaris	1	1.6
3	Pityriasis rosea	1	1.6
4	Xanthoma	1	1.6
5	Epidermal inclusion cyst	12	19
6	Sebaceous cyst	3	4.7
7	Calcinosis cutis	2	3.2

8	Pemphigus vulgaris	1	1.6
9	Pemphigus foliaceous	1	1.6
10	Lichen planus	7	11.1
11	Leucocytoclastic vasculitis	1	1.6
12	Abscess with granulomatous reaction	1	1.6
13	Scleroderma	6	9.5
14	Psoriasis	1	1.6
15	Non specific vasculitis	1	1.6
16	Seborrhic keratosis	1	1.6
17	Fibroepithelial polyp	1	1.6
18	Prurigosimplex	1	1.6
19	Verruca plantaris	2	3.2
20	pyoderma gangrinosum	1	1.6

Granulomatous skin lesions are infrequently found and are often misdiagnosed. In this study, we found that 27.3% of the study participants had borderline tuberculoid and lepromatous leprosy. In the age of NLEP(National Leprosy Eradication Programme), it is unusual to determine these findings, hence demonstrating the importance of histopathological analysis.

Table 4:- List of granulomatous lesions identified on HPE.

Sl. no	Granulomatous skin lesion	No of cases	%
1	Lupus vulgaris	1	4.5
2	Borderline tuberculoid leprosy	6	27.3
3	Borderline lepromatous leprosy	6	27.3
4	Lepromatous leprosy	3	13.6
5	Tuberculoid leprosy	4	18.3
6	Intermediate leprosy	1	4.5
7	Erythema nodosum leprosum	1	4.5

When we evaluated the benign skin lesions, we observed that the most common was dermatofibroma and eccrine spiradenoma.

Table 5:- list of Benign skin lesions identified on HPE.

Sl. no	Neoplastic skin lesion : Benign	No of cases	%
1	Dermatofibroma	2	20

2	Sebaceous adenoma	1	10
3	Chondroid syringoma	1	10
4	Hidradenoma	1	10
5	Squamous papilloma	1	10
6	Sclerosing fibroma	1	10
7	Syringocystadenomapapilliferum	1	10
8	Eccrine spiradenoma	2	20

Table 6:- List of malignant lesions identified on HPE.

Sl. no	Neoplastic skin lesion : Malignancy	No of cases	%
1	Basal cell carcinoma	2	28.6
2	Squamous cell carcinoma	3	42.8
3	Malignant melanoma	2	28.6

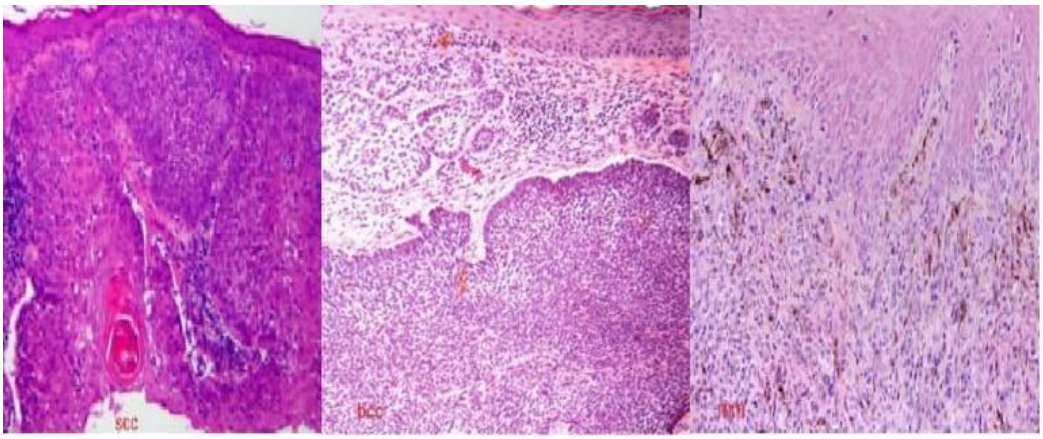

figure 1:- histopathological images of neoplastic malignant lesions
a) squamous cell carcinoma
b) basal cell carcinoma
c) malignant melanoma

Figure 1:- Histopatholigical images of skin lesions identified as malignancy.

Discussion:-

Out of 102 skin biopsies studied highest number of cases were among age group of 21-30years of age consistent with Bezbaruah R et al [9]and Abubakar SD et al [10]where asadhikari RC et al[8] found highest cases belonging to 31- 40years of age.

In our study there was male predominance which was similar to Dayal et al [11] and Kumar et al [12] and in contrast to female predominance in Bezbaruah R et al [9] and Adhikari RC et al[8] .In our study 83 cases are non neoplastic skin lesions which is higher in comparision to 17 cases of neoplastic lesions. However neoplastic lesions were

major skin disease observed among study by Bezbaruah R et al [5] and Abubakar SD et al [6]. Chronic dermatitis 18(28.5%) followed by epidermal inclusion cysts was the commonest non neoplastic lesion in present study consistant with Gaikwad SL et al [13] and Deepthi KN et al [14]in contrast to spongiotic dermatitis that was observed in Adhikari RC et al[7]. Among granulomatous disease Leprosy 21(95.4%) was the commonest followed by lupus vulgaris which was in consistent with study conducted by Agarwal et al[15]. Hence the locality must be educated to take preventive measures to prevent airborne transmission, sexual transmission of leprosy like skin disease.

In our study commonest malignant tumor was Squamous cell carcinoma 3(42.8%) followed by basal cell carcinoma 2(28.6%) which was consistent with studies conducted by Gaikwad SL et al [13] andAbubakar SD et al [10] along with malignant melanoma of 2(28.6 %).

Conclusion:-

Our study showed noticeable array of skin lesions of which the non neoplastic lesions out numbered neoplastic lesions. Amongst, the non neoplastic, chronic dermatitis was the most common, followed by Hansen's disease in granulomatous lesions, and Squamous cell carcinoma was the major neoplastic lesion.

The significance of specific histopathological features plays a pivotal role in distinguishing various skin lesions, with aids in the process of management.

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