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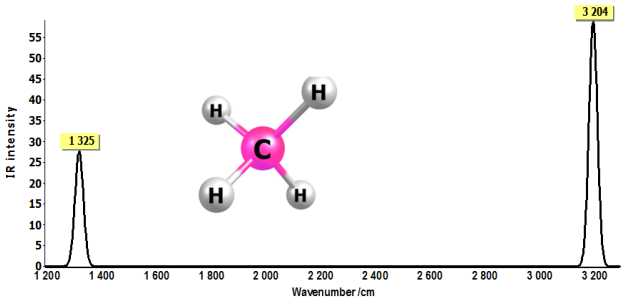

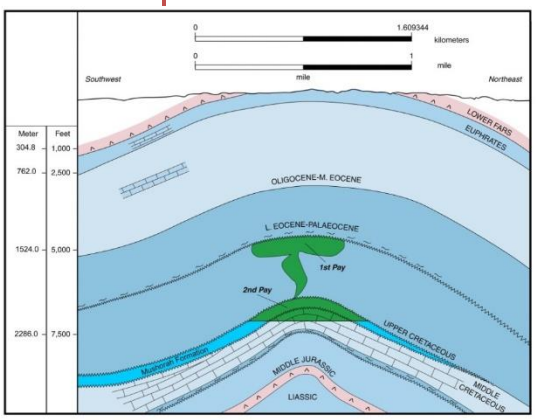

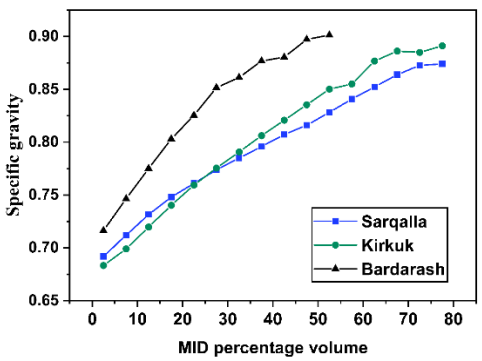

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Dermoscopic Features of Benign Pigmented Skin Lesions on Face

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Abstract

Background: Benign pigmented skin lesions (BPSL) on the face, including melanocytic nevi, lentigines, freckles, lichen planus pigmentosus, pigmented seborrheic keratosis, pigmented actinic keratosis, lichenoid keratosis, hypertrophic lichen planus, and melasma. Dermoscopy is used to aid the diagnosis and to help exclude malignant skin lesions. **Aims:** To recognize benign features of pigmented lesions using dermoscopy as a noninvasive procedure, reduce the rate of biopsy as invasive as much as possible, and be more familiar with benign dermoscopic features of benign pigmented lesions and differentiate them from pigmented malignant lesions. **Methods:** This observational cross-sectional study was done in Sulaimaniyah Dermatology Teaching Center from 1st July 2021 to 30th May 2022. One-hundred fifty patients with benign face pigmented lesions were enrolled. Clinical and dermoscopic assessments of each lesion were performed using Molescope TM II. **Results:** Melanocytic lesions were the most prevalent type of benign pigmented lesions on the face in 97 patients (64%), and the most frequent dermoscopic features include homogenous brown pigmentation, typical pigmented network, and regular distributed dots and globules. Hyperkeratotic lesions were the second most common benign and premalignant lesions in 40 patients (27.3%), and among them, pigmented seborrhiek keratosis was the most prevalent lesions in 20 patients (13.3%), while the most abundant dermoscopic findings were homogenous brown pigmentation in 100% (20 patients), followed by 95% (19 patients) for each milia like-cyst, comedo like opening, and mouth border. Inflammatory lesions were the least prevalent pigmented lesions in 13 patients (8.7%), and melasma was the most common inflammatory lesion in 11 patients (7.3%). At the same time, most observed dermoscopic findings were homogenous brown pigmentation, pseudo network, dots/globules, and telangiectasia in 100% (11 patients). **Conclusion:** Dermoscopy was the definite tool for diagnosing BPSL, locating on the face and differentiating them from pigmented malignant lesions.

