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"A STUDY OF SKIN LESIONS BY HISTOPATHOLOGICAL EXAMINATION IN A TERTIARY CARE HOSPITAL"

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ABSTRACT

INTRODUCTION:

The skin is the largest organ system in humans. All age groups are affected by skin diseases, which are widespread in underdeveloped nations. The clinical presentation is restricted to only a few changes such as hyperpigmentation, hypopigmentation, macules, papules, nodules and few others. However, the spectrum of histopathology of skin disorders is varied and diagnostic.

METHODOLOGY:

A retrospective cross-sectional study was conducted at Department of Pathology, GMERS medical college and hospital, Junagadh over a period of three years from January 2021 to December 2023. The biopsy sample taken from clinically diagnosed skin lesions sent to histopathology laboratory in 10% formalin. Sample was fixed in 10% neutral buffered formalin over a period of 12 to 24 hours. Paraffin wax blocks were made and 3-4 micrometer sections were taken and stained with Hematoxylin and Eosin (H&E) stain and histology was studied under microscope.

Data was entered in Microsoft Excel and descriptive data was obtained.

RESULT:

A total of 105 cases were studied, out of which majority of cases fall under 61-70 years of age group. Present study found that infectious lesions were more prevalent than the neoplastic lesions. Malignant lesions most commonly found in more than 45 years of age.

CONCLUSION:

Clinical examination of skin lesions is always challenging to diagnose. Histopathological examination remains the gold standard diagnostic tool to confirm the clinically similar looking lesions.

KEY WORDS:

Neoplastic lesions, non-neoplastic lesions, histopathological examination, Leprosy.

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MAIN TEXT:

INTRODUCTION:

The skin is the largest organ system in humans. Skin protects the internal organs from external environmental stimuli and is vulnerable to a variety of infectious agents and trauma.

Skin lesions are commonly found all over the globe and it shows a wide spectrum varies from country to country and this variation is also influenced by sex, age and associated systemic disorders, racial and social customs [1].

All age groups are affected by skin diseases, which are widespread in underdeveloped nations. In India, skin problems are among the most prevalent health problems, with prevalence ranging from 6.3% to 11.6% [2].

The clinical presentation is restricted to only a few changes such as hyperpigmentation, hypopigmentation, macules, papules, nodules and few others [3]. Clinically, many skin lesions mimic one another so closely that an exact diagnosis is often very difficult. Anatomical location, type of lesions, duration, number and other associated conditions provides a valuable information in confirming the diagnosis.[4] A histopathological examination remains gold standard diagnostic tool to confirming the clinical suspicion [5].

AIM AND OBJECTIVES:

(1) To classify the skin lesions according to their age and gender

(2) To identify the skin lesions by histopathological features

METHODOLOGY:

1. Study design: Retrospective cross-sectional study

2. Study population: All patients who came at skin OPD and advised biopsy for skin lesions at Pathology department of GMERS medical college and general hospital, Junagadh from January 2021 to December 2023.

3. Study duration: 3 Years

4. Sample size: A total of 105 cases were studied.

- Inclusion criteria: All patients who came at skin OPD and advised biopsy for skin lesions at Pathology department of GMERS medical college and general hospital, Junagadh from January 2021 to December 2023.
- Exclusion criteria: Inadequate and inconclusive skin biopsies that did not show definite signs of any specific pathology.

5. Sampling method: Haematoxylin and eosin-stained slides of skin lesions were retrieved and reviewed. Clinical history and relevant data were acquired from the registers. All the slides were observed and findings were recorded.

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- Specimens were sent in 10% formalin, twenty times that of the specimen volume. It was kept for 24 hours in 10% formalin for proper fixation.
- Paraffin wax blocks were made and 3-4 micrometer sections were taken and stained with H&E stain and histology was studied under microscope.
- Special stains like Z-N stain, modified Z-N Stain (Fite-Faraco stain) etc. were done, whenever required.

