

## Histopathological Study of Skin Lesions by Punch Biopsy.

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### Abstract

**Background:** The exact histopathological diagnosis of skin disorders is most important because the treatment is different for various skin disorders but presenting with same clinical presentation. Thus biopsy is mandatory in various skin disorders to confirm diagnosis and for specific treatment. The main objective was to analyse the histopathological profile of skin disorders presenting to the dermatology department of the hospital, determine age and sex distribution of various skin disorders and to identify the most common disorders and also the most common subtypes which are most prevalent in the surrounding community.

**Methods:** This was a prospective study carried out at the department of pathology, Siddhartha medical college and hospital for a period of 2 years. Important clinical details were obtained in a proforma, punch biopsy was sent to histopathology section for final report. Formalin fixed, paraffin embedded sections were prepared & slides were routinely stained with H & E. Data obtained was tabulated and analysed.

**Results:** Total number of cases analysed were 150. The age group of 31-40 years constituted 24% of total cases. There was a male predominance. Hypopigmented patch was most common clinical presentation (27.33%). Hansens disease was the most common histopathological diagnosis reported (33.34%). Borderline tuberculoid leprosy is the most common subtype of hansens disease (60%).

**Key words:** Punch biopsy, Hypopigmented lesion, Hansens disease.

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### I. Introduction

The skin is the largest organ in the body. The main function of the skin is to protect internal organs against environmental insults and maintain homeostasis. It is most exposed organ to sunlight and other forms of Ultraviolet rays. Many skin diseases can be quickly diagnosed by their clinical features and need little or no investigations. On the other hand some patients need detailed and time consuming investigations to confirm the diagnosis.<sup>1</sup> There are clinically more than 2000 different skin conditions. The condition vary enormously in severity and extend ranging from cosmetic problems such as dry skin through a huge variety of acute and chronic diseases.<sup>2</sup> So skin punch biopsy is an essential investigation in dermatology and histopathological findings help clinicians to determine the disease pattern and in curing the patient with specific therapy.

Though the spectrum of histopathology of skin disorders is varied, clinical presentation is restricted to only a few changes such as hyperpigmentation, hypopigmentation, macules, papules, nodules and a few others.<sup>3</sup> Each clinical presentation is common to different histopathological pictures and thus definitely require histopathology for their confirmation. Separation of each of these becomes important because the treatment and prognosis tends to be disease specific.<sup>4</sup>

The aim of the study was to determine the prevalence of various skin disorders in the surrounding community.

### II. Methods

This is a prospective study conducted in department of pathology, Siddhartha medical college and hospital for a period of two years from June 2017 to May 2019. Necessary clinical details were obtained from each patient in the form of proforma. A punch biopsy was obtained in each case and was received at department of pathology for histopathological examination. These punch biopsy were fixed in 10% neutral buffered formalin, thin sections were given and stained with H & E (Hematoxylin & Eosin) technique. Final histopathological diagnosis was given in each case correlating with clinical presentation.

**III. Results**

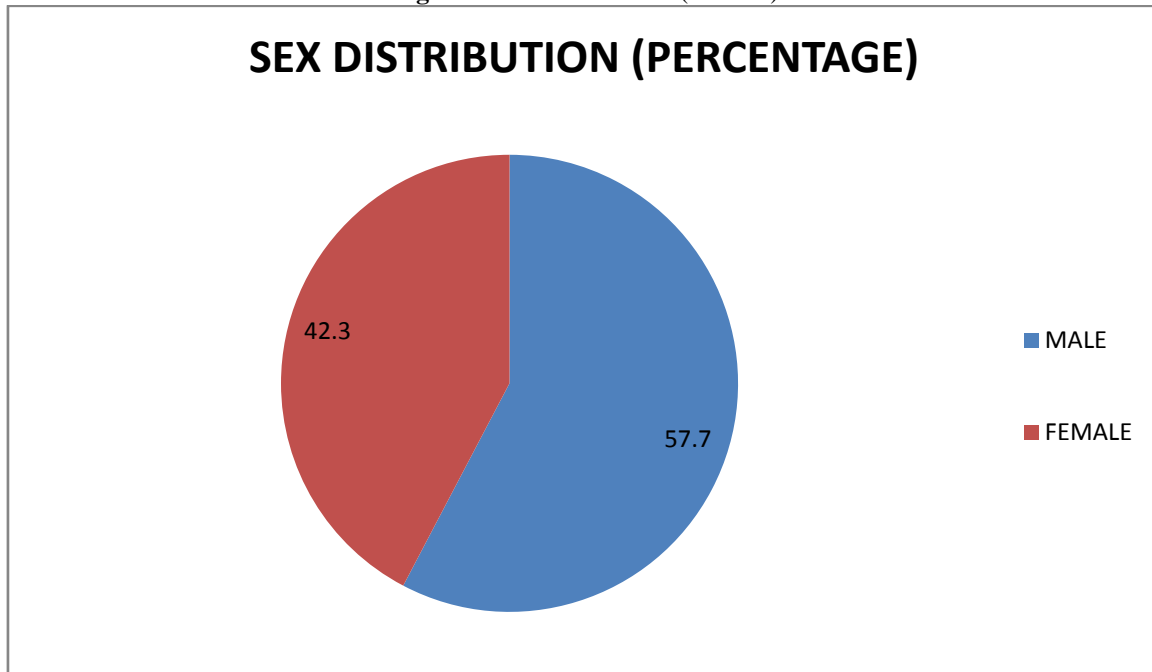
The present study includes 150 cases out of which 24% of the patient’s were in the age group of 31 to 40 years(Table 1). There was a younger age predominance - 69.7% of the patients were under the age of 40 years. There was a clear cut male predominance with male : female ratio of 3:2.(Figure 1). Hypopigmented patch was the most common clinical lesion constituting (27.33%) of all the cases followed by hyperpigmented patch (20%)(Figure 2). Hansen’s disease was the most common histopathological diagnosis reported (33.34%) followed by non-specific dermatitis (25.34%) followed by vesiculobullous lesions (8%)(Figure 5) followed by lichenoid lesions (7.34%).(Table 2)

