Gamut of Skin Lesions: A Retrospective, Histopathological Study

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Abstract

Introduction: Skin is one of the largest and prime sensory organs in the body. Skin biopsy is a simple and inexpensive procedure which can help in consolidating clinical diagnosis and help further management. The present study was performed with the objective of describing spectrum of skin lesions in relation to its histopathological features, age, sex and site of involvement. **Materials and Methods**: The present study was a retrospective study carried out over a period of one year (January 2016-January 2017) in a tertiary care hospital. Histopathological details, along with age, gender, site of distribution and type of lesion were tabulated. **Results**: A total of 280 skin biopsies were analyzed. Most of the cases fell in the age range of 30-40 years. Upper extremity was the commonest site. Majority were non neoplastic conditions (68.92%), followed by inconclusive cases (27.5%) and neoplastic lesions (3.57%). In non neoplastic lesions maximum fell into the category of non-infectious erythematous papular and squamous disease (48.7%). In neoplastic lesions, squamous cell carcinoma was the most common (50%). **Conclusion**: Dermatological lesions are by nature, heterogeneous with a varying age range, site distribution and histopathological features. The gold standard of diagnosis is histopathological examination which in conjunction with ancillary techniques and special stains, help in confirming the clinical diagnosis and improving patient management.

Keywords: Histopathology, Dermatology, Leprosy, Squamous cell carcinoma

Introduction

Skin is one of the largest and prime sensory organs in the body. It plays an important role as a barrier against numerous environmental agents. (1, 2) Histologically, the skin comprises of the epidermis, dermis and subcutis along with adnexal structures. (3-4)

There are a large spectrum of diseases ranging from inflammatory to neoplastic conditions which involve the skin. (1) Skin diseases are a common occurrence in developing countries such as India, with upto as much as 2000 diseases being known as of present. (3, 5) Pattern and prevalence of skin diseases differs greatly between different regions and countries, due to various factors such as social customs and environmental changes. (3, 5) The prevalence of these diseases range from 6.3 % to 11.6 % in India (2). The disability years lived due to skin diseases amounted to 4.02% of the total disability years in India in 2017, with the burden due to both infectious and non infectious skin diseases having increased over the past three decades. (6)

Histopathological study of skin biopsies are of utmost importance for an accurate diagnosis, and accordingly, further patient management by the dermatologist. (3). As of present, there have been relatively fewer number of studies conducted in southern India, regarding the histopathological spectrum of skin lesions. The present study was hence, performed with the objective of describing spectrum of skin lesions in relation to its histopathological features, age, sex and site of involvement, in a tertiary care hospital.

Materials and Methods

The present study was a retrospective study carried out over a period of one year (January 2016-January 2017) in a tertiary care hospital, Mangaluru, Karnataka, India. Skin biopsies received in the Department of Pathology were fixed in 10% buffered formalin and appropriate tissue processing was carried out. Slides were

stained with hematoxylin and eosin and special stains such as Periodic acid-Schiff stain, Fite-Faraco stain, Verhoeff's stain, Ziehl-Neelson stain, and Masson trichome stain were performed accordingly. Slides were examined under light microscopy, and a histopathological diagnosis was given with regards to clinical correlation as well. Inclusion criteria were all skin biopsies received in histopathological section irrespective of age, sex and clinical diagnosis. Exclusion criteria were inadequate skin biopsy samples and autolysed skin samples. Age, sex, site of disease and clinical diagnosis was also collected and tabulated.

Results

We analyzed a total of 280 cases of skin biopsies, out of which majority were non neoplastic conditions (68.92%), followed by inconclusive cases (27.5%) and neoplastic lesions (3.57%). (Table 1)

The ages of the patients varied over a wide range (3years-70 years) and a male preponderance was noted (n= 170, 60.71%). Majority of patients fell in to the age bracket of 30-40 years (60%), followed by 20-30 years and 40-50 years.