RESULT:

Table 1: Age wise distribution of skin lesions

Age (Years)	Number of cases	Percentage (%)
0-10	0	0
11-20	7	6.66
21-30	13	12.38
31-40	20	19.04
41-50	19	18.62
51-60	14	13.33
61-70	24	23.52
>70	8	7.8

Table 2: Gender wise distribution of skin lesions

Gender	Number of cases	Percentage (%)
Male	57	54.28
Female	48	45.71

Chart 1: Gender wise distribution of skin lesions

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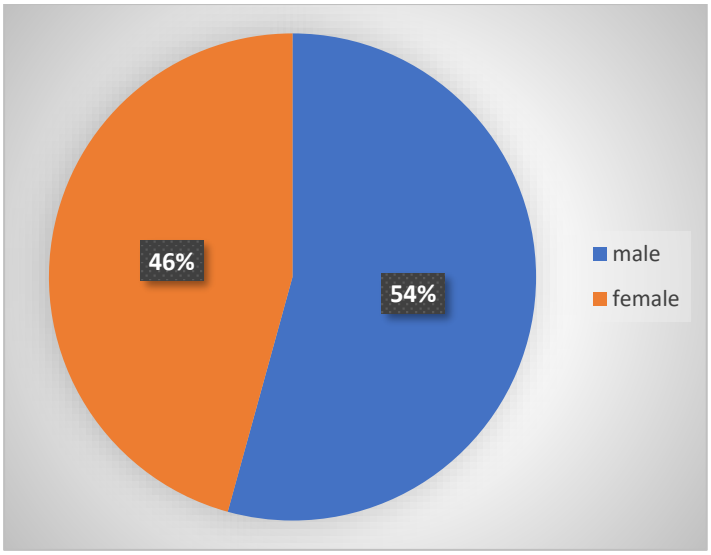

Table 3: Site wise distribution of skin lesions

Site	Number of cases	Percentage (%)
Upper limb	21	20.58
Lower limb	36	35.29
Face	28	26.66
Scalp	3	2.85
Neck	4	3.92
Abdomen	2	1.96
Chest	4	3.92
Back	7	6.66
Total	105	100

Chart 2: Site wise distribution of skin lesions

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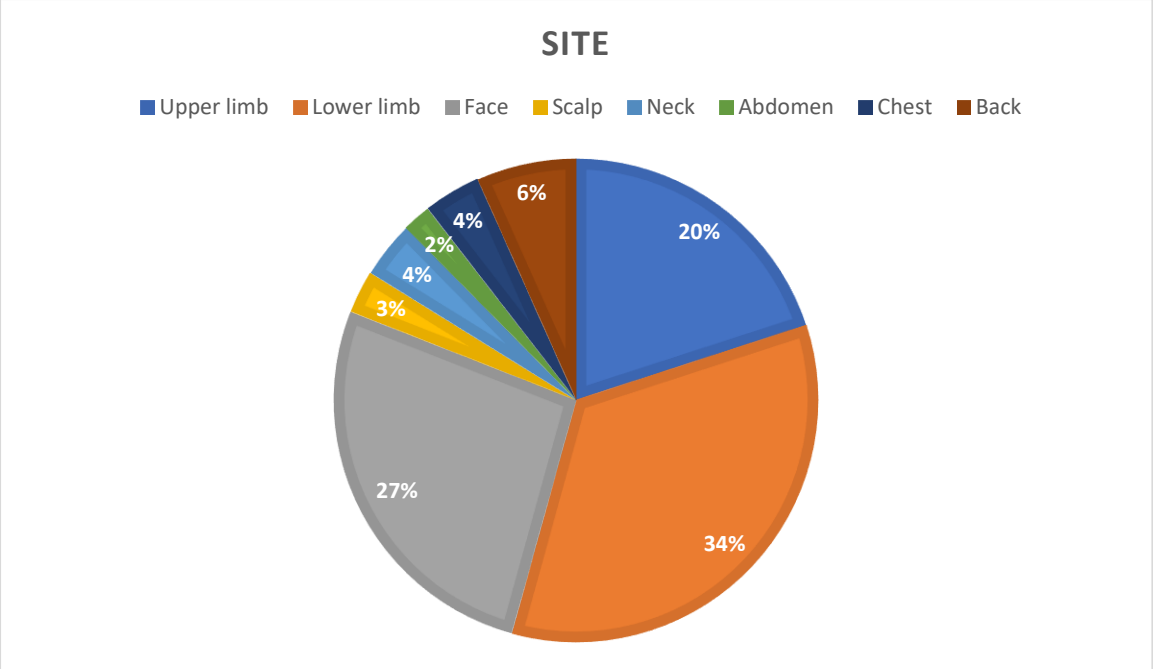

Table 4: Type of skin lesions based on histopathology

Skin lesion	Number of cases	Percentage (%)
Infectious	42	40
Non infectious	32	30.47
Neoplastic	31	29.52

Table 5: Distribution of skin lesions

1.Infectious	Number of cases	Percentage (%)
Bacterial	22	20.95
Viral	19	18.09
Fungal	1	0.95
2.Non infectious		