Introduction

Benign pigmented lesions, including melanocytic, hyperkeratotic, and inflammatory lesions, are common disorders diagnosed by dermoscopy (1). Dermoscopy plays an essential role in the management of pigmented skin lesions (PSL) and helps reduce the number of benign PSL recommended for excision of histopathologic investigation (2). Dermoscopy is helpful, too, in clinical diagnosis as it is essential for *in vivo* observation of

pigmented skin lesions that allow for more excellent visualization of surface and subsurface components as well as increased diagnostic accuracy (3).

Benign pigmented skin lesions are classified into melanocytic, hyperkeratotic, and inflammatory (4). Regarding the melanocytic lesions, melanocytic nevi are classified into congenital melanocytic nevi and acquired nevi. Nevi that develop in utero are known as congenital melanocytic nevi (CMN). On the other hand, acquired melanocytic nevi, including compound nevi, junctional nevi, atypical nevi, spitz nevi, blue nevi, nevus spilus, and halo nevi tend to arise after birth, and their development appears to be influenced by environmental variables. Dermoscopic features in all types of nevi include all or any of these specific melanocytic features, pigment network (typical or atypical), aggregated globules, homogenous pigmentation, branched streaks (e.g., spitz nevus), homogenous blue pigmentation (blue nevus), and blotch. If these structures or features are present, the lesion is considered of melanocytic origin (5).

Regarding lentigines and freckles, solar lentigo is a pigment alteration in the skin caused by ultraviolet (UV) light exposure in which UV radiation can trigger localized melanocyte growth and, as a result, a buildup of melanin in skin cells (6,7), while freckles are highly prevalent. Sharply demarcated, light brown–ginger macules, usually <5 mm in diameter, are most commonly found in red-haired or blond people (8). Lentigines and freckles share the same dermoscopic features, including mouth border, homogenous brown pigmentation, jelly sign, fingerprint-like structure, pseudo network, and ink-spot sign (9).

Lichen planus pigmentosus (LPP) is a macular type of lichen planus. It largely affects the dark-skinned population. Clinically, it is characterized by slate-gray-to-brown macules in a diffuse, blotchy, reticular, or perifollicular pattern affecting the sun-exposed and flexural sites. Dermoscopic features of lichen planus pigmentosus are pseudo network, dots, globules, blotches, telangiectasia, and awls signs (10).

Regarding hyperkeratotic lesions, seborrheic keratosis (SK) is the most prevalent benign tumor of the skin epidermis, and Caucasians and the elderly are more likely to develop it. The lesions are typically painless, but they can be itchy. Dermoscopic features of SK include milia-like cysts, comedo-like openings, fissures and ridges (gyri and sulci), network-like structures, cerebriform pattern, fat-fingers, mouth borders, and typical hairpin blood vessels with a white halo (11).

Pigmented actinic keratosis (AK) is a type of epidermal dysplasia that affects people with light skin and appears in sun-exposed areas. The pigmented AK dermoscopic features include rhomboidal pattern (pseudo network), annular granular pattern, and jelly sign, star-like appearance at the lesion's periphery, motheaten borders, surface scale, and rosette sign (12). Lichen planus-like keratosis (LPLK) is a regressing solar lentigo or seborrheic keratosis. Clinically, it appears as a solitary, gray-to-brown papule or plaque. Dermoscopy of LPLK shows dots, globules, pseudo networks, and fingerprint-like structures (13, 14).

Regarding inflammatory lesions, melasma is a hyperpigmentation illness that affects people all over the world and has a substantial impact on their quality of life. It primarily affects women with darker skin types who live in places with high UV radiation exposure. Melasma patients have blotchy regions of hyper pigmented macules on their faces. Dermoscopy of the melasma lesion includes diffuse light-to-dark brown pseudo reticular network, homogenous brown pigmentation, multiple brown dots, granules and globules, arcuate annular structures, and increased vascularity and telangiectasia (15). Hypertrophic lichen planus (HLP) is the second most frequent lichen planus cutaneous form. Thick hyperkeratotic plaques are found mainly on the shins or dorsal aspect of the foot and may be coated by a fine adhering scale that is very pruritic (16). Thus, this study aimed to use dermoscopy as a noninvasive device to recognize benign features of pigmented lesions on the face skin at Sulaimaniyah, Iraq.