The most common non neoplastic skin lesions were observed to be in the group of non-infectious erythematous papular and squamous diseases (n=94, 33.57%). Out of this Lichen Planus constituted the majority (n=25, 26.95%), followed by an equal percentage of Psoriasis (n=11, 11.7%) and dermatitis cases (n=11, 11.7%).

Infectious Lesions comprised of 10.35 % (n=29) total cases. Here, Verruca vulgaris was the most common lesion observed (n= 15, 51.724%), followed by a close number of lesions diagnosed as Leprosy (n=13, 44.827%)

Non-infectious vesiculobullous and vesiculopustular disease comprised of 7. 14% (n=20) of the total cases. In this category, Pemphigus Vulgaris was the majority (n=8, 40%), followed by Bullous Pemphigoid (n=5, 25%). (Table 2)

Non neoplastic lesions were most commonly noted in the upper extremity (n=65, 33.67%) followed by the trunk (n=20, 10.36%), lower extremity (n= 5, 2.59%) and head and neck (n= 4, 2.07 %).

In the case of neoplastic lesions, the most common neoplasm was squamous cell carcinoma (n=5, 50%), followed by basal cell carcinoma (n=3, 30%) and malignant melanoma (n=2, 20%). (Table 3).

The ages of patients diagnosed with these neoplastic lesions ranged from 40 to 68 years.

With regards to neoplastic lesion the commonest involved site was head and neck (n= 7, 70%), followed by lower extremity (n=2, 20%) and upper extremity (n=1, 10%). Overall, the commonest site was the upper extremities (n= 132, 47.14%).

Table 1: Type of Skin lesions diagnosed on Histopathology

Type of skin lesion	No. of cases (%)
Non neoplastic lesions	N=193, 68.92%
Neoplastic Lesions	N=10, 3.57%
Inconclusive Lesions	N=77, 27.5%

Table 2: Types of Non Neoplastic lesions diagnosed on Histopathology

Category of skin lesions	Number of cases (%)
Non-infectious erythematous papular and squamous disease	94 (48.7%)
Infectious Lesion	29 (15.02%)
Non-infectious vesiculobullous and vesiculopustular disease	20 (10.36%)
Vascular disease	10 (5.18%)
Connective tissue disease	07 (3.62%)
Inflammatory disease	07 (3.62%)
Pigmented disease	07 (3.62%)
Autoimmune disease	07(3.62%)
Adnexal tumors	05 (2.59%)
Photosensitivity	02 (1.03%)
Drug related eruption	02 (1.03%)
Congenital disease	01 (0.051%)
Miscellaneous	02(1.03%)

Table 3 : Types of Neoplastic lesions diagnosed on Histopathology

Type of Lesion	Number of cases (%)
Squamous cell carcinoma	05 (50%)
Basal Cell Carcinoma	03 (30%)
Malignant Melanoma	02 (20%)

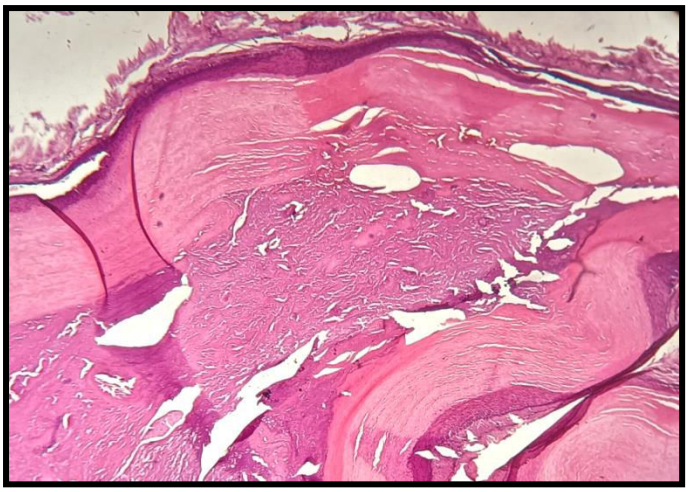

Figure 1 : Histopathology of Pilomatrixoma (H& E-10x)

