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Hyperpigmented lesions of skin and oral mucosa: a clinical and histopathological correlation

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Abstract: Background : *Pigmented lesions are stigmatic as they will catch the attention of the patient and the clinician likewise. Pigmented lesions can either present as hyperpigmented or hypopigmented lesions and they can also be either melanocytic or nonmelanocytic in origin. Hyperpigmented lesions are one of the most common presentations in a dermatology outpatient clinic. India, being a tropical country, exposure to sunlight and likewise UV radiation may result in development of hyperpigmented lesions. Hyperpigmented lesions can be classified as inflammatory, hamartomatous, benign and malignant. With the increasing age the risk for development of malignant lesions like malignant melanoma and basal cell carcinoma increases, where the presentation is usually as a hyperpigmented lesion over the exposed areas. Though hyperpigmented lesions can be identified and classified clinically by a dermatologist, histopathological evaluation is of utmost importance not only for confirming and classifying but for further evaluation of these lesions along with their treatment and clinical outcome..*

Keywords: *Basal cell carcinoma, Hyperpigmentation, lichen planus, Melanoma*

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I. Introduction

Pigmented lesions are stigmatic as they will catch the attention of the patient and the clinician likewise. Hyperpigmented lesions are one of the most common presentations in a dermatology outpatient clinic. A number of pigmented lesions are difficult to classify and raise the possibility of a melanoma diagnosis. Rarely leprosy may also present as a hyperpigmented lesion[1].Care should be exercised to exclude non-melanocytic lesions, and benign melanocytic entities, both of which can mimic melanoma histologically[2]. Nevi and other benign pigmented lesions, except for their cosmetic significance, are important as simulants of melanoma and as potential precursors of melanoma[3].

A number of previous studies have indeed demonstrated the benefit of integrating clinical with pathologic information, not only in the field of inflammatory skin disease but also in the context of skin tumors[4]. Dermoscopy enables clinicians to observe global and local structures very precisely and thus provides the additional criteria for the clinical diagnosis of pigmented skin lesion[5].

In fact, even though it has been demonstrated that some skin diseases may display "specific" dermoscopic criteria, there are others featuring just "nonspecific" findings, which may be considered useful only if coupled with proper and accurate clinical and anamnestic information[6]. However due to variability in clinical presentation and subjectivity of usage of modern techniques like Dermoscopy; Histopathology still stands as gold standard for the diagnosis of pigmented skin lesions aided with a proper clinical evaluation.

II. Aims and Objectives

a) To study and classify the spectrum of hyperpigmented skin and mucosal lesions.
b) To study the role of histopathology in the diagnosis of these lesions.
c) To study the age, sex distribution and clinicohistopathological correlation of these lesions.

III. Materials and Methods

The present study was a prospective study done in the department of pathology, Rangaraya Medical College, Kakinada, for a period of 1 year from June 2015 to June 2016. A total of 60 cases presented as

hyperpigmented lesions were evaluated. Relevant clinical histories along with investigative details were collected.

The present study included inflammatory, benign, malignant melanocytic and nonmelanocytic lesions. A written consent from the patient was taken before taking biopsy. The preferred biopsy was a 5mm punch biopsy for smaller lesions with inclusion of all the layers of skin including the sub cutis, larger lesions were received as an excision biopsy specimen.

Routine processing of biopsies was done and relevant sections were taken. Sections were stained with routine hematoxylin and eosin stain in addition to special stains as required. The obtained slides were evaluated and classified into relevant categories based on its histomorphology.

The results and observations were organized and interpreted based on age, sex, clinical and histopathology findings.

IV. Results

The total numbers of cases included in the study were 60 cases. Majority of the lesions were from skin and only 2 cases were from mucous membranes one involving the retromolar trigone and the other from the inner aspect of the lower lip, where the 1st one was diagnosed as a squamous cell carcinoma while the other was diagnosed as – mucosal lichen planus. Hyperpigmented papule/plaque is the most common clinical presentation.

The age distribution in the present study is from 5 to 75 years , where it was a dermatofibroma in a 5 year female child and it was a basal cell carcinoma in the 75 year old female. Sixth decade was the most common age group with a total of 13 cases of which 5 were malignant lesions. Basal cell carcinoma was most prevalent in 6th decade where as malignant melanoma was more common in the 5th decade.

