



NON - NEOPLASTIC SKIN LESIONS- A HISTOPATHOLOGICAL STUDY AT TERTIARY CARE HOSPITAL OF WESTERN INDIA.

Pathology

Dr. Komal Patel* Second Year Resident Doctor, GMERS Medical College Gotri, Vadodara *Corresponding Author

Dr. Alaukika Rathwa Associate Professor, GMERS Medical College Gotri, Vadodara

Dr. Mayuri Gasadiya Second Year Resident Doctor, GMERS Medical College Gotri, Vadodara

ABSTRACT

Background: The skin is the largest organ system in the body defensive and cosmetic purposes. Nonneoplastic skin lesions affect the psychosocial well-being of patients. While clinical examination can aid in the diagnosis of skin diseases, additional diagnostic procedures are often necessary to obtain crucial information for an accurate diagnosis. One such procedure is a skin biopsy, which can be performed using various methods, with punch biopsy being the standard approach. **Methods:** In this study, retrospective analysis of received 130 cases of skin punch biopsy in histopathology department during the period of May 2024 to April 2025 was done. Formalin fixed, paraffin embedded sections were prepared and slides were routinely stained with H & E and special stains applied wherever necessary. **Results:** Total 130 cases were analysed. Out of which, Hansen's disease is the most common clinical category. There was a male predominance. Maximum number of cases were seen in age group of 21-30 years of age. **Conclusion:** Punch biopsy is a simple outpatient procedure that is highly effective for evaluating skin lesions. Histopathology remains a crucial diagnostic tool for skin lesions. Despite advancements in molecular techniques for diagnosis and prognosis, morphological evaluation continues to be the cornerstone of diagnosis.

KEYWORDS

Hansen's disease, Punch biopsy, Histopathology, Non neoplastic lesion

INTRODUCTION

The skin, along with its appendages, is a complex and active organ that plays a key role in protecting the body and responding to environmental changes. It is made up of various cells—such as keratinocytes, melanocytes, Langerhans cells, Merkel cells and dendritic cells—which work together to maintain skin health and provide defense against external harm. While it acts as a physical barrier, the skin also participates in immune responses and other vital processes.

Any disruption in the balance among these skin cells can lead to a variety of skin conditions. These may range from mild issues like wrinkles and hair loss to more serious problems such as blisters, rashes, autoimmune diseases and even life-threatening cancers.

Skin diseases are frequently seen across all countries and present a wide range of symptoms. The types and frequency of these conditions differ from one region to another and are influenced by several factors, including age, gender, underlying health conditions, economic status, literacy, race and cultural practices. In India, skin disorders are among the most common health concerns, with reported prevalence rates between 6.3% and 11.16%^[3]. However, many of these conditions are often overlooked due to the belief that they are harmless and non-threatening.

Despite this perception, certain skin diseases require timely medical attention and can significantly affect a person's mental well-being and quality of life. For accurate diagnosis and effective treatment, a skin biopsy followed by histopathological examination is often essential. Special staining methods may be used to identify specific causes, helping clinicians choose the best course of treatment. Matching clinical findings with pathological results greatly improves diagnostic accuracy. Since treatment and outcomes vary depending on the specific condition, correctly identifying the disease is crucial. Early detection, proper diagnosis, and prompt treatment provide the best chance for a successful outcome.

AIM AND OBJECTIVE

To determine age and sex distribution and analyse histopathological subtypes of non-neoplastic lesions of skin with a particular focus on the diagnostic utility of skin biopsy, especially punch biopsy.

MATERIALS AND METHODS

The present study was carried out in the Department of Pathology, GMERS medical college and Hospital, Gotri, Vadodara a tertiary care center. The study was a retrospective study and was done during the period of May 2024 to April 2025.

A total of 130 skin punch biopsy specimens were included. Only those cases with a definitive histopathological diagnosis of non-neoplastic skin lesions were selected and classified according to Lever's Histopathology of the Skin. All biopsy specimens were fixed in 10% neutral buffered formalin and processed using standard histopathological techniques. Paraffin-embedded tissue blocks were prepared, and 5 µm sections were cut using a rotary microtome. These sections were stained with Hematoxylin and Eosin (H&E) and examined under light microscopy. Some biopsies had special staining techniques with the use of Periodic Acid Schiff, Ziehl–Neelsen and Fite Faraco stain for selected cases to demonstrate or confirm the presence of fungi or mycobacterial agents. Relevant clinical data, including patient age, sex, clinical presentation, and examination findings, were obtained from the histopathology requisition forms submitted with each specimen.