Materials and Methods

This is an observational cross-sectional study that took place in Sulaimaniyah Dermatology Teaching Center, Sulaimaniyah, Iraq, from 1st July 2021 to 30th May 2022. A convenient sampling of 150 patients with benign pigmented lesions was collected on the face.

Inclusion criteria

Patients with face benign pigmented skin lesions including nevi, solar lentigines, senile lentigines, freckles, lichen planus pigmentosus, seborrheic keratosis, pigmented actinic keratosis, lichen planus like keratosis, melasma and hypertrophic lichen planus were included in the study regardless of age and gender.

Exclusion criteria

Patients with benign pigmented lesions located in other areas besides the face, non-pigmented lesions on the face, pigmented malignant lesions on the face, mucosal pigmented lesions, and vascular lesions were excluded.

Patients' informed consent

Written informed consent from each patient was taken, and they were informed about the procedure.

Procedure

Patient's data, including age, gender, occupation, history of chronic disease, and chronic dermatological disorders, were taken. Also, a clinical examination of each lesion was done with the help of another two clinicians, including skin phenotype of patients, type, site, and number of lesions, symmetry in color, border regularity, diameter, and surface. Clinical photography was taken for any pigmented lesion on the face (using iPhone 7 phone camera) under good light conditions. The dermoscopic inspection was performed using Molescope TMII (a mobile attachment device that allows for high-resolution skin imaging at a magnification of around X10), which can be utilized without immersion oil due to a polarizing filter. The dermoscopy was immediately connected to an iPhone 7 without an adaptor. To avoid infection transfer, the lens was disinfected with an alcohol swab. Dermoscopic pictures were taken with the aid of a camera device under good light conditions, and dermoscopic features were observed.

Statistical analysis

The statistical analysis was performed using Statistical Package for the Social Sciences program, version 24.0 (IBM SPSS, USA). Data presented in tabular forms show the frequency and relative frequency distribution of different variables among different patient groups. The Chi-square test was used to compare the categorical data between groups of patients with respect to other variables. The ANOVA test was used to determine the statistical significance of the difference in mean age between the three patient groups. The significance threshold for statistical tests was set at a P value of 0.05.

Ethical approval

The protocol of this study is approved by the Ethical Committee of the College of Medicine, the University of Sulaimani, with No. 212/17/10/2021.

Results

This study included 150 patients with benign pigmented face lesions. Out of 150 patients, 55 (36.7%) were males, and 95 (63.3%) were females. Ninety-seven of the patients had melanocytic lesions (64%), 40 patients had hyperkeratotic lesions (27.3%), and 13 patients had inflammatory lesions (8.7%). Regarding melanocytic nevi, the most common type was compound nevi, which was 31.3% (46 patients), followed by junctional nevi, which accounted for 6.0% (9 patients), and the less common one was atypical nevi, blue nevi, CMN, spitz nevi, combined nevus, and halo nevus which were found in 8 patients (5.3%), 6 patients (4%), 5 patients (3.3%), 2 patients (1.3%), 1 patient (0.7%), and 1 patient (0.7%), respectively (Table 1).

