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## Original Research Article

## Study of histopathological spectrum of skin lesions at P.D.U Hospital, Rajkot

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## ABSTRACT

**Background:** Skin is the largest and most important organ of the body. Accurate diagnosis of skin disorders is most important as treatment is varied for different skin disorders presenting with the similar clinical presentations. Thus histopathological study of skin biopsies become inevitable in various skin disorders to confirm diagnosis and initiate treatment.

**Materials and Methods:** A hospital based study was undertaken at P.D.U. medical college, Rajkot from August 2022 to July 2023. During this period, a total 374 skin biopsy received in histopathology department; relevant medical history and other investigation were collected from each patient. All skin biopsies routinely processed and histopathological examination was done for each biopsy.

**Results:** Out of 374 biopsies, 60% were from male patients while it was 40% from female patients, with a male: female ratio of 1.5:1 showing male predominance. The age of the patients ranged from 8 years to 76 years and the mean age was 38 years. Most common histological spectrum was Dermatitis (28%), then lepromatous leprosy(58.8%) was most commonly reported among the leprosy(27.3%). Then pemphigus vulgaris (49%) was the most commonly encountered vesicobullous lesions (25.7).

**Conclusion:** A total of 374 skin biopsies were analyzed over a one-year period at the Department of Pathology of the tertiary healthcare center to evaluate the spectrum of skin lesions. The study found that skin lesions were more prevalent in younger age groups, with 50% of cases occurring in individuals under 40 years old. The present study observed a preponderance of skin lesions in males, with 60% of cases being diagnosed in the male population.

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## 1. Introduction

The skin is the largest organ of the body, comprising 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. Skin has important functions to perform like protection, temperature regulation and also metabolic.<sup>1</sup> Among the out patients the patients with skin ailments form significant numbers and they constitute more numbers

of hospital cases. They arise from the normal histological constituents of the skin. Different skin diseases comprise of non-specific, non infectious and infectious diseases to various types of benign and malignant tumorous (neoplastic) lesions. Vesiculobullous skin lesions are always the cause of concern to patients, clinicians and pathologists. Pemphigus vulgaris is an uncommon disease which is autoimmune in nature, but the most common among pemphigus group of skin diseases.<sup>2</sup> Skin biopsy forms the fundamental basis for differentiation of similarly looking dermatological disorders and lesions, thereby giving valuable information to the pathologists to make a definitive diagnosis and more so to the dermatologist for

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better management of patients. Clinical diagnosis alone may not be conclusive many times and histopathology becomes a prime requisite for the definite diagnosis. Therefore, this study was designed to evaluate histopathology as an accurate diagnostic method for different types of non-neoplastic and neoplastic lesions of the skin and to correlate the clinical and histopathological findings of various skin lesions.<sup>3</sup>

## 2. Aims and Objectives

To confirm diagnosis and initiation of treatment. To study the histopathological spectrum of skin lesions at tertiary care hospital. To classify the most common disorders into their subtypes and thus assess the most common subtype prevalent in the surrounding community.<sup>4</sup>

## 3. Materials and Methods

A hospital-based study was conducted at P.D.U. Medical College, Rajkot, from August 2022 to July 2023. During this period, the department received a total of 374 skin biopsies. Relevant medical histories and other investigations were collected from each patient. Skin biopsies were received in histopathology department in 10% formalin with necessary clinical details obtained in histopathology requisition form. Specimens were processed in automated histokinette machine and pass through the steps of dehydration, clearing and impregnation, embedding in paraffin wax, blocks prepared of tissue, section cutting with microtome and tissue were taken on glass slide and stained with Hematoxyllin & Eosin stain. Special stains like ziehl-neelsen (Z-N stain), Periodic acid schiff (PAS) and fite-farraco stain also used whenever required.<sup>4,5</sup>

