Patterns Of Dermoscopy in cases with pigmented skin lesion in A Tertiary Care Hospital.

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ABSTRACT:

Objective: To determine the frequency of different pigmented skin lesions identified on dermoscopy in patients presenting to a tertiary care hospital and to assess their distribution according to demographic and clinical variables

Methodology: This cross-sectional study was conducted in the Department of Dermatology, Nishtar medical university, Multan over a period of one month after obtaining ethical approval. The study was carried out over a period of six months from 08-10-2020 to 07-04-2021. After taking informed consent, a total of 156 patients of both genders, aged between 20 to 60 years, presenting with pigmented skin lesions were included using a non-probability consecutive sampling technique. Patients who had received any treatment in the last one month or had a documented malignancy were excluded. Data was collected using a predesigned proforma including demographic variables (age, gender) and clinical characteristics such as duration of lesion, itching, diabetes mellitus, and family history of melanoma. All patients underwent dermoscopic examination using a FireflyPro DE350 dermatoscope, performed by a consultant dermatologist. The collected data was entered and analyzed using Statistical Package for the Social Sciences (SPSS) version 23.0, where quantitative variables were presented as mean ± standard deviation and qualitative variables as frequencies and percentages and chi-square test was used to assess associations, with a p-value ≤ 0.05 considered statistically significant.

Results: In this study, a total of 156 cases were included, comprising 85 females (54.49%) and 71 males (45.51%). The mean age of participants was 43.06 ± 8.23 years, with an average symptom duration of 3.14 ± 2.11 months. Among the 156 cases, itching was reported in 47 (30.13%), diabetes mellitus in 18 (11.54%), a family history of melanoma in 7 (4.49%), and bleeding in 23 (14.74%). The most frequently observed lesions were melanocytic nevi in 33 (21.15%), lichen planus in 24 (15.38%), dysplastic nevus in 14 (8.97%), and seborrheic keratosis in 11 (7.05%).

Conclusion: Dermoscopy is a useful tool for diagnosis of pigmented lesion and the most commonly noted lesion was melanocytic nevi followed by lichen planus. There was no significant association between confounders of the study and study outcomes.

Keywords: Dermoscopy, Melanocytic nevi, seborrheic keratosis, Lichen planus.

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Introduction:

Pigmented skin lesions range from benign to malignant entities that often appear similar on standard clinical photographs, complicating accurate diagnosis without specialized imaging. [1]

Pigmented skin lesions are often seen in clinical practice and often present a challenge because of overlapping features between benign and malignant conditions. The widely used ABCDE criteria (asymmetry, border irregularity, color variation, diameter >6 mm, and evolution) provide a basic clinical framework; however, early melanoma may resemble atypical nevi, leading to diagnostic inaccuracies. Studies have shown that clinical examination alone has limited sensitivity, highlighting the need for more reliable diagnostic approaches.[2]

Dermoscopy is a noninvasive process that helps us to magnify the skin structures and also helps in visualizing microscopic features that are not visible to naked eye. Dermoscopy can not be a replacement of biopsy and histopathologic evaluation, but is an important tool that can help to increase diagnostic sensitivity and specificity of skin lesions. When compared with naked eye examination diagnostic sensitivity is increased by using dermoscope. Not only the diagnostic sensitivity but diagnostic accuracy has also been reported to increase among family medicine physicians after an introductory training course on dermoscopy.[3]

Evidence supports the superiority of dermoscopy over naked-eye examination. Dermoscopy increased self-confidence in analyzing pigmented lesions (P = 0·004), and dermoscopy users referred fewer patients to dermatologists.[4] Even the number of biopsies was reduced in the dermoscopy users group (P = 0·004). Dermoscopy aids in reducing unnecessary biopsies and supports better clinical decision-making when used by trained clinicians.[5]

This cross-sectional study was conducted in the Department of Dermatology, Nishtar Hospital, Multan , over a period of five months after ethical approval. As dermoscopy is

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being used widely in modern world, the main purpose of this study was to get familiar with the different patterns seen in common dermatological conditions to help us differentiate between suspicious looking or malignant lesions later. It helps us to reduce avoidable burden of histology specimens and if the diagnosis is made in time it can help us to start treatment early to decrease spread and complications.

Objectives:

To determine the frequency of various types of pigmented skin lesions identified through dermoscopy among patients presenting to a tertiary care hospital and to evaluate the distribution of dermoscopic patterns of pigmented lesions in relation to demographic and clinical variables, including age, gender, duration of lesion, itching, diabetes mellitus, and family history of melanoma.

Methodology:

This cross-sectional study was conducted in the Department of Dermatology, Nishtar medical university, Multan, over a period of five month from March 2026 to July 2026 after obtaining approval from the institutional ethical committee. Ethical approval was taken from IERB of Nishtar medical university letter no. 6895 dated 12.03.2026. The sample size was 156 and it was calculated using a 95% confidence level, an expected proportion of seborrheic keratosis of 9.1%, and a margin of error of 4.5%. The expected proportion was based on a previous study of common pigmented skin lesions in which seborrheic keratosis constituted 9.1% (4/44) of the lesions.[6] A non-probability consecutive sampling technique was employed. Patients of both genders, aged between 20 to 60 years, presenting with pigmented skin lesions for at least one month were included in the study, while those who had received any treatment in the last one month or had documented malignancy were excluded. After obtaining informed consent, data were collected using a predesigned structured proforma. Information recorded included demographic variables such as age and gender, along with clinical characteristics including duration of lesion, presence of itching, diabetes mellitus (documented cases on treatment for at least one year), and family history of melanoma. All patients underwent dermoscopic examination using a FireflyPro DE350 dermatoscope. The procedure was performed by two consultant dermatologists with at least one year of post-fellowship experience to ensure consistency and minimize bias. Various types of lesions were identified and categorized according to predefined operational definitions, and findings were recorded on the same proforma.