Inclusion Criteria:- All biopsies that showed definite signs of any specific non neoplastic pathology were included.

Exclusion Criteria:- Skin biopsy specimens that were inadequate or did not demonstrate definitive features of a specific pathology were excluded from the study. Additionally, all biopsies revealing neoplastic lesions were excluded.

RESULTS

A total of 130 cases were included in the study. Of these, 71 cases (54.6%) were male and 59 cases (45.3%) were female, resulting in a male-to-female ratio of 1.2:1 (Figure 1). The patients ages ranged from 7 to 81 years, with the highest number of cases (34 cases, 26.1%) observed in the 21–30 years age group.

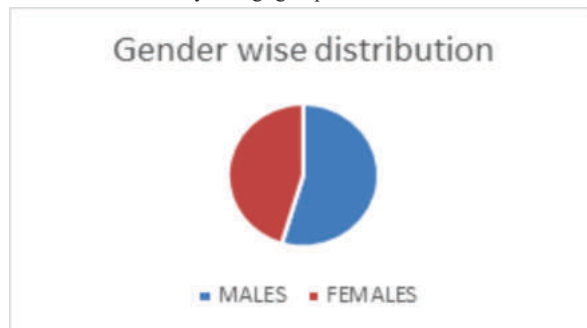
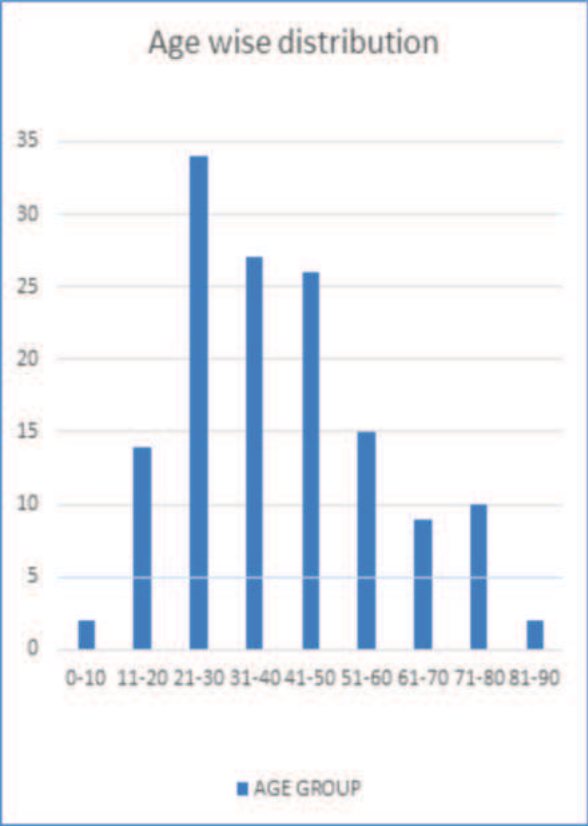


Figure1: Gender Wise Distribution Of Non-neoplastic Skin Lesions

The highest number of cases were observed in the 21–30 years age group, accounting for 26.1% of the total, followed by the 31–40 years age group with 20.8%. The lowest number of cases occurred in the 0–10 years and 81–90 years age group.



Graph 1: Age Distribution Of Non Neoplastic Skin Lesion

Table 1: Skin Disease Classification Based On Histopathology

Name of disease	Number of cases	Percentage(%)
Hansen's disease	39	30
Lichenoid disease	16	12.3
Psoriasis	13	10
Pemphigus Vulgaris	6	4.6
Keratinous cyst	6	4.6
Pemphigus Foliaceus	5	3.8
Eczema	5	3.8
Subcorneal Pustular Dermatitis	4	3.07
Molluscum Contagiosm	4	3.07
Post inflammatory hyperpigmentation	4	3.07
Vasculitis	3	2.3
Lipoma	3	2.3
Skin tag	3	2.3
Scleroderma	2	1.5
Wart	2	1.5
Seborrheic dermatitis	2	1.5
Squamous papilloma	1	0.8
Pityriasis rosea	1	0.8
Morphea	1	0.8
Pyogenic granuloma	1	0.8
Granuloma annulare	1	0.8
Reactive perforating collagenosis	1	0.8
Melasma	1	0.8
Lymphangioma circumscripum	1	0.8
Lupus vulgaris	1	0.8
Urticaria	1	0.8
Sebaceous gland hyperplasia	1	0.8
Kyrle's disease	1	0.8
Actinomycetoma	1	0.8
Total	130	