Table 1: Age-wise distribution of the lesions

Age group	No. of cases (n=60)
0 - 10	2
11 -20	7
21 –30	12
31 - 40	8
41 - 50	11
51 - 60	13
61 - 70	5
71 - 80	2

Male to female ratio is 1: 1.14 with inflammatory hyperpigmented lesions more common in men, hypertrophic lichen planus being the most common entity in them. In the neoplastic category malignant melanoma was only seen in men. The total numbers of nonmelanocytic lesions constitute 93.33% where as the melanocytic lesions constitute only 6.67%.In the female population, morphea was the most common inflammatory lesion where as basal cell carcinoma is the most common neoplasia not only in females but also in males.

Table 2: Sex-wise distribution of nonmelanocytic lesions

Category	Male	Female	Total
Inflammatory	20	20	40
Benign	2	6	8
Malignant	3	5	8
Total	**25**	**31**	**56**

Of the total 60 cases, inflammatory lesions constitute 66.66% and the most common entity being lichen planus and its variants (20%); followed by morphea, ashy dermatosis and discoid lupus erythematosus constituting 7.5% each and the remaining 33.33% are neoplasm which include both benign and malignant entities. In the nonmelanocytic category, inflammatory lesions predominate over neoplastic lesions constituting about 71.5%.

Table 3: Sex-wise distribution of melanocytic lesions

Category	Male	Female	Total
Benign	1	0	1
Malignant	3	0	3
Total	**4**	**0**	**4**

Of the total neoplastic lesions, 80% are nonmelanocytic and melanocytic lesions constituted only 20%. In the nonmelanocytic neoplastic category, basal carcinoma is the most common entity(44%) followed by seborrhic keratosis (25%) where as malignant melanoma constitute 75% of the cases in melanocytic neoplastic category , lentigines being the only benign neoplastic melanocytic lesion.

Table 4: Distribution of non-melanocytic inflammatory lesions (n=40)

Histological diagnosis	No. of cases(M+F)	Percentage	Histological diagnosis	No. of cases(M+F)	Percentage
Bullous fixed drug eruption	1(0+1)	1.66 %	Lichen planus (classic)	1(0+1)	1.66 %
Erythema annulare centrifugum	1(1+0)	1.66 %	Ashy dermatosis	3(0+2)	4.98 %
Hypertrophic lichen planus	4(3+1)	6.64 %	Pityriasis rubra pilaris	1(1+0)	1.66 %
Chronic spongiotic dermatitis	2(2+0)	3.32 %	Psoriasis	2(0+2)	3.32 %
Morphea	3(0+3)	4.98 %	Postinflammatory hyperpigmentation	2(1+1)	3.32 %
Acanthosis nigricans	1(1+0)	1.66 %	Lichenoid drug eruption	1(0+1)	1.66 %
Discoid lupus erythematosus	3(2+1)	4.98 %	Allergic contact dermatitis	1(1+0)	1.66 %
Pityriasis rosea	1(1+0)	1.66 %	Mucosal lichen planus	1(1+0)	1.66 %
Erythema nodosum	1(0+1)	1.66 %	Lupus vulgaris	1(1+0)	1.66 %
Pemphigus vulgaris	1(0+1)	1.66 %	Stasis dermatosis	1(0+1)	1.66 %
Prurigo simplex	1(1+0)	1.66 %	Seborrheic dermatitis	1(1+0)	1.66 %
Angiokeratoma circumscriptum	1(0+1)	1.66 %	Atopic dermatitis	1(1+0)	1.66 %
Prurigo nodularis	1(0+1)	1.66 %	Lichen planus actinicus	1(0+1)	1.66 %
Bullous lichen planus	1(1+0)	1.66 %	Actinic keratosis verruciformis	1(1+0)	1.66 %

Table 5: Distribution of nonmelanocytic benign lesions

Histological diagnosis	No. of cases(M+F)	Percentage
Seborheic keratosis	4(1+3)	4.98 %
Trichofolliculoma	1(1+0)	1.66 %
Squamous papilloma	1(0+1)	1.66 %
Melanoacanthoma	1(0+1)	1.66 %
Dermatofibroma	1(0+1)	1.66 %
Total	**8**	**13.28 %**

Table 6: Distribution of nonmelanocytic malignant lesions

Histological diagnosis	No. of cases(M+F)	Percentage
Basal cell carcinoma	7(3+4)	11.62 %
Squamous cell carcinoma	1(0+1)	1.66 %
Total	**8**	**13.28 %**

Histopathology complimented the clinical diagnosis in 81 percent cases with discordance in 19% cases. The discordance was cleared up by gathering additional clinical information and investigative data along with identifying the important histomorphological features that were not in correlation with the clinical diagnosis by consensus of three pathologists and the referring clinician.