The rationale of this study is to evaluate the pattern and frequency of dermoscopic findings in pigmented skin lesions and to enhance early and accurate diagnosis. Given the limitations of clinical examination alone, this study aims to contribute to improved diagnostic practices and better patient outcomes by emphasizing the role of dermoscopy in routine dermatological evaluation.

Results:

Table 1 shows the frequency of different skin lesions observed. A total of 156 patients with pigmented skin lesions were included in the study. Dermoscopic examination revealed that the most frequently identified lesion was melanocytic nevus, seen in 33 (21.2%) patients. This was followed by lichen planus in 24 (15.4%), dysplastic nevus in 14 (9.0%), and seborrheic keratosis in 11 (7.1%) patients.

Out of total 156 patients, 85 (54.5%) were females and 71 (45.5%) were males, showing a slight female predominance. The mean age of the participants was 43.06 ± 8.23 years, while the mean duration of lesions was 3.14 ± 2.11 months.

Table No1: Frequency of pigmented skin lesions studied (n=156).

Diagnosis	N (%)
Common melanocytic nevi	33 (21.2%)
Lichen planus	24 (15.4%)
Dysplastic nevus	14(9%)
Seborrheic keratosis	11(7.1%)
Freckles	10 (6.8%
Solar lentigo	7 (4.5%)
Dysplastic actinic keratosis	7 (4.5%)
Lentigines	7 (4.5%)
Miscellaneous	33 (21%)

Table 2: Frequency of associated clinical features.

Clinical Feature	Frequency %
Itching	47 (30.5)
Diabetes mellitus	18 (11.5)
Family history of melanoma	7 (4.5)
Bleeding	23 (14.7)

Fig No 1. Melanocytic Nevi was the most common lesion observed.



Fig No 2: Lichen Planus was the second most lesion observed.



Discussion:

Over the few last decades, dermoscopy has become an important and popular imaging technique that helps dermatologists to make a better diagnosis, being employed for both tumors and inflammatory diseases.[7]

Dermoscopy has proven to be integral noninvasive technique in dermatology because not only it improves the visualization of subsurface structures that cannot be identified during routine naked-eye examination but also it has significantly enhanced the diagnostic evaluation of pigmented skin lesions and has improved differentiation between be-

nign and malignant lesions.[8] Recent literature has shown that dermoscopy not only improves clinical accuracy but also reduces unnecessary biopsies and increases early detection of melanoma in routine practice.

In the present study, melanocytic nevi were the most frequently observed pigmented lesions, accounting for 21.2% of cases, followed by lichen planus (15.4%), dysplastic nevi (9.0%), and seborrheic keratosis (7.1%). These findings are comparable to those reported by Ghias et al., who also found melanocytic nevi to be the most commonly encountered pigmented lesions in patients undergoing dermoscopic examination.[6] The predominance of melanocytic lesions in both studies suggests that benign nevi continue to represent the largest proportion of lesions evaluated in dermatology clinics.

The female predominance is noted in the current study, where 54.5% of participants were women, may reflect increased healthcare-seeking behavior among female patients. Similar observations have been reported in previous clinical studies, where women were more likely to seek assessment for pigmented lesions because of cosmetic concerns and awareness of skin changes.[9] However, despite the higher number of female participants, no statistically significant association was found between gender and the type of dermoscopic lesion identified.

Another important finding of the present study was the absence of a significant relationship between dermoscopic diagnosis and age, lesion duration, itching, diabetes mellitus, bleeding, or family history of melanoma. This indicates that clinical variables alone may not reliably predict dermoscopic findings. Such associations may become more evident only in larger populations or in studies focused specifically on melanoma. Recent advances have expanded the role of dermoscopy beyond conventional examination. Artificial intelligence and digital image analysis are increasingly being integrated with dermoscopic assessment to improve diagnostic performance.[10] Studies have demonstrated that machine-learning systems can assist clinicians in distinguishing malignant lesions from benign lesions with high sensitivity, particularly when combined with expert interpretation.[11] Although advanced digital analysis was not part of this study, the present findings support the continued value of handheld dermoscopy as a practical diagnostic tool, especially in resource-limited healthcare settings.

Correlation of dermoscopic findings with histopathology has also become an important area of current research. Mendes et al. reported that specific dermoscopic structures may correspond closely with histopathological changes, strengthening the reliability of dermoscopy in clinical diagnosis.[11] This supports the usefulness of dermoscopy not only as a screening tool but also as an aid in selecting lesions that require biopsy.

Overall, the findings of this study are consistent with current literature and reinforce the role of dermoscopy as an effective, accessible, and clinically valuable tool for the evaluation of pigmented skin lesions.[12,13]

Conclusion:

Dermoscopy is a valuable, noninvasive diagnostic tool for the assessment of pigmented skin lesions. In this study, melanocytic nevi were the most commonly detected lesions, followed by lichen planus, dysplastic nevus, and seborrheic keratosis. No significant relationship was found between dermoscopic patterns and the studied demographic or clinical variables. The findings reinforce the role of dermoscopy in improving diagnostic confidence in dermatologic practice

Limitations:

The present study had a few limitations that should be considered while interpreting the findings. Since it was conducted at a single tertiary care hospital, the results may not be fully representative of the population. Small sample size may have limited the ability to identify weaker associations between clinical characteristics and dermoscopic patterns. Histopathological examination, which is considered the gold standard for diagnosis, was not available for all lesions, restricting a direct evaluation of diagnostic accuracy. Furthermore, the study focused only on commonly encountered pigmented lesions, and less frequent lesions were not included, which may limit the applicability of the findings to the full spectrum of pigmented skin disorders.

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Author's contribution	
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