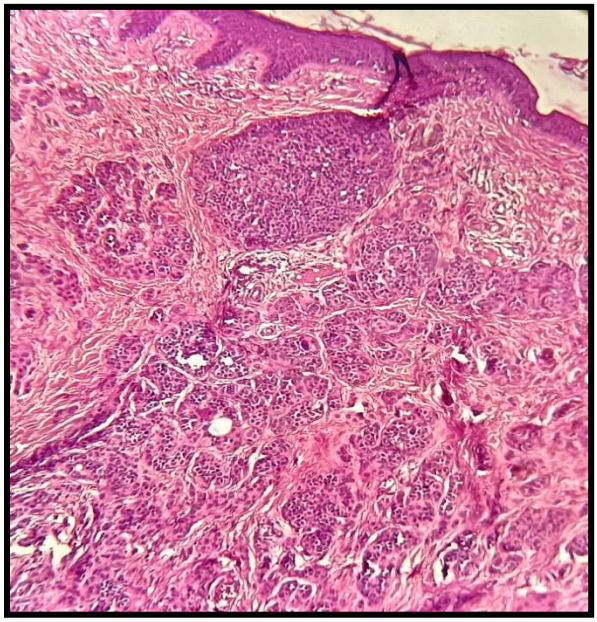

Figure 2: Histopathology of Compound Nevus (H&E-10 x)

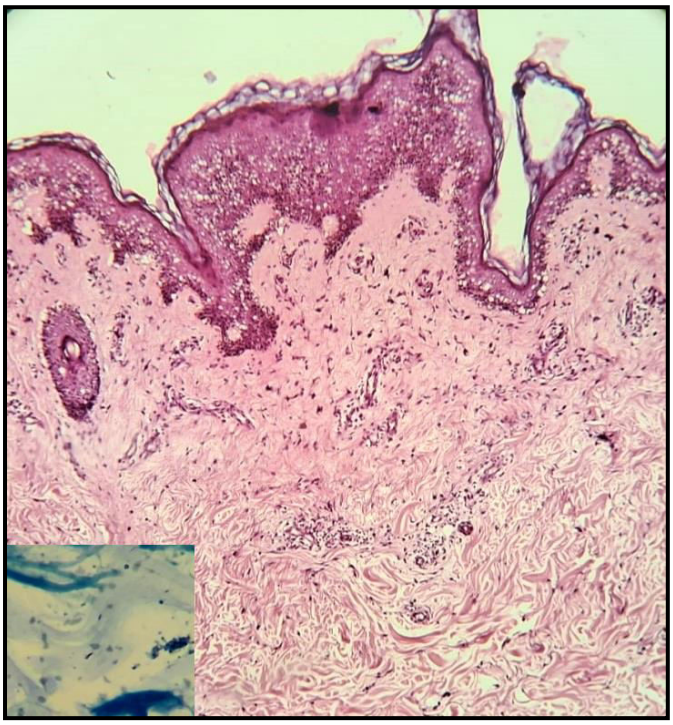

Figure 3: Histopathology of Mid Borderline Leprosy (H&E-10X) showing acid fast bacilli (Inset, Fite Faraco-100x)

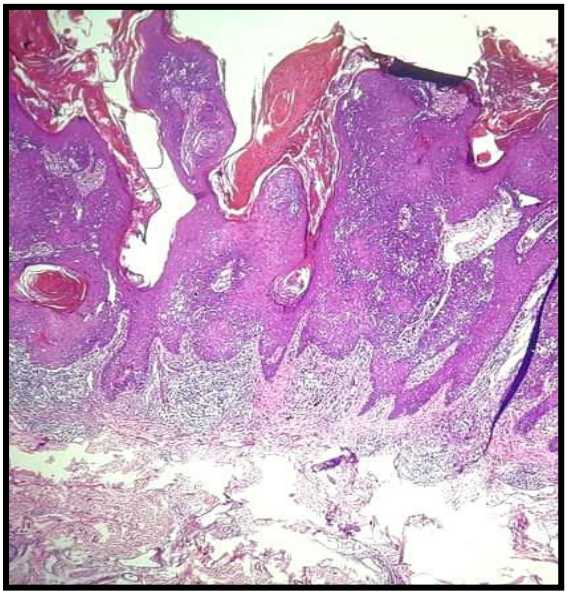

Figure 4 : Histopathology of Seborrheic Keratosis (H& E-10x)