Table 1 shows that Hansen's disease was the most common lesion in our study, observed in 39 out of 130 cases (30%). This was followed by lichenoid disease, which was reported in 16 cases, accounting for 12.3% of the total.

Images:

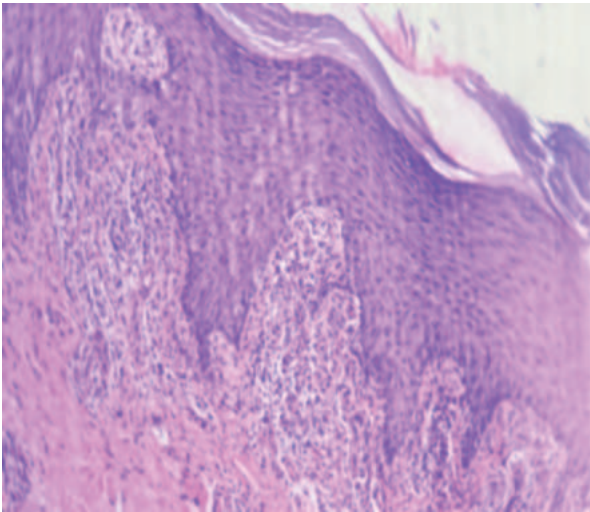


Figure 2:Lichen Planus(10x,H&E stain)

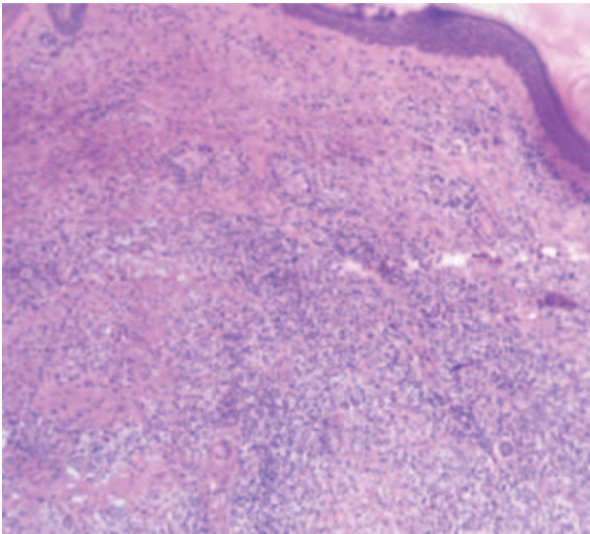


Figure 3: Lepromatous Leprosy(10x,H&E stain)

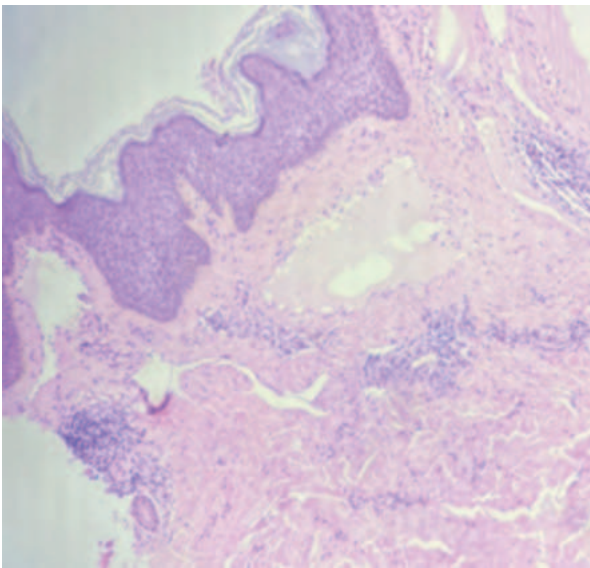


Figure 4: Lymphanhgioma Circumscripum, (10x,H & E stain)