Among the cases of Hansen’s disease borderline tuberculoid type(Figure 4) is the most common which is accounting for about 60% of all hansens cases.(Figure 3). There are 7 cases of morphea, 5 cases each of vasculitis, psoriasis and 4 cases each of wart, granulomatous inflammation and 3 cases each of basal cell carcinoma (BCC)(Figure 7), seborrheic dermatitis, polymorphous light eruption and 2 cases each of sweet syndrome, squamous cell carcinoma (SCC).

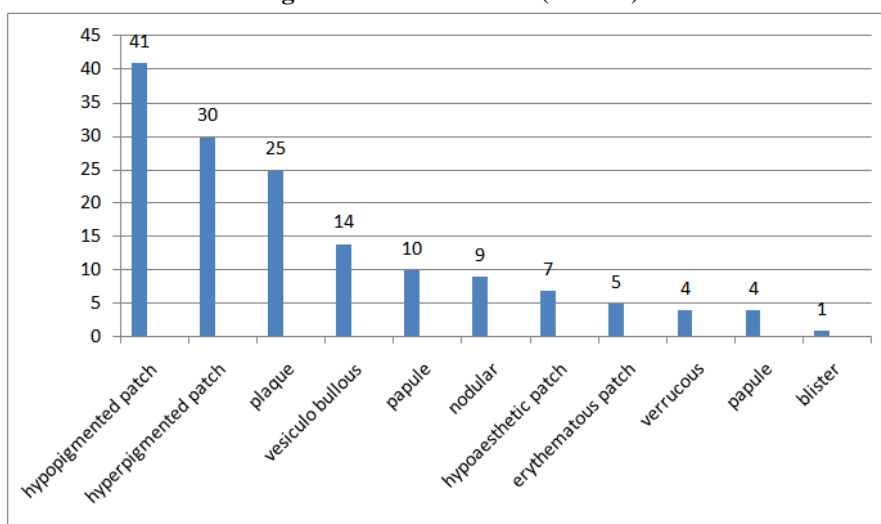
**Table 1:** Age distribution of the patients ( n = 150 )

Age group(yrs)	No. of patients	Percentage
0-10	9	5.14
11-20	30	17.14
21-30	41	23.42
31-40	42	24
41-50	29	16.57
51-60	13	7.42
61-70	11	6.28
71-80	8	4.57