Table 5: Distribution of melanocytic lesions

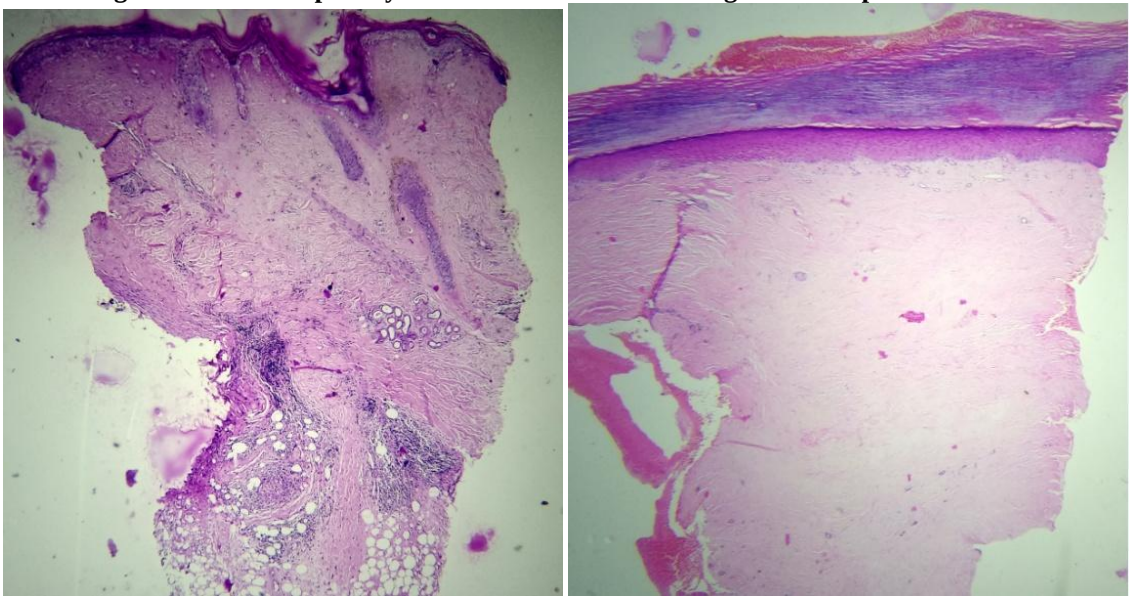
Histological diagnosis	No. of cases(M+F)	Percentage
Benign		
- Lentigines	1(1+0)	1.66 %
Malignant		
- Malignant melanoma	3(3+0)	4.98 %
Total	**4**	**6.64 %**

V. Discussion

A Hyperpigmented lesion can either be either melanocytic or nonmelanocytic in origin. They can also be either inflammatory, hamartomatous ,benign or malignant lesions. Even though a good clinical examination helps in diagnosing most of the hyperpigmented lesions, at times variations in clinical presentation and variability in Dermoscopy findings, at times makes a dermatologist to over / under diagnose these entities. In such conditions, sending a simple biopsy for histopathological examination along with clinical findings not only helps in establishing a correct diagnosis but also helps in identifying other dermatological entities with similar clinical presentations and other variants of known hyperpigmented lesions thus aiding in further management of these lesions.

In our study, a total number of 60 pigmented cutaneous and mucosal lesions were evaluated, which included nonmelanocytic inflammatory, benign and malignant lesions constituting 93.3% as well as melanocytic benign and malignant lesions constituting 6.6%.

Figure 1: Discoid lupus erythematosus 40X H&E **Figure 2: Morphea 40X H&E**



In the present study, maximum numbers of cases were seen in the age group of 51 – 60 years and the second most common group being 21 – 30 years, where as it was 61 – 80 years in Suvarnakar S V et al [(3)] study and 21 to 30 years in Shushan S J et al [(7)].

In our study, male to female ratio is 1:1.14, which is similar to study by Shushan S J et al [(8)]with male to female ratio of 1:1.2 and also correlated with krishma Goyal et al[(11)] ,while Cresta J et al [(10)] has slight male preponderance with Male: Female ratio of 1.16:1

In the present study, in the inflammatory category, lichen planus and its' variants are the most common type, constituting 20% of the total cases, which is correlating with Shushan S J et al. [(7)]where as in krishma Goyal et al[(11)] study the most common entity was post inflammatory hyperpigmentation.