## 4. Results

Out of 374 biopsies, 60% were from male patients while it was 40% from female patients, with a male: female ratio of 1.5:1 showing male predominance. The age of the patients ranged from 8 years to 76 years and the mean age was 38 years. On microscopic study, of cases were non neoplastic 98.4% lesions and 1.6% neoplastic lesions.<sup>3</sup> Histopathological examination of the tissue was done so as to arrive at a definitive diagnosis. Most common histological spectrum was Dermatitis (28%), lepromatous leprosy (58.8%) was most commonly reported among the leprosy (27.3%). Then pemphigus vulgaris (49%) was the most commonly encountered vesicobullous lesions (25.7).<sup>6</sup> In non-neoplastic lesion, commonest site was upper extremity, followed by back and lower extremity cases. In neoplastic lesion, commonest involved site was head and neck followed by lower extremity and trunk cases. In neoplastic disease, Squamous cell carcinoma (41.7%) is most common then basal cell carcinoma (33.3%).<sup>6,7</sup>

**Table 1:** Spectrum of various skin lesions<sup>8</sup>

Skin diseases	No. of cases	Percentage (%)
Dermatitis	105	28.0
Leprosy	102	27.3
Vesicobullous lesions	96	25.7
Lupus lesions	16	4.3
Lichen planus	25	6.7
Neoplastic lesion	06	1.6
Indeterminate	24	6.4
Total	374	100

**Table 2:** Age and sex distribution of skin lesions<sup>9</sup>

Age group (years)	No. of cases (Male)	No. of cases (Female)	Total	Percentage (%)
0-20	25	12	37	9.9
21-40	89	59	148	39.6
41-60	83	52	135	36.0
>60	30	24	54	14.5
Total	227(60%)	147(40%)	374	100

**Table 3:** Spectrum of vesico-bullous lesions<sup>10,11</sup>

Skin diseases	No. of cases	Percentage (%)
Pemphigus vulgaris	47	49
Pemphigus foliaceus	24	25
Darier's disease	2	2
Hailey- Hailey Disease	3	3.1
Erythema multiforme	12	12.5
Millaria	08	8.4
Total	96	100

**Table 4:** Spectrum of leprosy<sup>12–14</sup>

Disease	No. of case	Percentage
Tuberculoid leprosy	10	9.8
Borderline tuberculoid leprosy	13	12.7
Borderline leprosy	04	3.9
Borderline lepromatous leprosy	07	6.9
Lepromatous leprosy	60	58.8
Indeterminate leprosy	00	00
Histoid leprosy	03	3.0
Subpolar leprosy	05	4.9
Total	102	100

**Table 5:** Spectrum of neoplastic disease

Disease	No. of cases	Percentage (%)
Basal cell carcinoma	04	33.3
Squamous cell carcinoma	05	41.7
Nodular hidradenoma	03	25
Total	12	100

## 5. Discussion

In the present study 374 skin biopsies were analysed over a period of 1 year in the department of pathology of tertiary health center was evaluated. It was observed in the present study that skin lesions were more often seen in younger age groups with 50% cases seen below 40 years age. In the present study, the male preponderance was noted in skin lesions with 60% skin lesions being diagnosed in males. Inflammatory lesions were most commonly encountered followed by leprosy. Lepromatous leprosy (58.8%) is the most common in leprosy (27.3%) in this study.<sup>13</sup> In neoplastic disease, Squamous cell carcinoma (41.7%) is most common then basal cell carcinoma (33.3%). In Vesico-bullous lesions, pemphigus vulgaris (49%) is the most common.<sup>15</sup>

## 6. Conclusion

Majority of skin lesions were found in younger individuals with males (60%) being affected more commonly than females (40%).<sup>9</sup> Leprosy (27.3%) is followed by dermatitis (28%) was the most commonly diagnosed entities. Lepromatous leprosy is the most common in leprosy in this study.<sup>16</sup> Pemphigus vulgaris (49%) in vesico-bullous lesions, the most common in our study. In neoplastic disease, Squamous cell carcinoma is most common than basal cell carcinoma. Histopathological examination of skin biopsies remain gold standard in the diagnosis of skin lesions having their different clinical presentation and histomorphology. This signifies the role of histopathology in management and prognosis of skin lesion.<sup>4,5,13</sup>

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## 8. Conflict of Interest


None.

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