



Research Article

**HISTOPATHOLOGICAL SPECTRUM OF SKIN LESIONS AMONG PATIENTS IN A RURAL COMMUNITY, CHANDU-BHUDHERA, FMHS, SGT MEDICAL COLLEGE, HOSPITAL & RESEARCH INSTITUTE GURGAON, HARYANA**

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**ABSTRACT**

The skin is affected by wide range of diseases comprising of inflammatory disorders to highly malignant neoplasms.<sup>1</sup> The pattern of skin diseases differs in different countries, and within various states, & districts.<sup>2</sup> Social and environmental factors play a key role in the epidemiology of skin disease.<sup>3</sup>

So we decided to undertake a study of the skin disease pattern in patients from a rural community attending our tertiary care hospital, FMHS, SGT Medical College, Hospital & Research Institute. A total of 130 cases of skin lesions over a period of one year were taken. The specimens obtained were subjected to formalin fixation and paraffin embedding, stained with haematoxylin and eosin and special stain wherever required. Maximum numbers of patients were from age group 21 to 30 years (25.4%) and with male predominance (53.8%). Neoplastic lesions (68.4%) are more as compared to non neoplastic (31.6%).

We obtained wide spectrum of skin diseases in this study surrounding our community. Awareness regarding prevalence of diverse skin lesions in rural population with histopathological confirmation can help in appropriate diagnosis and proper management.

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**INTRODUCTION**

Skin is the largest organ of the integumentary system in human. The integumentary system constitutes the skin (integument) together with its accessory organs (hair, glands, and nails). The skin acts as a buffer against the external environment and thus is more vulnerable to a variety of diseases.<sup>1</sup>

Skin diseases affect all ages from neonate to elderly. There can be significant morbidity due to disfigurement, disability, intractable itch and though rare even death may occur from intractable skin disease.<sup>2</sup> The pattern and distribution of skin diseases differ globally. Some factors like genetics, environment, race, religion, occupation, nutrition and habit can influence the pattern of skin diseases.<sup>3</sup> The skin being the largest organ of the body, many skin diseases can be the presenting signs of systemic ailments.<sup>4</sup> So we studied skin disorders in this research institute at department of pathology aiming to provide essential data regarding skin lesions in surrounding community.

**MATERIALS & METHODS**

The study of skin lesions carried out at the Department of Pathology, FMHS, SGT Hospital & Research Institute during

one year time period starting from Jan 2017 to Dec 2017. Total 130 cases were included in the study. Detailed history was taken in all cases, clinical diagnosis was made and than relevant investigation were carried out. Final confirmation was done on histopathological examination. The specimens obtained were subjected to formalin fixation and paraffin embedding, stained with haematoxylin and eosin and special stain wherever required.

**RESULTS**

Total 130 cases were included in the study. The incidence of skin lesions were observed to occur more frequently in males (53.8%) and maximum lesions were in the age group of 21-30 years (25.4%) Neoplastic lesions (68.4%) outnumbered non neoplastic ones (31.6%).

**Table 1** Neoplastic Lesions (n= 89)

Benign	
Epidermal inclusion cyst	30(37.5%)
Vascular tumor (Haemangioma, glomus tumor & hamartoma)	12 (15%)
Non melanocytic tumor (Neurofibroma, seborrheic keratosis, keratocanthoma, & angiokeratoma,)	11 (13.8%)
Pigmentary lesion (Nevus)	5 (6.3%)
Hair follicle tumor	6 (7.4%)
Adnexal tumor (excluding hair follicle tumor)	4 (5%)
Fibrohistiocytic tumor	1 (1.2%)
Others (fibroma, fibroepithelial polyp, fibrolipoma, angioliopoma, proliferative fasciitis)	11 (13.8%)
80	

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Malignant	Squamous cell carcinoma	4 (44.4%)
	Basal cell carcinoma	1 (11.1%)
	Basisquamous carcinoma	1 (11.1%)
	Verrucous carcinoma	2 (22.3%)
	Lymphopro. Disorder infil skin	1 (11.1%)
		9