**Figure 1:** Sex distribution (n = 150)



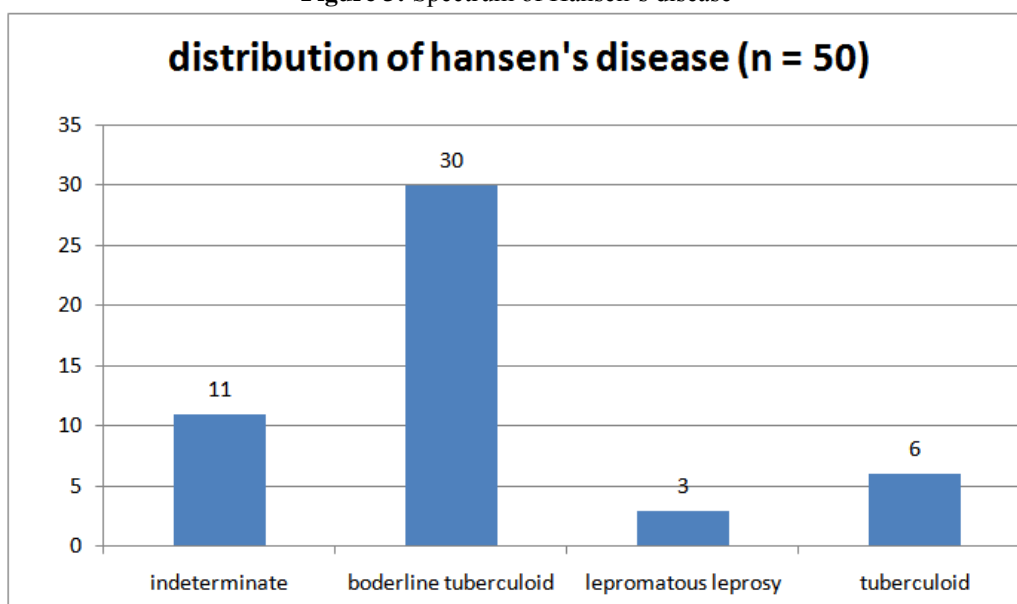
**Figure 2: Clinical lesions (n = 150)**



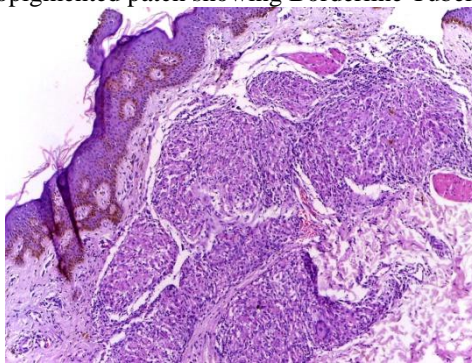
**Table 2 : Histopathological diagnosis (n = 150)**

Histopathological diagnosis	Number of cases	Percentage of cases
Hansen's disease	50	33.34
Non-specific dermatitis	38	25.34
Vesiculo-bullous diseases	12	8
Lichenoid eruption	11	7.34
Morphea	7	4.7
Vasulitis	5	3.34
Psoriasis	5	3.34
Wart	4	2.7
Granulomatous inflammation	4	2.7
Scleroderma	4	2.7
Polymorphous light eruption	3	2
BCC	3	2
Seborrheic dermatitis	3	2
Sweet syndrome	2	1.33
SCC	2	1.33
Pseudoepitheliomatous hyperplasia	1	0.67
Steven Johnson syndrome/toxic epidermonecrosis	1	0.67

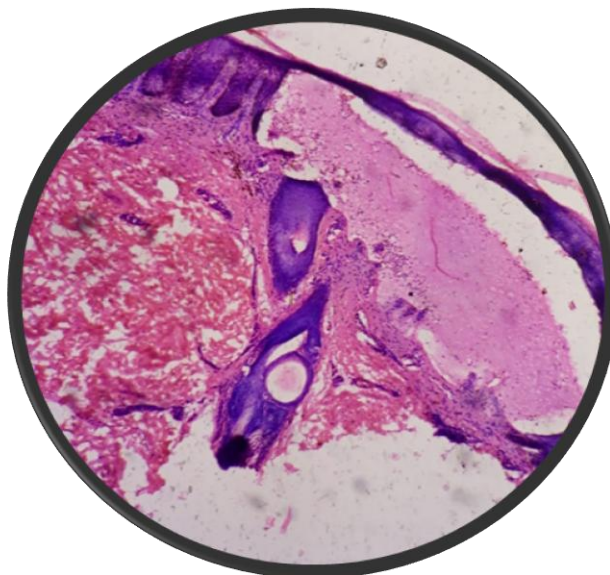
**Figure 3: Spectrum of Hansen's disease**



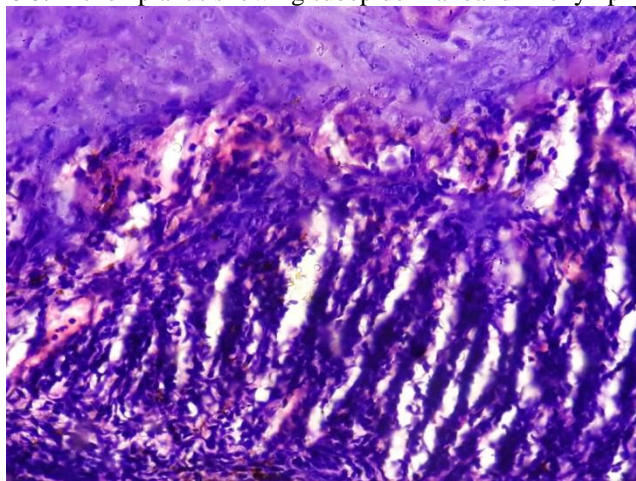
**Figure 4:** Hypopigmented patch showing Borderline Tuberculoid Leprosy.