Dermoscopic features of melanocytic nevi were homogenous brown pigmentation, pigment network, dots and globules, blotch, hypertrichosis, branched sreaks, and blue-white viel. Homogenous brown pigmentation was

positive in all of the nevi except in one case of compound nevus, showing homogenous gray pigmentation. All blue nevi showed homogenous blue pigmentation, and one case of atypical nevus showed multicolor. Typical pigment network was another dermoscopic feature of melanocytic nevi; all of them were typical except in dysplastic nevi, which was atypical in 5 patients (62.5%). At the same time, regular distributed dots and globules were positive features of melanocytic nevi. Still, all of the dysplastic nevi showed irregular distributed dots and globules, which was positive in 8 patients (100%) with DN. Centrally located hyperpigmented or hypopigmented blotch was another dermoscopic feature of melanocytic nevi; all of them were centrally located except it was eccentrically located in 4 patients (50%) of dysplastic nevi. Hypertrichosis was another feature of melanocytic nevi, which was positive in 3 patients (6.5%) of compound nevi, 2 (40%) of CMN, 1 (11.1%) of junctional nevus, 1 (12.5%) of dysplastic nevus, and 1 (16.7%) of blue nevus. The branched streak was a specific dermoscopic feature for spitz nevi which was seen in 2 patients (100%) of spitz nevi, and blue-white viel was a feature for DN, which was seen in 5 patients (62.5 %) of DN (Tables 1 and 2).

In summary, homogenous brown pigmentation, typical pigment network, regular distributed dots, and globules were the most common dermoscopic features in the compound, junctional, CMN, and halo nevi. While branched streak was a specific dermoscopic feature in spitz nevi, and homogenous blue pigmentation was a particular feature in blue nevi. On the other hand, atypical pigmented networks, irregular distributed dots and globules, eccentric hyperpigmented or hypopigmented blotch, and blue-white viel were the most common dermoscopic features for dysplastic nevi. They cannot be differentiated from melanoma without biopsy.

Table 1. Frequency of dermoscopic finding in melanocytic nevi.

Types of Melanocytic Lesions	**Dermoscopic Features**					
	Pigmented Network	**Frequency (%)**	**Dots And Globules**	**Frequency (%)**	**Blotch**	**Frequency (%)**
Compound nevus	None	22 (47.8)	None	9 (19.6)	None	28 (60.9)
			Regular	37(80.4)		
	Typical	24 (52.5)			Central	18 (39.1)
Junctional nevus	None	2 (22.2)	None	3(33.3)	None	4 (44.4)
	Typical	7(77.8)	Regular	6 (66.7)	Central	5 (55.6)
Dysplastic nevus	None Atypical	2 (25) 5 (62.5)	Regular	0 (0)	None	2 (25)
	Typical	1 (12.5)	Irregular	8 (100)	Central eccentric	2 (25) 4 (50)
Blue nevus	None	6 (100)	None	6 (100)	None	6 (20)
					Central	0 (80)
Congenital melano nevus	Typical	5 (100)	None Regular	2 (40) 3 (60)	Central None	4 (80) 1 (20)
Spitz nevus	None	2 (100)	None	2 (100)	None Central	1 (50) 1 (50)
Halo nevus	Typical	1 (100)	Regular	1 (100)	None	1 (100)
Nevus spilus	None	1 (100)	None	1 (100)	Central	1 (100)

Table 2. Frequency of dermoscopic findings in melanocytic nevi.

Type of Melanocytic Lesions	Dermoscopic Features	
	Hypertrichosis	**Frequency (%)**
Compound nevus	Yes	3 (6.5)
	No	43 (93.5)
	Yes	1 (11.1)
Junctional nevus	No	8 (88.9)
Dysplastic nevus	Yes	1 (12.5)
	No	7 (87.5)
Blue Nevous	Yes	1 (16.7)
	No	5 (83.3)
Cong melano nevus	Yes	2 (40)
	No	3 (60)
Spitz nevus	Yes	0 (0)
	No	2 (100)
Halo nevus	No	1 (100)
Nevus spilus	No	1 (100)