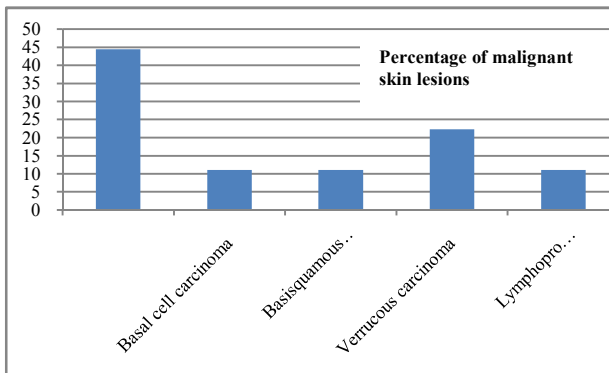
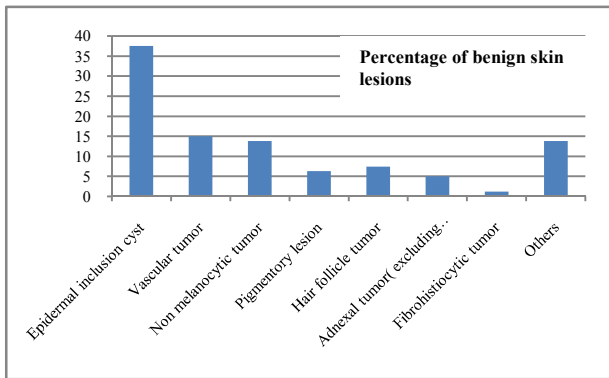
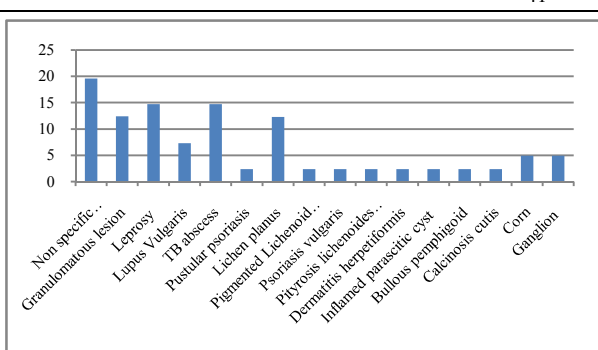


Table 2 Non neoplastic lesions

Inflammatory & infectious conditions	Non specific inflammatory lesion	8 (19.6%)
	Granulomatous lesion	1 (2.4%)
	Leprosy	6 (14.7%)
	Lupus Vulgaris	3 (7.3%)
	TB abscess	6 (14.7%)
	Pustular psoriasis	1 (2.4%)
	Lichen planus	5 (12.3%)
	Pigmented Lichenoid Dermatitis	1 (2.4%)
	Psoriasis vulgaris	1 (2.4%)
	Pityriasis lichenoides chronic	1 (2.4%)
	Dermatitis herpetiformis	1 (2.4%)
	Inflamed parasitic cyst	1 (2.4%)
	Bullous pemphigoid	1 (2.4%)
Others	Calcinosis cutis	1 (2.4%)
	Corn	2 (4.9%)
	Ganglion	2 (4.9%)

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Percentage of non-neoplastic skin lesions

Epidermal inclusion cyst (37.5%) and squamous cell carcinoma (44.4%) were the most common benign and malignant neoplastic lesions respectively.

Epidermal cysts are intradermal or subcutaneous lesions that are slow growing. These cysts had wall composed of true epidermis and were filled with keratin material that was arranged in laminated layers. We reported total of 33 cases, some of them showed foreign body inflammatory reaction in the wall. In contrast to epidermal cysts, the wall of Trichilemmal cyst showed characteristic absence of granular layer of epidermis with abrupt keratinisation. In our study, all 5 Trichilemmal cysts (6.2%) showed typical histomorphology without signs of rupture. Proliferating Trichilemmal cysts can also show trichilemmal type of keratinisation, but these were usually solid with tumor like proliferation. Other benign neoplastic lesions reported were- Nevus Lipomatous Cutaneous Superficialis, rare disease characterised by groups of ectopic fat cells in the papillary or reticular dermis. We reported two cases, in 10 year male and another in 19 year male.

Seboherreic keratosis, characterized by basal proliferation composed of monomorphous keratinocytes, laminated hyperkeratosis and pseudohorn cysts. We reported two cases, both were females. Out of two one 70 year old female presented with clinical diagnosis of naevus, and other one presented as wart but on histopathology both were reported as seboherreic keratosis.

We reported four cases of benign adnexal tumor, one was diagnosed as nodular hidradenoma in a 17 year male who presented with clinical diagnosis of simple cyst and on histopathology it was diagnosed as cystic variant of nodular hidradenoma as it showed well circumscribed, lobulated, and partly cystic dermal nodule. Lobules contained cells with clear cytoplasm and cystic spaces filled with eosinophilic material. Other one was diagnosed as eccrine spiroadenoma in 24 year female, which showed well circumscribed neoplasm with solid and tubular components, sheets of large cells with pale cytoplasm. One case of tricoepithelioma in a 50 year female presented as growth of right toe, it showed basaloid cells arranged in cords and tubules, separated by fibroblastic stroma. We also reported one tumor of hair follicle origin, proliferating trichilemmal tumor or pilar tumor which presented with clinical diagnosis of sebaceous cyst scalp.