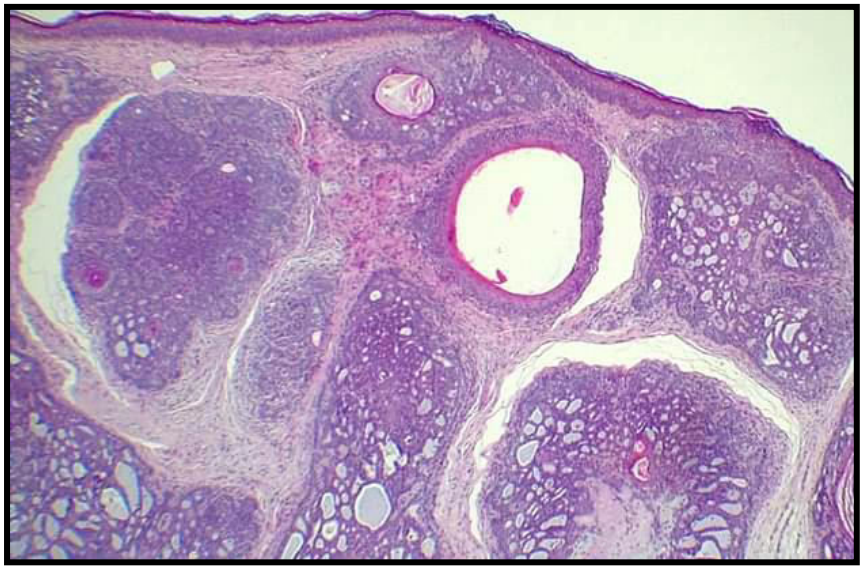

Figure 5 : Histopathology of Trichoblastoma (H& E-10x)

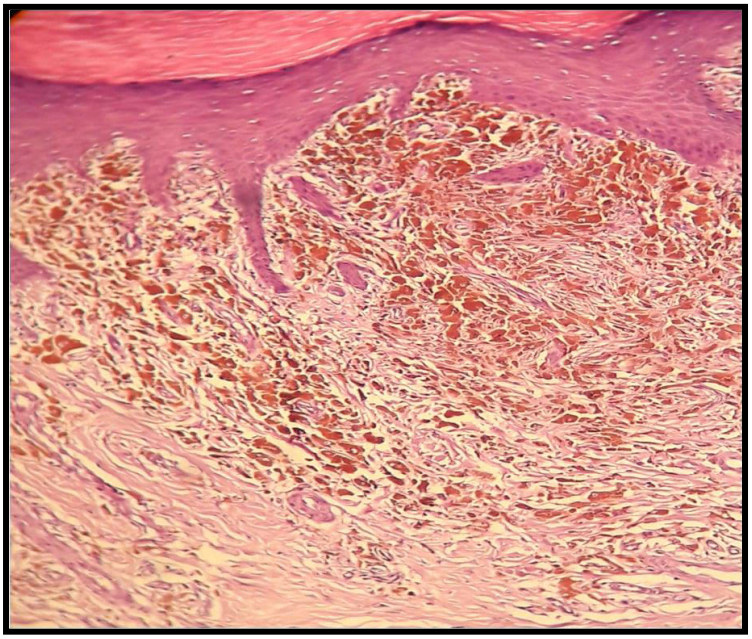

Figure 6 : Histopathology showing Malignant Melanoma (H & E-10x)