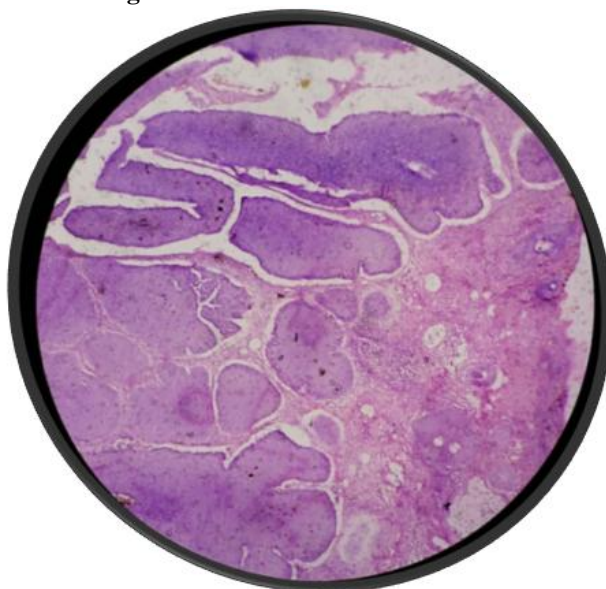
**Figure 5:** Bullous pemphigoid(vesiculo bullous lesion)



**Figure 6:** Lichen planus showing subepidermal band like lymphocytes



**Figure 7: Nodular Basal cell carcinoma.**



#### **IV. Discussion**

In the present study of 150 cases, 24% of the patient's were in the age group of 31 to 40 years which in concordance with the study of Rajasekhar et al,<sup>5</sup> where 23.75% of patients were in the age group of 31 to 40 yrs. Yonus et al<sup>6</sup> reported 25% incidence of in the age group of 21 to 30 yrs. There is a clear cut male preponderance in the present study with M:F ratio of 3:2 . Similarly

D'Costa<sup>7</sup> et al also found male preponderance in their study, they found that males constituted 57.94% while females were 42.06 % of total cases. Hypopigmented patch was the most common clinical lesion constituting (27.33%) of all the cases followed by hyperpigmented patch. Hansen's disease was the most common histopathological diagnosis reported (33.34%) followed by non-specific dermatitis (25.34%). In the study by Bharambhe et al.<sup>8</sup> lichenoid lesions were commonest (46.57%) followed by psoriasis (19.88%). In the study by Singh et al<sup>9</sup>, 27.9% of the cases were non-specific dermatoses followed by granulomatous lesions (23.5%). In the study by Rajasekhar<sup>5</sup> et al. the commonest lesion was Psoriasis (42.5%) followed by Lichen planus. vesiculobullous lesions constitute 12 cases (8%) while in the study carried out by D'Costa et al<sup>7</sup> it constituted 3.72% of the total cases and Bin Yap<sup>10</sup> found this group to constitute 1.5% of total cases.

Eleven cases of lichen planus (Figure 6) were seen in the present study constituting 7.34% of the total cases, out of these 11 cases 10 were of classical lichen planus (90%) and one case was of lichen planus hypertrophicus (10%). Similarly D'Costa<sup>7</sup> et al in 2010 found that lichen planus was more common constituting 57.33% cases while lichen planus hypertrophicus constituted 18.67% of cases.

Psoriasis constituted 5 cases comprising of 3.34 % of overall cases. Out of 5 cases 4 (80%) cases were of psoriasis vulgaris while one case was of pustular psoriasis. D'Costa<sup>7</sup> et al found psoriasis vulgaris in 81.58% of cases in a similar study. Morphea was seen in 7(4.7%) of cases, granulomatous inflammation seen in 4(2.7%). Basal cell carcinoma was seen in 3 cases of elderly age group between 60-80 yrs. 2 cases of Squamous cell carcinoma were reported. Miscellaneous cases include scleroderma, sweet syndrome, steven Johnson syndrome etc.

#### **V. Conclusion**

Skin diseases were more common in males than females. There is a change in spectrum of skin diseases seen previously – may be because of environmental issues such as global warming or depletion of ozone layer or use of chemicals. Leprosy still remains a single entity in India for which skin biopsy are required. There was a younger age predominance regarding the patient presentation. Hansen's disease was the most common skin disorder followed by non-specific dermatitis, followed by vesiculobullous lesions and lichenoid lesions.

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