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Non neoplastic skin lesions: A histopathological study based on punch biopsy

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Abstract
Introduction: Skin diseases can be diagnosed by clinical examination but diagnostic procedures are required for valuable information to reach towards final diagnosis. A few such procedures are skin biopsy. It can be obtained by various ways, amongst them punch biopsy is the standard procedure.
Aims and Objectives: The present study is carried out to analyze the incidence, age and sex wise distribution of various dermatological lesions presenting to tertiary care hospital and to study their histopathological findings.
Materials and Methods: This study was carried out at Department of Pathology, Tertiary Care Hospital, Ahmedabad for a period of 6 months (June 2019 to December 2019). With necessary clinical details in a performa, punch biopsy section was sent to Histopathology section for confirmation of clinical diagnosis. Formalin fixed, paraffin embedded sections were prepared and slides were routinely stained with H & E and special stains were applied wherever necessary. Data obtained was analysed and tabulated.
Results: Total 220 cases were analysed. Male: Female ratio is 1.3:1. The most common clinical lesion was Hypopigmented patch. Leprosy was the most common Histopathological diagnosis reported (18.1 %) followed by Vesiculobullous lesions (11.8%).
Conclusion: Punch biopsy is a very simple outpatient procedure and very useful for skin lesions. Leprosy is still the most common skin disease for which biopsies are done followed by Vesiculobullous lesions.

Keywords: Skin biopsy, Hypopigmented patch, leprosy.

Introduction
In recent years, there has been increasing awareness of the impact of skin diseases on social activities, work and sexual relationship and questionnaires such as dermatology Life Quality Index have been employed to measure the impairment of quality of life [1].
Studies from developing countries conducted over a period of years in the past have reported high prevalence of skin lesions, the spectrum of which has been highly variable.[1]
Lesions of skin are divided into: Neoplastic and Non-neoplastic lesions. Non neoplastic skin lesions include: Infectious diseases, Papular and Squamous lesions, Non-infectious vesicobullous and vesicopapular lesions, Connective tissue diseases, Genodermatoses, Folliculitis, Panniculitis, and nonspecific Dermatosis [1, 3].
Many non-specific skin lesions can be quickly diagnosed by clinical features, requiring no investigation. At the other extreme, some patients need detailed investigation work up to confirm the diagnosis with procedures like biopsy [4].
Skin Biopsy is one of the most important diagnostic tests for skin lesions. Punch biopsy is considered the primary technique for obtaining full thickness skin specimens. The technique involves the use of a circular blade that is rotated down through epidermis and dermis, and into the sub cutaneous fat, yielding a 3 to 4 mm cylindrical core of tissue sample [2].

Aims and Objectives
1. To document the incidence of Non-Neoplastic skin lesions in patients & analyse their distribution depending on age and sex, with usefulness of skin biopsy particularly Punch Biopsy.
2. To find out the correlation between clinical diagnosis and Histopathological examination of the biopsy submitted.

Material & Methods

This study was carried out at Department of Pathology, Tertiary Care Hospital, Ahmedabad for a period of 6 months. (June 2019 to December 2019).

All the skin punch biopsies received in Histopathology section from (June 2019 to December 2019) were reviewed from the archives of the department. Clinical history and relevant data were recorded. The punch biopsy received was bisected & submitted for processing in automated tissue processor and routine paraffin embedding was carried out. Sections were cut using a microtome. Slides stained with routine Haematoxylin and Eosin stain and special stains such as Ziehl Neelsen stain, Periodic Acid Schiff, Alcian Blue, Congo red, Fite-Faraco stain (Figure 3) were examined under Light Microscopy.

The results obtained were tabulated and analysed. Further they were classified into various Histological categories based on the site and pattern of involvement.

Inclusion Criteria

All skin biopsies received in histopathology section were included in the study.

Exclusion Criteria

Biopsies received with incomplete clinical history were excluded from the study.

