

Original Research Article

Spectrum of pigmented lesions of skin: a retrospective study in a tertiary health care of Southern Assam

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ABSTRACT

Background: Pigmented lesions are one of the most common cause for dermatological consultation. Most of them are benign, while a majority of them have malignant transformation and are called as melanoma. A careful histopathological interpretation by the pathologist is needed in the diagnosis and management of these lesions. Aims and objectives of the study were- 1. To study the spectrum of various pigmented skin lesions. 2. To establish the correlation between the microscopic pathological findings of various skin lesions with the presenting clinical features.

Methods: A 3-year study was conducted in the pathology department of tertiary care centre on all skin biopsy tissue which came as pigmented lesion. The entire skin biopsy is submitted for routine processing and embedded in paraffin wax. 3-5 mm thick paraffin sections of the skin biopsy are stained with H and E.

Results: Out of 432 skin biopsies studied during this period, 58 cases were diagnosed as pigmented skin lesions. Of these, the biopsy tissue was inadequate in 5 cases while five cases presented with non-specific findings. Of the remaining cases, 15 were malignant and 33 were benign lesions. Only 18 of these were of melanocytic origin with 8 cases of malignant melanoma and 10 nevi. In the present study an analysis of the clinical diagnosis with the histopathological diagnosis revealed a positive correlation in 54% cases.

Conclusions: A good clinical correlation and biopsy with histopathological diagnosis is necessary for the accurate diagnosis and definite treatment of patients with pigmented skin lesions.

Keywords: Pigmented lesions, Benign, Malignant, Histopathology

INTRODUCTION

Pigmented skin lesions are one of the most common cause for dermatological consultation. Pigmented lesions can be defined as altered pigmentation of the skin and mucous membranes that have a flat or raised growth, which is blue, brown, black, or grey coloured. It depends on many factors like age, sex, genetics, and environment. Most of them are benign and are called nevus, while a majority of them have malignant transformation and are called as melanoma.^{1,14} The microscopic examination of skin tissue is one of the most important diagnostic ancillary technique in the management of patients with

skin disorders.² Hence, a careful histopathological interpretation by the pathologist is needed for the diagnosis of these lesions.

We conducted a 3-year study of pigmented lesions of skin which came for histopathological examination to study the pattern of occurrence of these lesions in our setting.

Aims and objectives

Aim and objectives of the study were-1. To study the spectrum of various pigmented skin lesions. 2. To

establish correlation between the microscopic pathological findings of various skin lesions with the presenting clinical features.

METHODS

A 3-year retrospective, cross-sectional study was conducted from January 2017 to December 2019, in the pathology department of tertiary care centre, on all skin biopsy tissue which came as pigmented lesion. Punch biopsies, excision biopsies were sent from the department of dermatology to the department of pathology for histopathological examination. All specimen submitted to histological diagnosis were sent in formalin solution and were accompanied by detailed clinical information mentioned in the request form. Gross examination of the skin biopsy, with the 3-dimensional size and shape of the skin biopsy, is assessed and noted. The entire skin biopsy is submitted for routine processing and embedded in paraffin wax. 3-5 mm thick paraffin sections of the skin biopsy are stained with haematoxylin and eosin. The study was approved by the institutional ethics committee.

Inclusion criteria

Non-neoplastic and neoplastic pigmented skin lesions in various age groups that we received in the department of pathology were included in the study.

Samples were collected using stratified random sampling technique.

The results were calculated in Microsoft office excel 2007.

RESULTS

The period of our study was of 3 years duration from January 2017 to December 2019. Out of 432 skin biopsies studied during this period, 48 cases were diagnosed as pigmented skin lesions. Out of 48 pigmented skin lesions, 18 of these were of melanocytic origin with 8 cases of malignant melanoma and 10 nevi as shown in Table 1.

Table 1: Distribution of pigmented lesions.