Other melanocytic lesions were solar lentigines, simple lentigines, freckles, lichen planus pigmentosus, and inkspot lentigo, which were analyzed by dermoscopy. The most common dermoscopic finding in solar lentigo was homogenous brown pigmentation, pseudo network, and motheaten borders, which were positive in 100% (11 of patients), and less common ones were a jelly sign, regular dots and globules, and fingerprint-like structure which were accounted for 54.5% (6 patients), 45.5% (5 patients), and 36.4% (4 patients), respectively. The most abundant dermoscopic findings in freckles were homogenous brown pigmentation, pseudo network, moth-eaten border, and jelly sign which were seen in %100 (2 patients). At the same time, fingerprint structure was a less common dermoscopic feature for freckles which was seen in 50% (1 case). In lichen planus pigmentosus, the most abundant dermoscopic features include homogenous brown pigmentation, dots, and globules, pseudo networks in 100% (2 cases). In contrast, less frequent dermoscopic findings were owl's eye sign, telangiectasia, and blotches in 50% (1 case). We had one case of ink spot lentigo with an ink spot sign on the dermoscopy.

In the present study, pigmented seborrhiek keratosis was the most prevalent hyperkeratotic lesion in 20 patients (13.3%), and the most frequent dermoscopic findings of SK include homogenous brown pigmentation, milia-like cyst, comedo-like opening, and motheaten border in 100% (20 patients), 95% (19 patients), 95% (19 patients), 95% (19 patients), respectively. Less common findings were fingerprint-like structure, fissure/ridges, and network-like structure in 30% (6 patients), 25% (5 patients), and 20% (4 patients), respectively (Table 3).

Table 3. Frequency of dermoscopic features of hyperkeratotic lesions.

Hyperkeratotic		**Seboric keratosis**	**Actinic keratosis**	**lchenoid keratosis**	**Total**
		Number, %			
Dermoscopic pigmentation	**Brown**	20 (100)	17 (100)	3 (100)	40 (100)
Milia like cyst	**Positive**	19 (95)	0 (0)	0 (0)	19 (46)
	Negative	1 (5)	17 (100)	3 (100)	21 (54)
Comedo like opening	**Positive**	19 (95)	0 (0)	0 (0)	19 (46)
	Negative	1 (5)	17 (100)	3 (100)	21 (54)
Fissure and ridges (Gyri and sulci)	**Positive**	5 (25)	0 (0)	0 (0)	5 (12)
	Negative	15 (75)	17 (100)	3 (100)	35 (88)

Network like structure	**Positive**	4 (20)	0 (0)	0 (0)	4 (10)
	Negative	16 (80)	17 (100)	3 (100)	36 (90)
Motheaten border	**Positive**	19 (95)	17 (100)	0 (0)	36 (88)
	Negative	1 (5)	0 (0)	3 (100)	4 (12)
Jelly sign	**Positive**	0 (0)	14 (82)	0 (0)	14 (34)
	Negative	20 (100)	3 (18)	3 (100)	26 (66)
Fingerprint like structure	**Positive**	6 (30)	0 (0)	2 (67)	8 (20)
	Negative	14 (70)	17 (100)	1 (33)	32 (80)
Pseudo-network	**Positive**	0 (0)	17 (100)	3 (100)	20 (49)
	Negative	20 (100)	0 (0)	0 (0)	20 (51)
Surface scale	**Positive**	0 (0)	15 (88)	0 (0)	15 (37)
	Negative	20 (100)	2 (12)	3 (100)	25 (63)
Hairpin blood vessel	**Positive**	1 (5)	0 (0)	0 (0)	1 (2)
	Negative	19 (95)	17 (100)	3 (100)	39 (98)
Annular granular pattern	**Positive** **Negative**	0 (0) 20 (100)	1 (5.9) 16 (94.1)	0 (0) 3 (100)	1 (2.5) 39 (97.5)
Rosette sign	**Positive**	0 (0)	9 (53)	0 (0)	9 (22)
	Negative	20 (100)	8 (47)	3 (100)	32 (78)
Dots and globules	**Not**	20 (100)	12 (71)	0 (0)	32 (78)
	Regular	0 (0)	5 (29)	3 (100)	9 (22)
Total		20 (100)	17 (100)	3 (100)	40 (100)