Figure 3: Lentigines 40X H&E

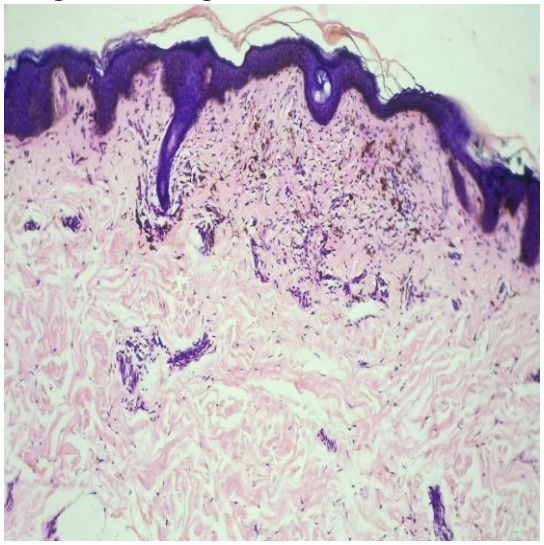
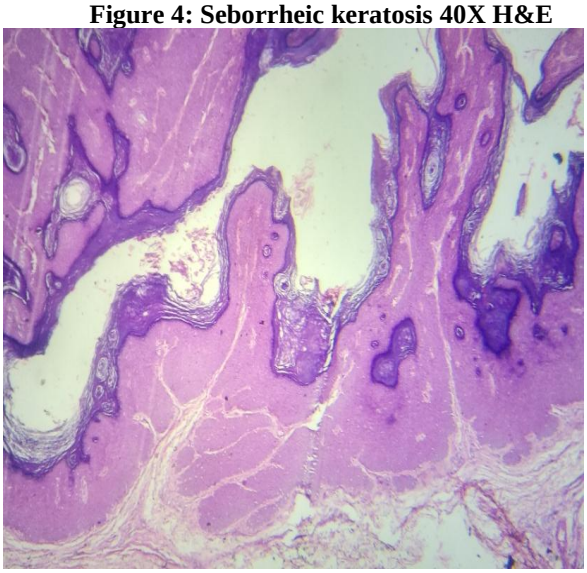


Figure 4: Seborrheic keratosis 40X H&E



In the pigmented neoplastic category, nonmelanocytic neoplasms constituted 80% with basal cell carcinoma being the most common entity with an incidence of 17.5%. Suvarnakar S V et al [(3)] had an incidence of 27.2%. In our study, malignant melanoma constituted 5% of the total cases, which is similar to the study of Parvathi M et al[(9)], where the incidence is 4.6%. However, in their study, all melanoma cases have occurred in females, where as in our study, all the cases were in the males.

Figure 5: Basal cell Carcinoma 40X H&E

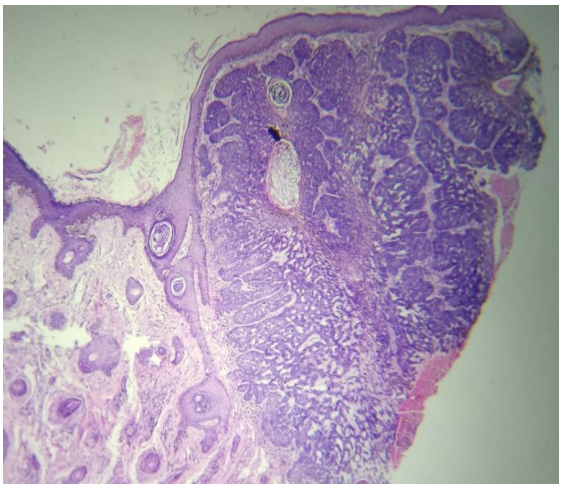
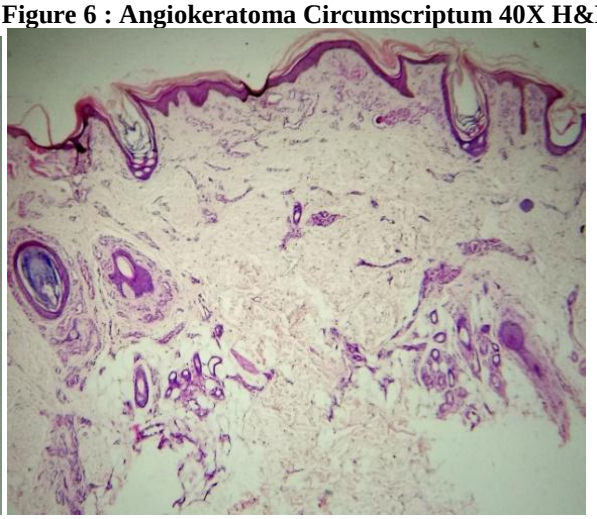