Variables	No of cases	Total (%)
Melanocytic lesions	18	37.5
Non melanocytic lesions	30	62.5

Of these, the biopsy tissue was inadequate in 5 cases while five cases presented with non-specific findings. The remaining cases were divided into benign and malignant lesions. The male to female ratio was found to be 1:2 (Table 2).

Out of the 48 cases, 15 was malignant and 33 were benign as shown in Table 3. The commonest site of the

lesions was the face followed by upper limb and lower limb respectively as shown in Table 4.

Table 2: Gender wise distribution of the lesions.

Gender	No. of pigmented skin lesions
Male	16
Female	32

Table 3: Frequency of various pigmented skin lesions.

Pigmented lesions	No of cases	Total (%)
Malignant	15	31.25
Benign	33	68.75

Table 4: Distribution of the pigmented lesions on various sites.

Site of lesion	Benign	Total (%)	Malignant	Total (%)
Face	21	63	11	73.33
Abdomen	7	21	0	0
Lower extremity	5	15	4	26.66

Among the benign cases, melanocytic nevi accounted for majority of them followed by seborrheic keratosis as shown in Table 5. Malignant melanoma accounted for maximum of the malignant pigmented lesions followed by pigmented basal cell carcinoma as shown in Table 6.

Table 5: Frequency of benign pigmented lesions.

Benign lesions	No of cases	Total (%)
Naevus	10	30.3
Pigmented Seborrheic keratitis	7	21.2
Lentigo simplex	3	9.09
Lichen planus pigmentosus	2	6.06
DLE	2	6.06
PMH	2	6.06
DFSP	1	3.03
Actinic lentigo	2	6.06
ILVEN	1	3.03
Acute drug reaction	3	9.09

Table 6: Frequency of malignant pigmented lesions.

Malignant lesions	No of cases	Total (%)
Malignant melanoma	8	53.33
Pigmented BCC	6	40
Basaloid SCC (pigmented)	1	6.66

Out of 48 pigmented skin lesions, 18 of these were of melanocytic origin with 8 cases of malignant melanoma (Figure 1) and 10 nevi. The remaining included pigmented basal cell carcinoma (BCC) (Figure 2), pigmented seborrheic keratosis (Figure 3), squamous cell carcinoma (SCC), lentigo simplex, lichen planus pigmentosus, discoid lupus erythematosus (DLE), inflammatory linear verrucous epidermal nevus (ILVEN), dermatofibrosarcoma protuberans (DFSP) acute drug reaction, progressive macular hyperpigmentation (PMH), actinic lentigo.

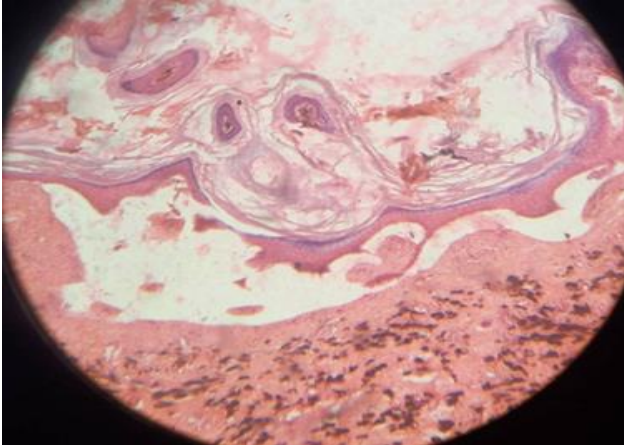


Figure 1: Malignant melanoma.

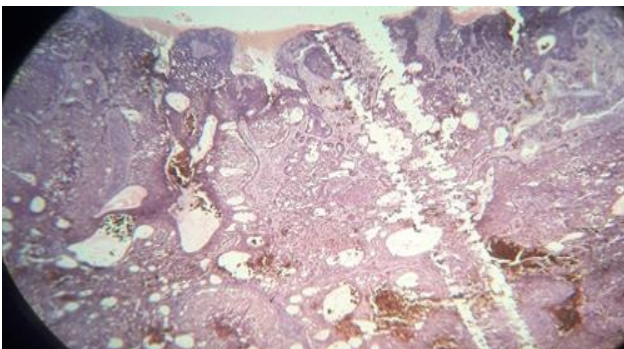


Figure 2: Pigmented basal cell carcinoma.