Actinic keratosis was the second most prevalent hyperkeratotic lesion, which accounted for 11.3% (17 patients). In contrast, the most common dermoscopic features of actinic keratosis were homogenous brown pigmentation, pseudo network, and moth-eaten border in 100% (17 patients). Then, less common features were surface scale, jelly sign, dots and globules, rossette sign, and annular granular pattern in 88% (15 patients), 82% (14 patients), 71% (12 patients), 53% (9 patients), and 5.9% (1 case), respectively. LPLK were the least frequent hyperkeratotic lesions, which accounted for 2% (3 patients). In this study, homogenous brown pigmentation, pseudo network, and dots and globules were the most common findings in 100% (3 patients), while the fingerprint-like structure was seen in 67% (2 patients) (Table 3).

Regarding inflammatory lesions, melasma was the most prevalent type of inflammatory lesion in 11 patients (7.3%). In our study, homogenous brown pigmentation, pseudo network, dots and globules, and telangiectasia were the most abundant findings in melasma in 100% (11 patients), and less common features include arcuate annular structure and blotch in 45.5% (5 patients) and 18.2% (2 patients), respectively. In hypertrophic lichen planus, dermoscopic findings include wichams striae, surface scale, dotted blood vessel, dots, and globules in 100% (2 patients) (Table 4).

Table 4. Dermoscopic finding in inflammatory lesions.

Dermoscopic Features	**Melasma**	**Lichen planus**
	Number, %	
DERMOSCOPIC PIGMENTATION		
Brown	11 (100)	0 (0.0)
More than one color	0 (0.0)	2 (100)
DOTS AND GLOBULES		
Regular	11 (100)	2 (100)

BLOTCH		
None	9 (81.8)	2 (100)
Central	2 (18.2)	
Pseudo network		
Positive	11 (100)	0 (0.0)
Negative	0 (0.0)	2 (100)
Wickham's striae		
Positive	0 (0.0)	2 (100)
Negative	11 (100)	0 (0.0)
SURFACE SCALE		
Positive	0 (0.0)	2 (100)
Negative	11 (100)	0 (0.0)
ARCUATE ANNULAR STRUCTURE		
Positive	5 (45.5)	0 (0.0)
Negative	6 (54.5)	2 (100)
TELANGIECTASIA		
Positive	11 (100)	0 (0.0)
Negative	0 (0.0)	2 (100)
DOTTED BLOOD VESSEL		
Positive	0 (0.0)	2 (100)
Negative	11 (100)	0 (0.0)

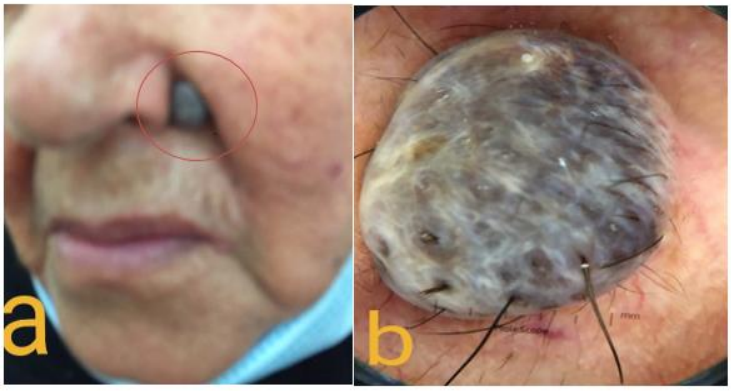

Figure 1. Clinical image of compound nevus (red circle) (A) and dermoscopic picture shows diffuse globular pattern (B).