Results

Table 1: Histopathological Spectrum of Non Neoplastic Skin Lesions

Sr. no.	Skin Lesions	No. of Cases	M/ F ratio
1. Infectious	Bacterial		
	Hensen's disease		
	Lepromatous Leprosy	19	15/4
	Tuberculoid Leprosy	12	10/2
	Erythema Nodosum Leprosum	7	5/2
	Histoid Leprosy	2	2/0
	Cutaneous TB		
	Lupus vulgaris	**5**	4/1
	TB Verrucosa cutis	2	2/0
	Viral		
	Benign Verrucous lesion / Wart	19	13/6
	Molluscum Contagiousm	1	1/0
	Fungal		
	Mucormycosis	10	9/1
	Actinomycosis	1	1/0
	Aspergillosis	1	1/0
	Parasitic		
	Dermal leishmaniasis	1	1/0
2. Non Infectious	Vesicobullous Lesions		
	Pemphigus Vulgaris	12	8/4
	Bullous Pemphigoid	7	4/3
	Pemphigus Folliaceous	3	3/0
	Dermatitis Herpetiformis	3	2/1
	Pemphigous erythematosus	1	1/0
Papulosquamous Lesions			
	Pityriasis Rosea	1	1/0
	Pityriasis rubra pilaris	2	1/1
	Pityriasis lichenoides	1	1/0
	Psoriasis	10	7/3
	Lichen Planus	17	11/6
	Lichen Striatus Dermatitis	1	0/1
	Atrophic Dermatitis	12	5/7
	Spongiotic Dermatitis	4	4/0
	Pustular Dermatitis	1	1/0
	Photo Dermatitis	1	1/0
3. Pigmentary	Intradermal Nevus	15	10/5
	Melasma	4	0/4
	Tattoo granuloma	6	3/3
	Porphyria cutanea tarda	1	1/0
4. Miscellaneous	Hyperkeratosis/ Corn	10	6/4
	Seborrheic keratitis	2	1/1
	Reticular Histiocytosis	3	½
	Perforating Folliculitis	1	1/0
	Scleroderma	4	4/0
	Sclerotic Dermatofibroma	1	0/1
	Discoid lupus erythematous	3	2/1
	Steatocystoma multiplex	2	2/0
	Calcinosis cutis	4	4/0

	Pagets's Disease	1	0/1
	Darrier's Disease	1	0/1
	Ashy Dermatosis	1	1/0
	Pyoderma Gangrinosum	3	2/1
	Trichoepithelioma	1	1/0
	Linear IgA Disease	1	1/0
Total		220	154/66

Amongst the infectious causes, bacterial causes of skin lesions predominate and amongst bacterial causes.

Table 2: Incidence of infectious lesions

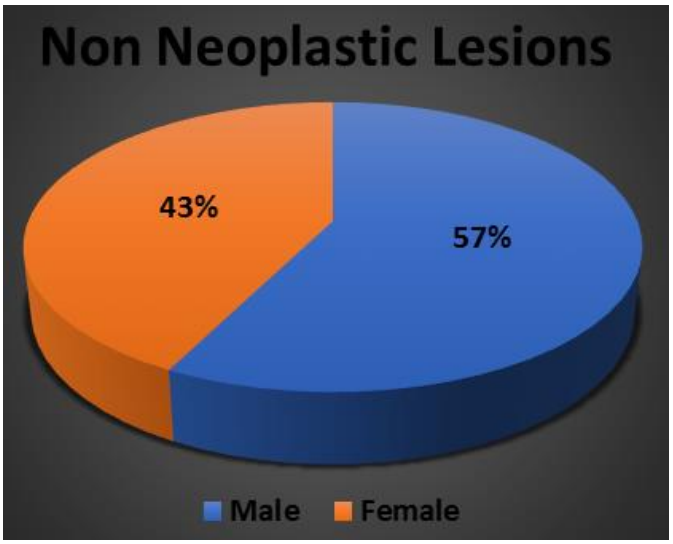
Infectious lesions	Male	Female	Total (%)
Bacterial	38	9	47(58.75%)
Viral	14	6	20(25%)
Fungal	11	1	12(15%)
Parasitic	1	0	01(1.25%)

Leprosy was the most commonly reported lesion in our study with incidence of Lepromatous Leprosy (Figure 1) and Tuberculoid leprosy (Figure 2) being 47.5 % and 30 % respectively.