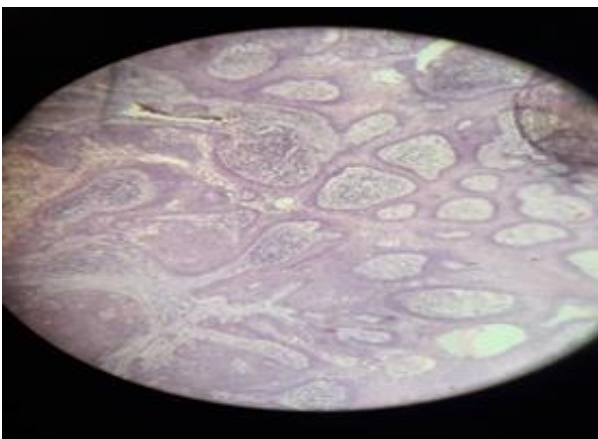


Figure 3: Seborrheic keratosis.

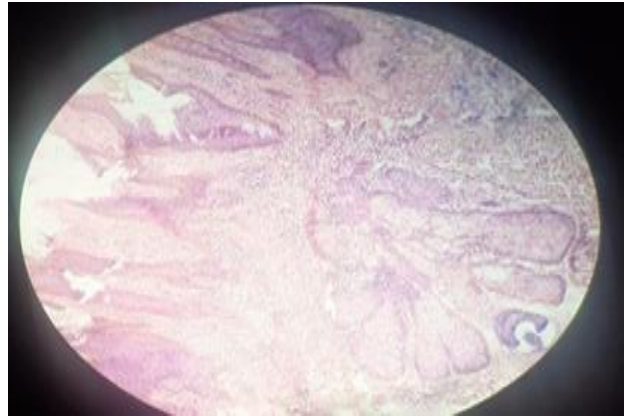


Figure 4: Nevus sebaceus.

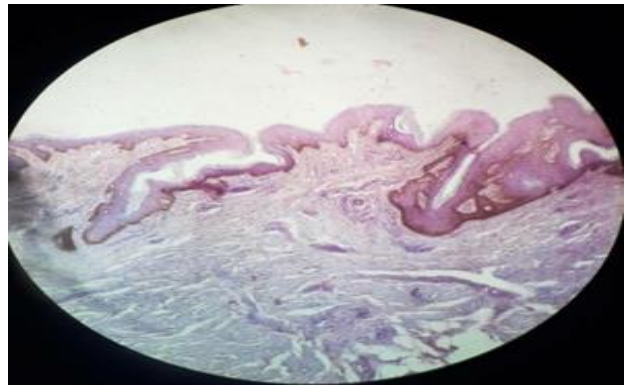


Figure 5: Compound nevus.

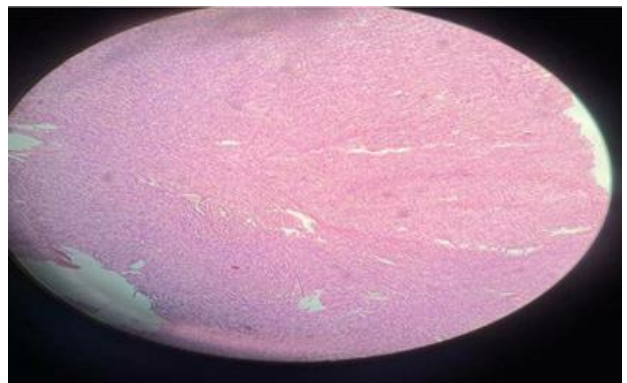


Figure 6: DFSP.

