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Histopathological Study of Pigmented Cutaneous Lesions –A Tertiary Care Center Study

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ABSTRACT

A pigmented lesion is defined as a flat or raised growth which is brown, blue, gray or black in colour and depends on factors like age, sex, genetics and environment. In India, they are a major concern causing great psychological impact on quality of life due to disfigurement. They include melanocytic as well as non-melanocytic lesions. Histopathological examination of skin biopsies of these lesions is necessary for accurate diagnosis. The aim of this study is to determine the spectrum of pigmented skin lesions in a tertiary care centre.

A total of 50 cases of pigmented skin lesions were received over a period of 1 year in our department. Inadequate and inconclusive skin biopsies were excluded from the study.

In the study conducted 50 cases were received. Out of them 2 were inadequate so 48 cases were evaluated. In our study there were 16 males and 32 females. Pigmented skin lesions were categorised into melanocytic, non-melanocytic and non-specific. There were 14 (29.2%) melanocytic lesions out of which 13 were benign and 1 was malignant. Non-melanocytic lesions(28,58.3%) were further subcategorised into vascular(1,%), reactive {post inflammatory pigmentation(9,%)}, keratinocytic (10,%) and others(8,%). Most common site of distribution was trunk (21,43.8%) followed by head & neck(17,35.4%) and extremeties (20.8%).

KEY WORDS: Pigmented lesion, Melanocytic nevi, Histopathology

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INTRODUCTION

Pigmented cutaneous lesions are one of the most frequent causes for dermatologic consultation. A pigmented lesion is defined as a flat or raised growth which is brown, blue, gray or black in color and depends on factors like age, sex, genetics and environment[1]. Disorders of pigmentation can be due to migration abnormalities of melanocytes from neural crest to the skin during embryogenesis, impairment of melanosome transfer to keratinocytes and alteration in melanin synthesis[2,3]. In India, they are a major concern as they cause great psychological impact on quality of life due to disfigurement[4,] Hyperpigmentation apart from causing cosmetic deformity can also reflect underlying organ dysfunction[5,6]. Pigmented lesions include melanocytic as well as non-melanocytic lesions. Melanocytic lesions are important as malignant melanoma which represents less than 5% of all cutaneous malignancies, accounts for the majority of skin cancer deaths[7]. Histopathological examination of skin biopsies of these lesions is necessary for accurate diagnosis. It often serves as a complementary or a confirmative part of the diagnosis[8]. The histology based treatment principles may be helpful for establishing a standardized treatment algorithm for hyperpigmented skin lesions [9,10]. The aim of this study is to determine the spectrum of pigmented skin lesions in a tertiary care center.

EXPERIMENTAL SELECTION

MATERIALS AND METHODS

In this study conducted at the department of Pathology, GMC Jammu, a total of 50 cases of pigmented skin lesions were evaluated. All the biopsies and resected specimens received in our department were properly labelled, numbered and immediately fixed in 10% formalin They were autoprocessed and multiple sections were studied after staining with haematoxylin and eosin. A detailed microscopic examination of the stained slides was carried out and the lesions were given a histopathological diagnosis. Inadequate and inconclusive skin biopsies were excluded from the study.

RESULTS AND OBSERVATIONS

In the study conducted 50 cases were received. Out of them 2 were inadequate so 48 cases were evaluated.

Table No. 1: "Sex Distribution"

S.NO	Sex	Number
1	Males	16
2	Females	32

In our study there were 16 males and 32 females. The youngest patient was 6 years old and oldest was 73 years old.

Table no.2: "Distribution of pigmented skin lesions based on its histopathology"

S.NO	Lesions	Number	Percentage (%)
1	Melanocytic	14	29.2
	Intradermal Nevus	9	69.2
	Compound Nevus	3	23.1
	Junctional Nevus	1	7.7
	Malignant Melanoma	1	7.1
2	Non melanocytic	28	58.3
	vascular	1	3.6
	Reactive	9	32.1
	Keratinocytic	10	35.7
	Others	8	28.6
3	Nonspecific	6	12.5

Pigmented skin lesions were categorised into melanocytic, non-melanocytic and non-specific. There were 14 (29.2%) melanocytic lesions out of which 13 were benign and 1 was malignant. Benign cases included intradermal nevus (9,69.2%), compound nevus (3,23.1%) and junctional nevus (1,7.7%). There was 1 case of malignant melanoma (1,7.1%). Non-melanocytic lesions(28,58.3%) were further subcategorised into vascular(1,3.6%), reactive {post inflammatory pigmentation (9,32.1%)}, keratinocytic (10,35.7%) and others (8,28.6%).