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Papulosquamous disease	5	4.76
Vesicobullous disease	3	2.85
Pigmentary disease	6	5.71
Connective tissue disease	1	0.95
3.Malignant		
Squamous cell carcinoma	14	13.33
Basal cell carcinoma	7	6.66
Malignant melanoma	3	2.85
4. Miscellaneous		
Skin adnexal tumour	7	6.66
Seborrheic keratosis	1	0.95
Keloid	7	6.66
Acrochordon	4	3.80
Leiomyoma of skin	1	0.95
Nodular elastosis with cyst and comedons	1	0.95
Stasis dermatitis	1	0.95
Dermatofibroma of skin	1	0.95
Lymphangioma circumscriptum	1	0.95

DISCUSSION:

In present study, out of 105 cases 57 were males and 48 were females. We found male predominance in our study, it was consistent with Chandrakanta et al. [6], Dr. Sheela L Gaikwad et al. [7] and Sonu Yadav et al. [8] In contrast, Mamtha K et al found female predominance.

In our study, majority of patients were in the age group 61-70 years (23.52%). Which was contradictory with Chandrakanta et al. (21-30), Dr. Sheela L Gaikwad et al. (21-30), Sonu Yadav et al. (21-30) and Mamtha K et al. (51-60).

In present study, most common site involved was lower limb (35%), which was differ from the Chandrakanta et al., in which trunk (42%) was the most common site involved.

In our study, infection was the most common etiology, which was correlate well with Mamtha K et al., While it was not concordant with Dr. Sheela L Gaikwad et al., Sonu Yadav et al. and Chandrakanta et al. As Dr. Sheela L Gaikwad et al., Sonu Yadav et al. found neoplastic etiology, while Chandrakanta et al. found noninfectious etiology. In present study, infection due to bacteria was the most common cause, which correlate well with Chandrakanta et al.

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In our study, Squamous cell carcinoma (13.33%) was the most common neoplastic lesion, which was correlate well with Dr. Sheela L Gaikwad et al. and Sonu Yadav et al., However, Chandrakanta et al. found neoplastic lesion of benign origin due to epidermal cyst.

In our study, malignant lesions found in more than 45 years of age. Squamous cell carcinoma was the most common cause of malignant lesion followed by the basal cell carcinoma and malignant melanoma. In benign lesion, Trichoepithelioma was the most common cause followed by the nodular hidradenoma second most common cause. In infectious etiology, Leprosy was the leading cause with Lepromatous Leprosy being the most common.

	Present study	**Chandrakanta et al. [6]**	**Dr. Sheela L. Gaikwad et al. [7]**	**Mamtha K et al. [1]**	**Sonu Yadav et al. [8]**
Total cases	105	105	113	286	130
Duration of study	3 years	2 years	6 months	2 years	1 year
M: F	M>F	M>F	M>F	M<F	M>F
Age group	61-70	21-30	21-30	51-60	21-30
Most common skin lesion	Infectious	Non infectious	Neoplastic	Infectious	Neoplastic

CONCLUSION:

The present study was conducted to evaluate the histopathological spectrum of skin lesions, in which total of 105 cases were studied over a period of 3 years, males were affected more than females and most common affected age group was 61-70 (23-52%) years. Infectious disease was leading cause of skin lesion especially leprosy. In leprosy, Lepromatous Leprosy was the leading cause of skin lesions. Second most common cause was neoplastic in which Squamous cell carcinoma was the most common lesion. Most malignant lesions were found in more than 45 years of age. Present study suggest that histopathological examination remains the gold standard diagnostic tool to confirm the clinically similar looking lesion.

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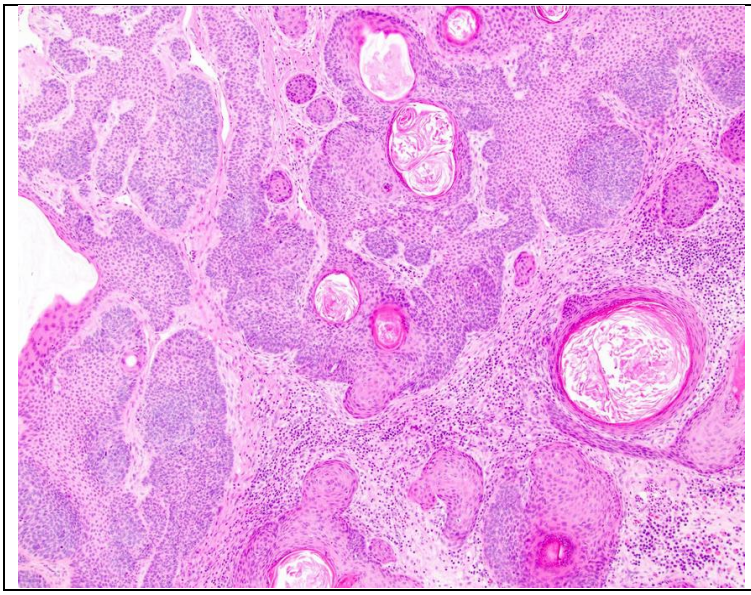