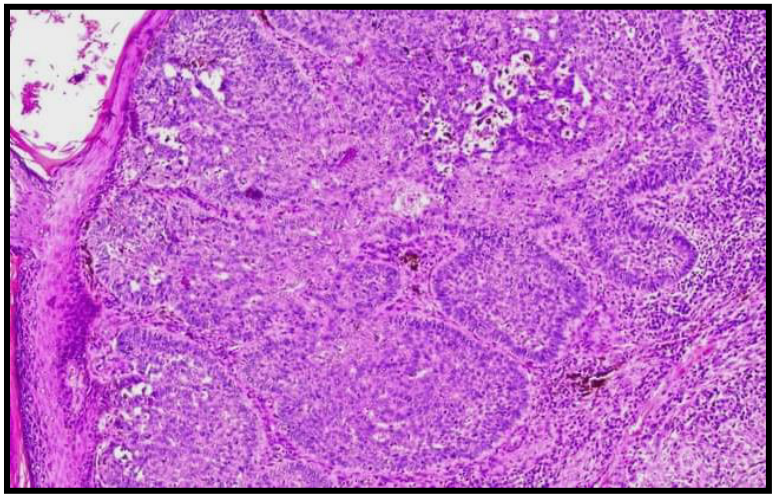

Figure 7 : Histopathology showing Basal cell carcinoma (H & E-10x)

Discussion

Studies done by Bezbaruah R et al. (7) and Abubakar SD et al (8) found the highest frequency of skin lesions in a younger age group of 21–30 years of age. Adhikari RC et al. (5) found the highest frequency in 31–40 years of age. These findings were similar to those in this study where there was preponderance in a relatively younger age group (30-40 years).

Both Dayal et al. (9) and Kumar V et al. (10) reported a male preponderance in their study which was similar to the findings in the present study. Upper extremity was the commonest site of lesion in this study, similar the findings of Goswami et al. (3)

There was a majority of non neoplastic cases in our study (68.92%), which was similar to findings of Goswami et al (87.1% non neoplastic lesions).(3) In contrast, Abubakar SD et al.(8); and Bezbaruah R et al.(7) observed a greater frequency of neoplastic lesions.

Agarwal D reported maximum cases of non infectious erythematous disease including dermatitis and psoriasis in their study which was similar to the findings in this study. However, in this category we observed majority cases of Lichen Planus, followed by Psoriasis and Dermatitis. (11). This was also in conjunction to findings reported by Reddy et al. (12) in their study.

The most common infectious lesion observed in the present study was Verruca Vulgaris (51.7%), followed closely by Leprosy (44.8%). This was in contrast to the findings of Goswami et al. (3), and Agarwal et al. (11), where leprosy was the commonest infectious skin lesion. Verruca vulgaris manifests as warts , being transmitted easily , even by touch and is seen more commonly in pediatric age group. Leprosy is an air borne contagious disease. Community education is mandated with regard to these contagious, infectious disesases to prevent transmission. (3)

Several studies such as by Thapa et al. (13), Rauniyar et al. (14) and Goel et al (15) have found the commonest neoplastic lesion to be keratinocytic tumours. This was similar to the findings, here where squamous cell carcinoma (50%) was the commonest skin tumour. In the present study the commonest site of neoplastic lesions was head and neck (70%) which was similar to the findings observed by Goel P et al. (15).

Conclusion

Skin biopsy is a simple and inexpensive procedure which can help in consolidating clinical diagnosis and help further management. The gold standard of diagnosis is histopathological examination which in conjunction with ancillary techniques and special stains, help in confirming the diagnosis. Dermatological lesions are by nature, heterogeneous with a varying age range, site distribution and histopathological features. Squamous cell carcinoma was the commonest neoplastic lesion in our study, which entails the importance of community education regarding harmful effects of UV radiation, in a tropical country such as ours. Verruca Vulgaris and Leprosy being the commonest infectious conditions in our study indicates need for strengthening of preventive measures for the same.

Conflicts of Interest

None declared.

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