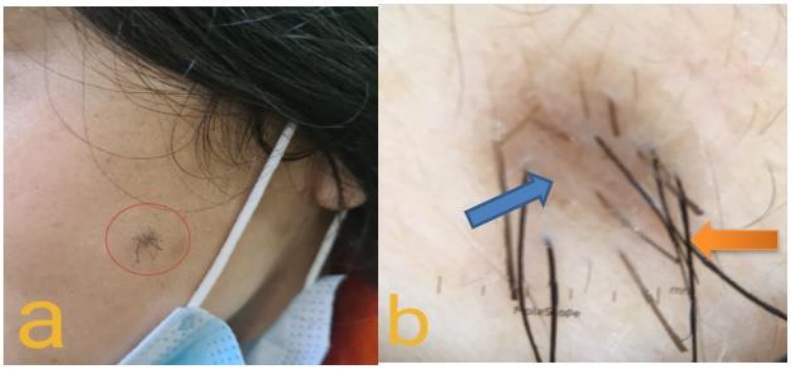

Figure 2. The clinical picture of junctional nevus (red circle) (A) and dermoscopic picture show homogenous brown pigmentation (blue arrow) and hypertrichosis (orange arrow) (B).

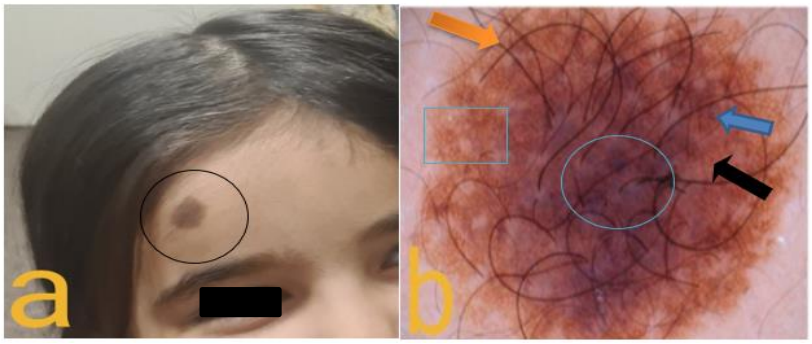

Figure 3. The clinical picture of congenital melanocytic nevus (black circle) (A) and dermoscopic picture shows a typical pigmented network (blue square), dots (black arrow), globules (blue arrow), hypertrichosis (orange arrow), and central hyperpigmented area (blue circle) (B).

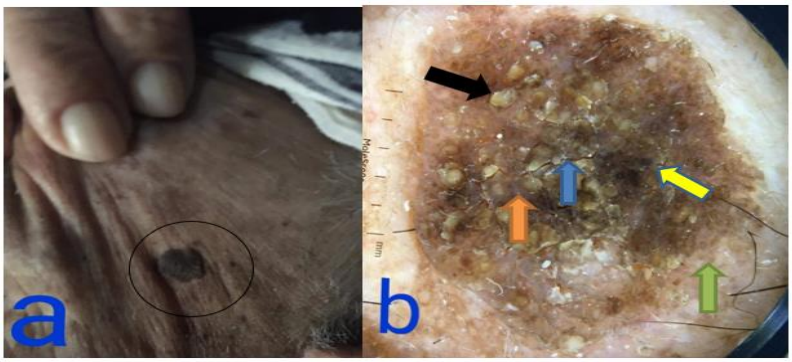

Figure 4. The clinical picture of seborrhiek keratosis (black circle) (A) and dermoscopic picture show milia-like cyst (black arrow), comedo-like opening (yellow arrow), sulci (blue arrow), gyri (orange arrow), and motheaten border (green arrow) (B).

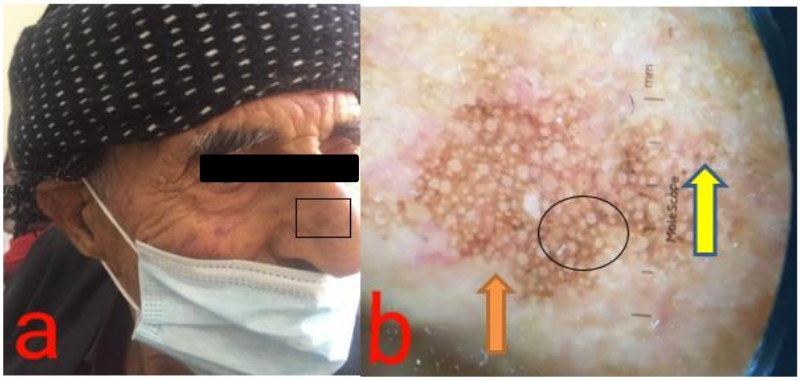

Figure 5. The clinical picture of actinic keratosis (black square) (A) and dermoscopic picture show pseudo network (black circle), homogenous brown pigmentation, dots and globules (yellow arrow), and motheaten border (orange arrow) (B).