Table 3: Incidence of various types of Leprosy

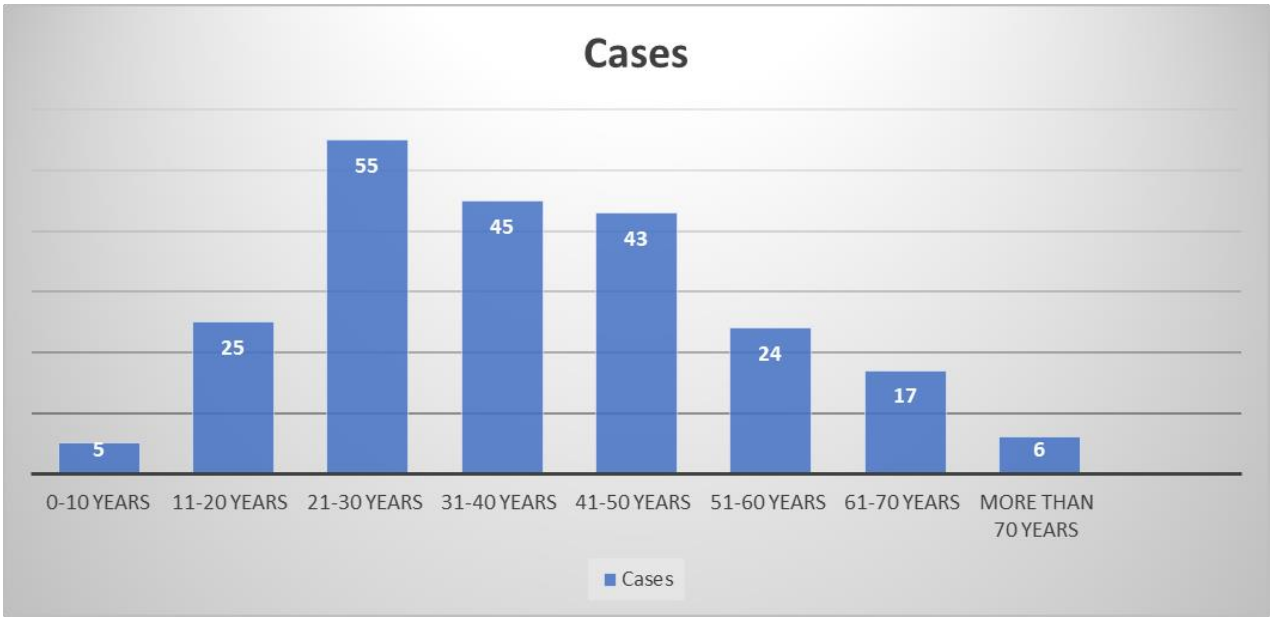
Leprosy types	Male	Female	Total (%)
Lepromatous leprosy	15	4	19(47.5%)
Tuberculoid leprosy	10	2	12(30%)
Erythema Nodosum Leprosum	5	2	7(17.5%)
Histoid Leprosy	2	0	2(5%)

In Present study, Male to Female ratio of Non-Neoplastic skin Lesion was: 1.3: 1



Graph 1: Sex wise distribution of Non Neoplastic Skin Lesions

In the present study, 25% of the patients were in the age group of 21 to 30 years and 20.5% of the patients were in the age group of 31-40 years.



Graph 2: Age wise distribution of Non Neoplastic Skin Lesions

Discussion

This study was carried out at Department of Pathology, Tertiary Care Hospital, Ahmedabad for a period of 6 months (1st June 2019 to 30 December 2019). In present study total 220 cases are analysed. In the present study, 25% of the patients were in the age group of 21 to 30 years and 20.5% of the patients were in the age group of 31-40 years. 25 % of the patient were in the age group of 21 to 30 years in the study by Vijay *et al.* [8].

With 18.1% of patients, the most common diagnosis in present study is Hansen's disease followed by Vesicobullous lesions with 11.8% of cases. Lichen Planus (Figure 4) and Pemphigus vulgaris (Figure 5) are most common diagnosis in Papulosquamous Lesion and Vesicobullous lesions respectively.

Table 4: Comparing the histopathological spectrum of different Non- neoplastic skin lesions from other studies.

	SMS Medical College, Jaipur [9]	Govn. Medical College, Jammu [10]	Present Study
Total Cases	102	200	220
Period	6 months	2 Years	6 months
Male/Female	1.6/1	1.3/1	1.3/1
Hensen's disease	26.4%	34.3%	18.1%
Vesicobullous Lesions	-	17.1%	11.8%

Conclusion

Histopathological spectrum of skin lesions has been highly variable but the clinical presentation shows very few changes such as hyperpigmentation, hypopigmentation, macules, papules, nodules and a few others. Therefore, for confirmation of diagnosis and initiation of treatment, biopsy becomes inevitable in various skin lesions.

Punch biopsy is the basic technique for obtaining full-thickness skin specimens and can be performed in OPD set up. It is very simple technique to learn and perform. Supervision is rarely needed after a physician has performed two or three procedures.

It is important to perform skin biopsy at appropriate phase of the disease, from proper site and of proper thickness especially in cases of non-infectious inflammatory dermatoses.

In diseases in which expected changes are quantitative rather than qualitative (hyperkeratosis, acanthosis, increase in dermal thickness), the evaluation of these changes are best made by taking a punch biopsy of clinically normal skin nearby, which represents the best possible control.

Hansen's disease is still most common skin disease for which biopsy is done followed by vesiculobullous lesions. Tattoo induced granuloma is also a common lesion along with lichenoid lesion.