Fig 1: Trichoepithelioma: Prominent keratin cyst formation. The bland cytologic features, cellular stroma and lack of epithelial stromal clefting.

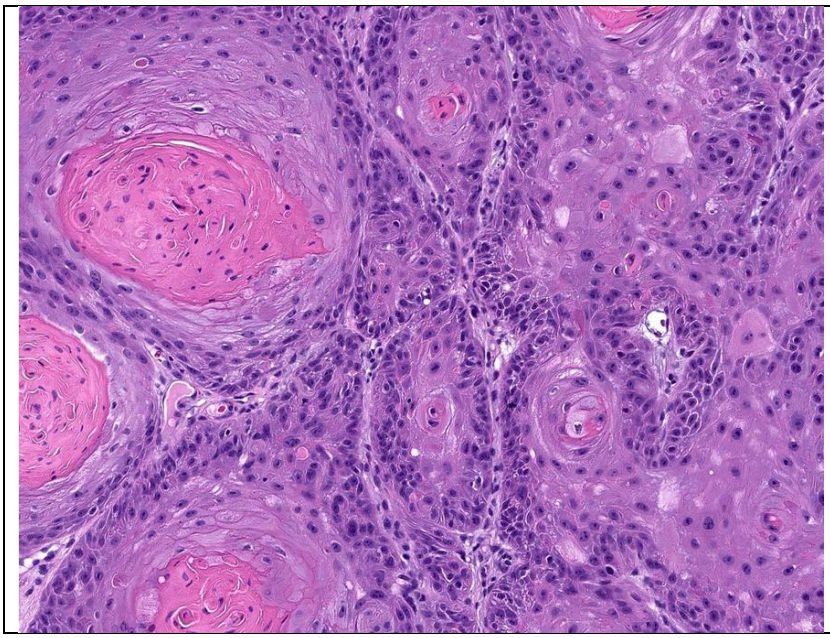

Fig 2: Squamous cell carcinoma (well differentiated): Epithelium shows marked keratinization and minimal nuclear pleomorphism.

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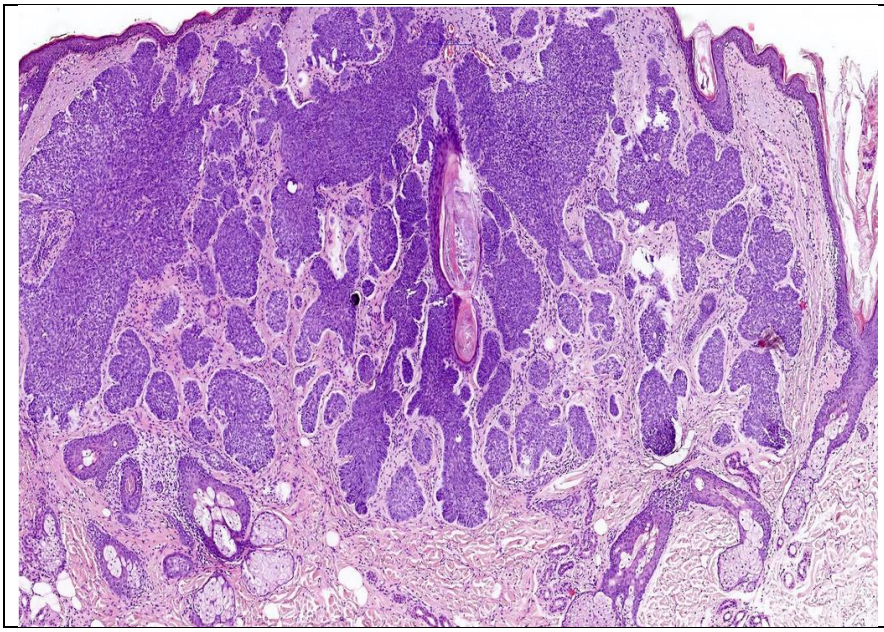

Fig 3: Basal cell carcinoma: Peripheral palisading of nuclei with cleft formation and mucin deposition

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