On histopathology it showed bands of squamous epithelium with trichilemmal type keartinization. Solid with pushing borders and lobulated contour. Cells lining the periphery of the tumoural islands were eosinophilic and clear.

We reported one lesion as prokeratosis puncta in a 20 year female, it showed disrupted granular layer, parakeratosis and increased melanocytes in papillary dermis.

Squamous cell carcinoma was the predominant malignancy comprising of 6 cases. Out of 6 cases, 4 were squamous cell carcinoma and two were variants (verrucous carcinoma). Out of four SCC, one was well differentiated, two were moderately differentiated and one was poorly differentiated.

This study also included one case of Lymphoproliferative disorder infiltrating skin in a 38 year female. On histopathology it showed infiltration of dermis by small round cells with round nuclei and scanty cytoplasm (positive for

CD45) and inflammatory infiltrate seen between neoplastic cells.

We reported one lesion as angiolymphoid hyperplasia with eosinophilia in a 55 year male. Initially skin biopsy was received and on histopathological examination angiolymphoid hyperplasia with eosinophilia was diagnosed. Subsequently we received excised tumor mass; it showed hyperkeratotic stratified squamous epithelium. Underlying tissue showed prominent vascular proliferation lined by plump endothelial cells and mixed inflammatory infiltrate of eosinophils and lymphocytes. Several lymphoid follicles were also seen.

Among non neoplastic lesions, non specific chronic inflammation(19.6%) was predominant with variable acanthosis, lymphoplasmacytic infiltration or predominant lymphocytic infiltration in underlying dermis.

Other cases were, leprosy (14.7%), lupus vulgaris (7.3%), pustular psoriasis(2.4%), lichen planus(12.3%), pityriosis lichenoides chronic(2.4%), dermatitis herpetiformis(2.4%), bullous pemphigoid (2.4%) etc.

Out of 6 cases of leprosy two were lepromatous, one was tuberculoid and three were borderline. We reported 5 cases of lichen planus. It is a common disorder of the stratified squamous epithelium that affects oral and genital mucous membranes, skin and scalp. Hstopathology revealed parakeratosis with hypergranulosis and mild basal cell hyperplasia. Band-like inflammatory infiltrate, prominent civatte bodies and irregular acanthosis with saw tooth rete ridges.

We reported one lesion as pityriasis lichenoides chronic in a 31 year male, it showed mild limpho-plasmacytic infiltrate in superficial dermis and in perivascular location along with few melanophages. Epidermis is hyperplastic and showed parakeratosis.

One case was reported as bullous pemphigoid in a 80 year female. It revealed sub-basilar papillae. Roof consisting of epidermis and dense infiltrate consists of eosinophils, neutrophils and lymphocytes were seen in subepidermal region and around appendages. Bullous pemphigoid (BP) is a subepidermal blistering skin disease that usually occurs in the elderly population and is characterized by large tense blisters.<sup>15</sup> One case of dermatitis herpetiformis was reported in a 42 year male, it showed subepidermal blisters with accumulation of neutrophils at dermal papillae. It is a cutaneous vesiculobullous disease characterized by intense pruritus.

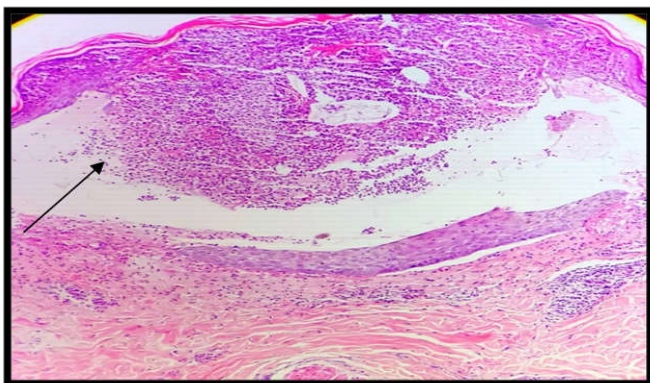


Fig 1 Pustular Psoriasis There is prominent collection of neutrophils in the upper half of the epidermis (↑).