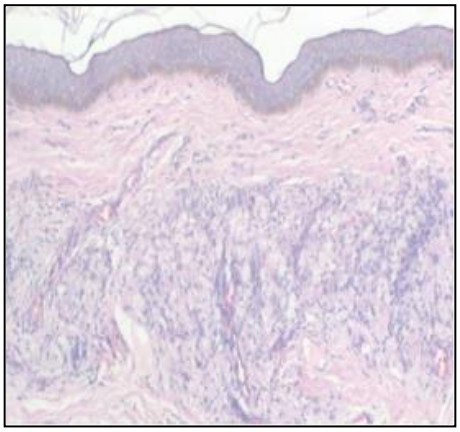


Fig 1: Lepromatous Leprosy, H & E Stain, 20 X

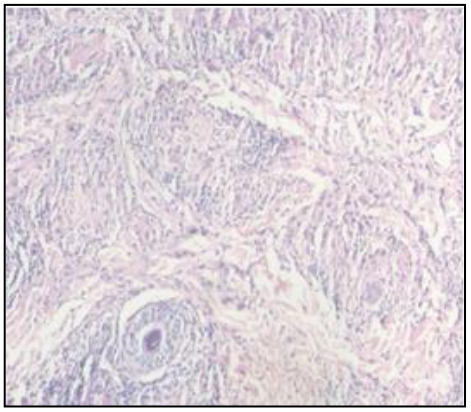


Fig 2: Tuberculoid Leprosy, H & E stain 20 X

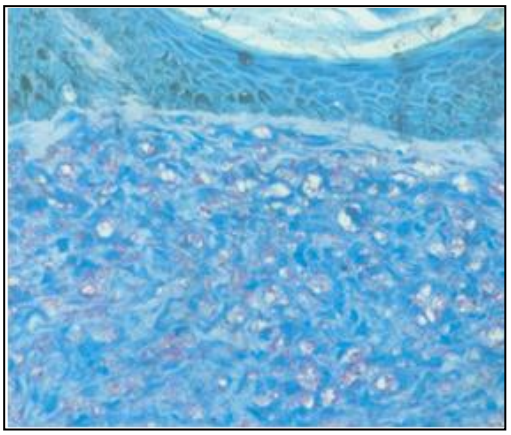


Fig 3: FF Stain, Leprosy, 40 X

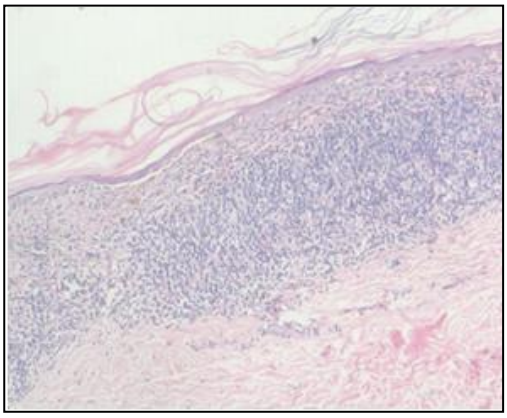


Fig 4: Lichen Planus, H & E stain, 20 X

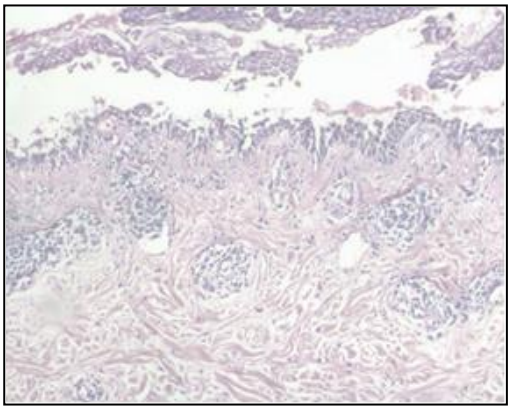


Fig 5: Pemphigus Vulgaris, H & E stain, 20 X

References

1. Burns DA, COX NH. Introduction and Historical Bibliography, Rook's Textbook of Dermatology, 7th edition, Blackwell sciences, 2004
2. David E. Elder Lever's Histopathology of the skin, Ed 9th, Biopsy Techniques
3. Calonge E Histopathology of the skin: General Principles, In Burns T, Breathnarch S, Cox N, Griffithi

C, Aditors, Rook's Textbook of Dermatology, 8th edition: Blackwell. 2010; 10:1-10.43
4. Jyotisingh Rajput, Kishor Singh, Surendra Singh, Amarjeet Singh. Clino-pathological study of non-neoplastic skin lesions. International Medical Journal, ISSN 2346-2516, 2348-1897. 2014; 1(8):307-372.
5. Rosai, Ackerman's Surgical Pathology 10th edition
6. Thomas J, Juber MD. Am fam physician, 2002; 65(6):p1155-1158.
7. Brown JS. Minor surgery, A text and atlas, 3rd Ed, New York: Chapman & Hall, 1997.
8. Vijay S Veldurty, Pathological study of non neoplastic skin lesions by punch biopsy, IJRMS, Volume10.1820./2320-6012
9. Kusum Mathur. Clinico-pathological study of Non Neoplastic Skin lesions in Tertiary care centre, IJMRP. 2017; 3(3),198-204
10. Megha Sharma. Clinicopathological study of non-Neoplastic skin lesions, JEBMH. 2020; 7(11).