Figure 6 : Angiokeratoma Circumscriptum 40X H&E



Our study showed concordance of clinical and histopathological diagnosis in 81% of cases, which is correlating with the study of Shushan S J et al [(7),] which is 78.9%. Mruthyunjayappa et al et al [(8)] showed a concordance of 95%. A higher percentage of clinical and histological concordance is mainly attributed to thorough clinical evaluation and multiple differential diagnoses.

VI. Conclusion

Hyperpigmented lesions of skin and mucous membranes range from inflammatory to malignant entities, recognizing these lesions at an earliest stage not only helps in establishing the diagnosis but also plays an important role in the prognosis especially in cases of malignant melanoma. Lichen planus and its variants are the most common pigmented lesions in our study and the next most common lesion is basal cell carcinoma both of which present as hyperpigmented lesions, however are nonmelanocytic in origin. The differential diagnosis of these pigmentation lesions can be narrowed down by careful clinical examination and also by focusing on subtle histomorphological features of these entities. Thus histopathology helps in differentiating melanocytic from nonmelanocytic and benign from malignant lesions, but also aids in establishing diagnosis in cases with unusual presentations.

References

[1]. Arakkal GKiran, Vani S, Kasetty HKumar, Varala S. Leprosy: An unusual presentation. International Journal of Medicine and Public Health. 2015;5(1):118-120

[2]. Edwards SL, Blessing K. Problematic pigmented lesions: approach to diagnosis. J Clin Pathol. 2000;53(6):409–418. doi:10.1136/jcp.53.6.409

[3]. Dr. Suvernakar. S. V , Dr. Shweta. R. Harwani , Dr. Deshpande. S. A Clinicopathological Study of Pigmented Skin Lesions IOSR Journal of Dental and Medical Sciences ,2014; 13 (5),pages 70-73

[4]. Ferrara G, Argenziano G, Soyer HP, Corona R, Sera F, Brunetti B, et al. Dermatoscopic and histopathologic diagnosis of equivocal melanocytic skin lesions: an interdisciplinary study on 107 cases. Cancer 2002;95:1094–100

[5]. Joanna Jaworek-Korjakowska and Paweł Kłeczek, "Automatic Classification of Specific Melanocytic Lesions Using Artificial Intelligence," BioMed Research International, vol. 2016, Article ID 8934242, 17 pages, 2016.

[6]. Errichetti, Enzo, and Giuseppe Stinco. "Dermoscopy in General Dermatology: A Practical Overview." Dermatology and therapy vol. 6,4 (2016): 471-507. doi:10.1007/s13555-016-0141-6

[7]. Jaykar SS , Anantharaj J,Surhonne SP,et al.Histopathological spectrum of hyperpigmented lesions of skin.J.Evolution Med.Dent.Sci.2016;5(34):1913-1916,DOI:10.14260/jemds/2016/453

[8]. Mruthyunjayappa S, Mahantappa H, Gopal M G, Venugopal SB. A study of spectrum of histopathological features in patients presenting with hyperpigmented skin lesions. Arch Med Health Sci 2016;4:189-95

[9]. M. Parvathi, Chowdari B, lekha GD, Kumar SS, Bhagya Lakshmi A. A clinico-pathological study of pigmented cutaneous lesions: a one-year prospective study in a tertiary care hospital. Int J Res Med Sci 2017;5:5316-21

[10]. Julian C, Karuna R. Pigmented lesions of nonmelanocytic origin a pathological perspective. Ind J Dermatol. 2002;47(2):84-7.

[11]. Krisham Goyal,K S Chahal, SK Malhotra et al To study the clincopathological correlation of common pigment disorders of skin, IJSR , Volume 7 Issue 4, April 2018 p 1448-1452 doi: 10.21275/art20181911

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