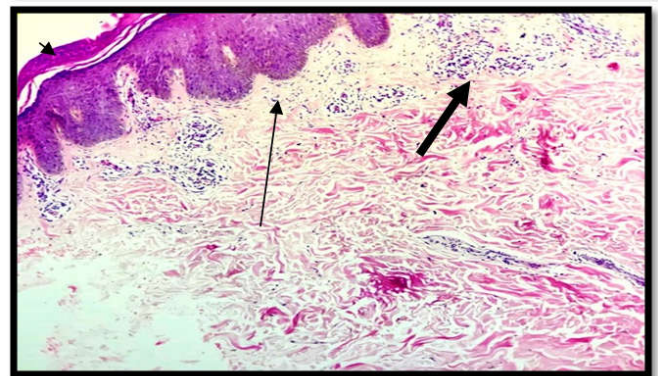


Fig 2 Pityriasis Lichenoides Chronica-Shows epidermal hyperplasia(↑), parakeratosis (▲) and lymphoplasmacytic infiltrate (↑).

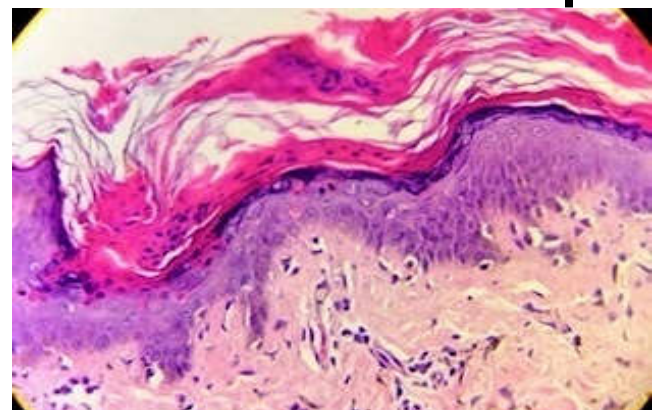


Fig 3 Prokeratosis Punctata-Shows disruption of granular layer & parakeratosis.

## DISCUSSION

Out of 130 cases, 70 were males and 60 were females. We found male predominance in our study, it was comparable to findings of Gaikwad SL *et al*<sup>1</sup> (2016), Grover *et al*<sup>4</sup> (2008), Rao and Kumar *et al*<sup>5</sup> (2003).

Among all cases included in this study neoplastic cases outnumbered non neoplastic cases, similar findings were noted by Gaikwad SL *et al*<sup>1</sup> (2016), Abubakar *et al*<sup>6</sup> (2016). On the contrary, Devi *et al*<sup>10</sup>, Das KK *et al*<sup>11</sup>, and Symvoulakis *et al*<sup>14</sup> have reported higher frequency of non infective dermatoses. Bissek *et al*<sup>12</sup>, Dimri *et al*<sup>13</sup> reported higher frequency of infective dermatoses whereas Renuka *et al*<sup>2</sup> found allergic dermatoses as the major group of diseases. The prevalence of various skin diseases varies according to geographical area and is related to racial, environmental and socioeconomic factors of the population<sup>2</sup>.

Squamous cell carcinoma was the predominant malignancy in our study which was comparable to findings of Abubakar *et al*<sup>6</sup>. (2016), Brand *et al*<sup>7</sup> (2000) and Wassberg *et al*<sup>8</sup>. (2001).

In the present study, the incidence of viral, fungal, bacterial and parasitic infections was found to be (29.2%). Out of all these infectious disorders, bacterial infection was the most prevalent. This is comparable to I.A. Al-Hoqail *et al*<sup>9</sup> (2012).

Study from Iran presented the occurrence of infectious and parasitic diseases, including infections of the skin and subcutaneous tissues.

Very low incidence of Hansen's disease and cutaneous tuberculosis, as reported by other authors as well<sup>10-11</sup>, can be attributed to the fact that these patients mainly attend either



government hospitals or leprosy centers and DOT centers where MDT is distributed free of cost.

## CONCLUSION

Our study got wide spectrum of skin lesions, though less in number but were noticeable. It showed higher prevalence of neoplastic lesions as compared to non neoplastic lesions. Epidermal inclusion cyst and squamous cell carcinoma formed the largest group in their respective categories. Current study also included few rare cases like pustular psoriasis, pityriasis lichenoides chronic, N. Lipomatosis cutaneous superficialis and proliferating trichilemmal tumor.

Histopathological examination combined with clinical findings and awareness in mind can help in correct diagnosis. It helps in predicting treatment and prognosis.

As the skin biopsy technique is fast, simple, and done at little inconvenience to the patient, the entire spectrum of the disease process can be correlated clinically and pathologically. Thus, timely reporting of skin diseases is of great importance for reducing disease burden and improving quality of life.

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