DISCUSSION

In this study, an analysis of the clinical diagnosis with the histopathological diagnosis was done. A total number of 48 pigmented lesions were evaluated which included 15 malignant lesions and 33 benign lesions (Table 2). Of the 48 cases, 37.5% cases were of melanocytic origin whereas the remaining were non melanocytic lesions (Table 1).

The melanocytic group comprised of benign melanocytic naevi, and malignant melanoma (Figure 1) while

pigmented basal cell carcinoma (Figure 2), pigmented seborrhoea keratosis (Figure 3), lentigo simplex, lichen planus pigmentosus, actinic lentigo, DLE, ILVEN, DFSP (Figure 6), progressive macular hyperpigmentation comprised the nonmelanocytic lesions.

The most common pigmented lesion was found to be nevi followed by malignant melanoma. Suvernakar et al also found nevi to be commoner than melanoma. Similar findings were also found in studies by Laishram et al.^{1,3} Nevi were found to be the most common benign lesion in our study followed by seborrheic keratosis (Table 5). Seborrheic keratosis has been reported to be one of the most common skin tumors seen by dermatologists in their daily clinical practice.¹²

Malignant melanoma accounted for maximum of the malignant pigmented lesions (Table 6). According to a study conducted by WHO, it has been observed that the incidence of malignant melanoma is raising rapidly when compared to other cancers.⁹ We also reported a female preponderance as substantiated by another paper.¹³

Age and sex distribution

Our study was conducted in age group from 15 to 70 years. Out of 48 cases in our study, majority cases were in the age group of 45 to 65 years, followed by in the age group of 21-40 years. The male to female ratio was 1:2 (Table 2). The findings were similar to Laishram et al, Mackie et al, and dissimilar with Youl et al.^{1,7,8}

Site distribution of lesions

Out of total 33 benign lesions in the present study, face is most commonly affected site constituting about 63% cases followed by abdomen constituting about 21% cases and lower extremities involving 15% cases (Table 4). Among face, cheek is the most common affected site constituting about 45% cases. Crasta et al reported head and neck involvement in 70% cases, trunk in 20% and lower extremity in 10% cases.⁴

Out of total 15 malignant cases in our study, the most common site involved is face constituting about 73% (Table 4), which highlights the fact that melanoma occurs mostly on sun exposed parts of the body. A study from Japan, however, showed melanoma in their region was mostly observed on soles of lower limbs.¹⁰

Out of 8 cases of malignant melanoma diagnosed clinically, only 5 cases on histopathology were found to be consistent with melanoma. Remaining 3 cases proved to basal cell carcinoma (1 case), seborrheic keratosis (1 case) and intradermal nevus (1 case). Crasta et al in their study on pigmented lesions of non-melanocytic origin, found seborrheic keratosis and basal cell carcinoma to be the common nonmelanocytic lesions that mimic melanocytic lesions including melanoma.⁴

Clinical and histopathological correlation

In the present study an analysis of the clinical diagnosis with the histopathological diagnosis revealed a positive correlation in 54% cases, thus emphasizing the importance and utility of histopathology in arriving at a conclusive diagnosis. Curley et al reported an overall sensitivity (diagnostic accuracy) of 50% in clinically evaluating pigmented lesions.⁵ Another study found a high positive correlation of 95% between clinical and histopathological diagnosis.⁶

Hence, histopathological examination often serves as a confirmative part of the diagnosis.¹⁵

Limitations

The limitation of this study is that it was a hospital-based study with small sample size. To validate our findings, further research with bigger sample size is needed.

CONCLUSION

Pigmented Skin lesions can be both benign and malignant and diagnosis of these commonly encountered lesions depends upon the familiarity of clinical presentation and hence, a proper knowledge of the clinical mimickers is very essential. A good clinical correlation and biopsy with histopathological diagnosis is therefore necessary for the accurate diagnosis and definite treatment of patients with pigmented skin lesions.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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