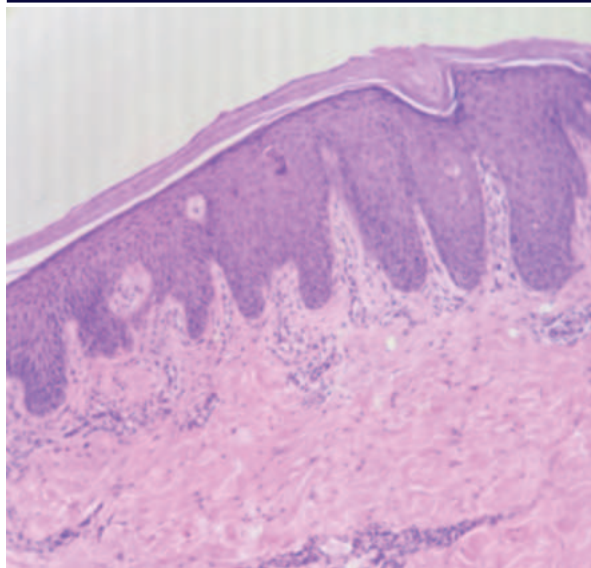


Figure 5: Psoriasis(10x,H&Estain)

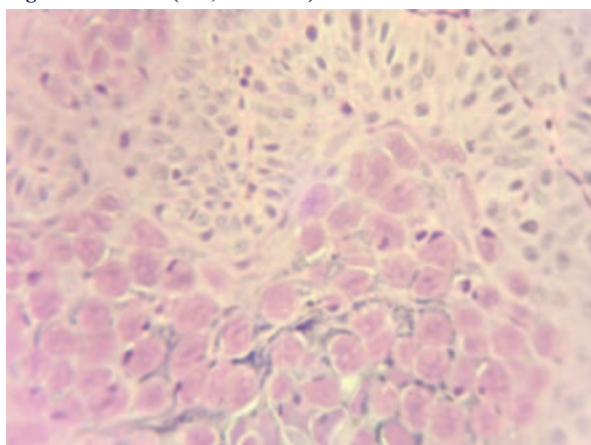


Figure 6: Molluscum Contagiosum(40x,H & E stain)

DISCUSSION

In the present study, a total of 130 skin biopsies of non-neoplastic skin lesions were analyzed over a one-year period, all of which yielded conclusive diagnosis. The age of patients ranged from 7 to 81 years. The highest number of cases (34 cases, 26.1%) was observed in the 21–30 years age group. This finding is consistent with studies by Sokunbi et al.^[1], who reported the 20–29 years age group as the most commonly affected, and by Saritha G et al.^[2], where the 21–30 years group was also predominant. However, a study by Gupta et al.^[3] identified the 31–40 years age group as the most commonly affected.

In our study, non-neoplastic skin lesions were more common in males, with 71 cases (54.6%) compared to 59 cases (45.3%) in females, resulting in a male-to-female ratio of 1.2:1. This male predominance aligns with the findings of Saritha G et al.^[2], Vijayalakshmi C.S. et al.^[4], and Gupta et al.^[3], all of whom reported a higher incidence among males.

Hansen's disease emerged as the most frequent diagnosis in our study, accounting for 30% of the cases. This is comparable to findings by Gupta et al.^[3] who reported Hansen's disease in 34.3% of cases, and Goswami et al.^[5], who found it in 18.1%. In contrast, Rao et al.^[6] reported lichenoid lesions as the most common (26%), followed by Hansen's disease (23.9%). In a study by Sokunbi et al.^[1], the most common histopathological diagnosis was papulosquamous disease (38.1%) followed by eczema/dermatitis (18.2%).

CONCLUSION

Cutaneous non-neoplastic lesions encompass a wide range of disease categories. A systematic approach to studying them particularly through understanding various histopathological patterns and clinical classifications is essential for accurate diagnosis. Despite advancements in molecular diagnostic and prognostic techniques,

morphological evaluation remains the cornerstone of diagnosis. Therefore, histopathology continues to be the gold standard for diagnosing non-neoplastic skin lesions.

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