In the vascular subcategory of non-melanocytic lesions(28) there was 1 case of cavernous hemangioma. Reactive subcategory of non-melanocytic lesions included cases of Prurigo Nodularis(2), Erythema Dyschronicus Perstans(1), Lichen Planus(2), Dermatofibroma(1), Chronic Non Specific Dermatitis(2) and Spongiotic Dermatitis(1). Keratinocytic lesions included 8 cases of seborrheic keratosis and 2 cases of beckers melanosis. Other cases were morphea(1), Xeroderma Pigmentosa(1), Keratosis Pilaris(2), Idiopathic Eruptive Macular Pigmentation(1), Xanthoma(1) and Wart(2).

Table no. 3: "Distribution of Non Melanocytic lesions"

S.No	Category	Lesion	Number
1	Vascular	Cavernous Hemangioma	1
2	Reactive	Prurigo Nodularis	2
		Erythema Dyschronicus Perstans	1
		Lichen Planus	2
		Dermatofibroma	1
		Chronic Non Specific Dermatitis	2
		Spongiotic Dermatitis	1
3	Keratinocytic	Seborrheic Keratosis	8
		Beckers Melanosis	2
4	Others	Morphea	1
		Xeroderma Pigmentosa	1
		Keratosis Pilaris	2
		Idiopathic Eruptive Macular Pigmentation	1
		Xanthoma	1
		Wart	2
	Total		28

Table No.4: "Site Distribution of pigmented skin lesions"

S.No	Site	Number	Percentage (%)
1	Head & Neck	17	35.4
2	Trunk	21	43.8
3	Extremeties	10	20.8
	Total	48	100

Most common site of distribution was trunk (21,43.8%) followed by head & neck(17,35.4%) and extremeties(20.8%).

Figure no.1 : Pigmented Seborrheic Keratosis (H& E stain; 10X)

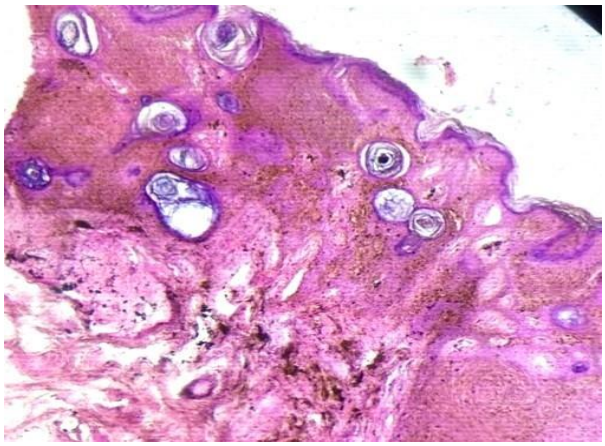


Figure No. 2: Lichen Planus pigmentosus (H& E; 40X)

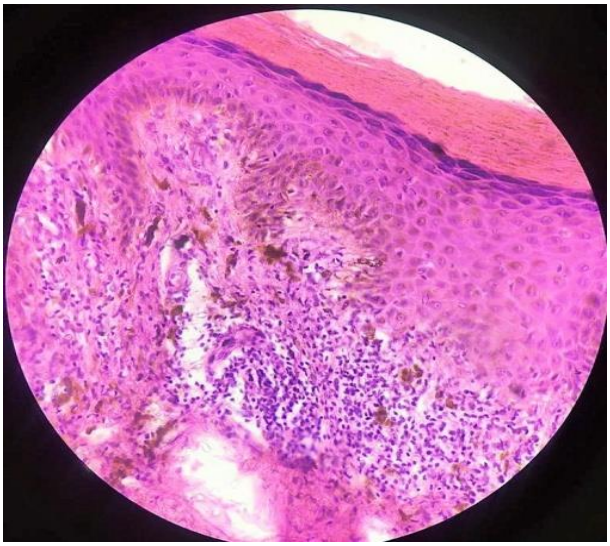
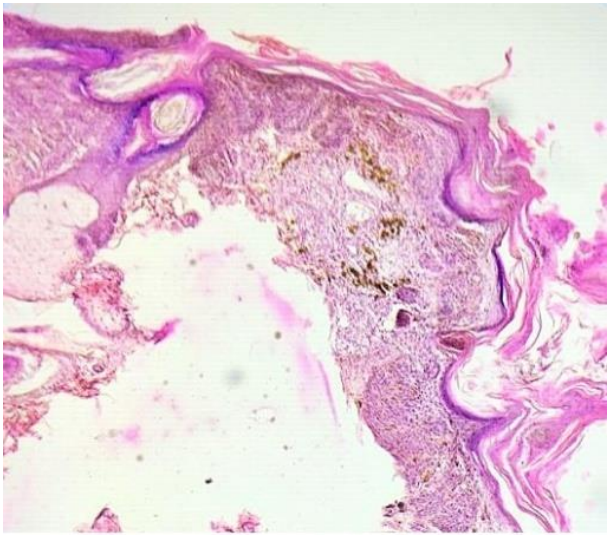


Figure No. 3: Xeroderma Pigmentosum (H & E stain: 10X)



DISCUSSION

In our study we evaluated 48 cases of pigmented skin lesions. There were 16 males and 32 females. Our results were similar to Parvathi M et al[11] and dissimilar with Suvernakar S et al[12] where male to female (M:F) ratio was found to be 1:1.1. Youl PH et al[13] observed M:F ratio of 1.4:1. and Mruthyunjayappa S et al[14] found a M:F ratio of 0.8.

Most common site of distribution was trunk (21,43.8%) followed by head & neck(17,35.4%) and extremeties(10,20.8%). Crasta J et al[15] reported head and neck involvement in 70% cases, trunk in 20% and lower extremity in 10% cases while Suvernakar S et al[12] revealed head and neck involvement in 63.64% cases, lower extremity in 22.73% and trunk in 13.64% cases. Jayker SS et al[16] found extremities (upper and lower limbs) as the most common site of distribution of hyperpigmented skin lesions. Other sites included back, face, neck, chest, abdomen and all over the body with multiple sites involvement in most of the cases.

Pigmented skin lesions were categorised into melanocytic, non-melanocytic and non-specific. There were 14(29.2%) melanocytic lesions out of which 13 were benign and 1 was malignant. Benign cases included intradermal nevus(9,69.2%), compound nevus(3,23.1%) and junctional nevus (1,7.7%). There was 1 case of malignant melanoma(1,7.1%). Similarly in the study done by Suvernakar S et al[12] majority of the nevi were intradermal followed by compound and junctional nevus. Malignant melanoma accounted for 5 cases. In the study conducted by Parvathi M et al[11] malignant melanoma consisted of only 2 cases (4.6%) and both were observed on extremities in females which is similar to our study. In the study conducted by Pailoor K et al[17] on benign melanocytic nevi and melanoma the most common melanocytic nevi was Intradermal nevus (66%) ,followed by compound nevus (21%) and blue nevus (7%). There were two cases of spitz nevus (4%) and one case of junctional nevus (2%). Malignant melanoma comprised 20% of all the melanocytic lesions. Similar predominance of intradermal nevus (66%) was seen in the study conducted by Azam et al[18]. We found the average age incidence of melanocytic nevi to be 37.2 years which was similar to that observed by Hussain et al[19].

In our study non-melanocytic lesions (28,58.3%) were further subcategorised into vascular (1,3.6%), reactive {post inflammatory pigmentation (9,32.1%)}, keratinocytic(10,35.7%) and others(8,28.6%). In the vascular subcategory of non-melanocytic lesions there was 1 case of cavernous hemangioma. Reactive subcategory of non-melanocytic lesions included cases of Prurigo Nodularis(2), Erythema Dyschronicus Perstans(1), Lichen Planus(2), Dermatofibroma(1), Chronic Non Specific Dermatitis(2) and Spongiotic Dermatitis(1). Keratinocytic lesions included 8 cases of

seborrheic keratosis and 2 cases of beckers melanosis. Other cases were morphea(1), Xeroderma Pigmentosa(1), Keratosis Pilaris(2), Idiopathic Eruptive Macular Pigmentation(1), Xanthoma(1) and Wart(2). In the study done by Parvathi M et al[11] spectrum of non melanocytic lesions(45.5%) included pigmented seborrheic keratosis(11.4%), pigmented basal cell carcinoma(13.7%), pigmented actinic keratosis(2.3%) and 18% cases of naevus sebaceous.

Jayker SS et al[16] study on hyperpigmented lesions of skin depicted that classical lichen planus was most common constituting 12.94% of total cases followed by lichen planus pigmentosus (7.05%).

CONCLUSION

Pigmented cutaneous lesions comprise of broadly melanocytic and non melanocytic lesions. Most common presented pigmented lesion was benign melanocytic nevi and most common non melanocytic lesion was seborrheic keratosis. Both categories of lesions had predominance of females. Biopsy with histopathological diagnosis is necessary for a conclusive diagnosis and definite treatment of patients with pigmented skin lesions. It becomes mandatory to go for histopathological examination of a pigmented skin lesion as it can be neoplastic. Histopathology plays a vital role in subtyping and grading of tumors and helps in confirming diagnosis in cases having atypical or overlapping clinical features.

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