Discussion

Benign pigmented lesions on the face, including melanocytic lesions, hyperkeratotic lesions, and inflammatory lesions, are common disorders, and dermoscopy is a noninvasive imaging method for assessing skin lesions. Dermoscopy is reported to reduce the rate of biopsy of benign skin lesions and enhance the malignant to the benign ratio of excised lesions, making it preferable to naked eye screening in detecting melanoma (17).

This study included 150 patients with benign pigmented facial lesions; the number of female patients was near twice as many as male patients. Most patients had melanocytic lesions, which accounted for nearly 2/3 of all patients, <1/2 of patients had hyperkeratotic lesions, and inflammatory lesions were the least frequent type of

lesions. The most common melanocytic nevi were compound nevi, followed by junctional nevi, atypical nevi, blue nevi, CMN, spitz nevi, combined nevus, and halo nevus, respectively.

Dermoscopic features of melanocytic nevi were homogenous brown pigmentation, pigment network, dots and globules, blotch, hypertrichosis, branched streaks, and blue-white veil. Homogenous brown pigmentation was present in all of the nevi except one case of compound nevus shows homogenous gray pigmentation. All blue nevi showed homogenous blue pigmentation, and one case of atypical nevus showed multicolor. The typical pigment network was another most common dermoscopic feature of melanocytic nevi; all of them were typical in melanocytic nevi with a positive pigmented network except in dysplastic nevi, which was atypical in more than half of the patients. At the same time, regular distributed dots and globules were another frequent feature of melanocytic nevi, but all of the dysplastic nevi showed irregular distributed dots and globules.

Centrally located hyperpigmented or hypopigmented blotch was common dermoscopic feature of melanocytic nevi except it was eccentrically located in half of the dysplastic nevi. Hypertrichosis was another feature of melanocytic nevi, which was positive in a few cases of compound nevi, CMN, junctional nevus, dysplastic nevus, and blue nevus. The branched streak was a specific dermoscopic feature for spitz nevi which was seen in both cases, and blue and white veil was a specific feature for DN, which was seen in more than half of DN. There were two cases that clinically were diagnosed as a seborrheic keratosis but after using dermoscopy confirmed the diagnosis as compound nevi, and there was another case clinically diagnosed as compound nevus, but after using dermoscopy, we confirmed the diagnosis as a pigmented basal cell carcinoma.

As a result of the present study, homogenous brown pigmentation, typical pigment network, regular distributed dots, and globules were the most abundant dermoscopic features in the compound, junctional, CMN, and halo nevi. While branched streak was a specific dermoscopic feature in spitz nevi, and homogenous blue pigmentation was a particular feature in blue nevi. On the other hand, atypical pigmented networks, irregular distributed dots and globules, eccentric hyperpigmented or hypopigmented blotch, and blue-white viel were frequent dermoscopic findings for dysplastic nevi, and they cannot be differentiated from melanoma without biopsy. Our results are nearly similar to the results of another study, which found that the most frequent dermoscopic finding in CMN was pigment network or reticulate pattern and homogenous background pigmentation (18).

Other melanocytic lesions were solar lentigines, simple lentigines, freckles, lichen planus pigmentosus, and inkspot lentigo, and the most encountered dermoscopic finding in solar lentigo were homogenous brown pigmentation, pseudo network, and moth-eaten border, which were positive in all patients, and less observed dermoscopic finding were a jelly sign, regular dots and globules, and fingerprint-like structure. These outcomes are consistent with another study that found that SL's most common dermoscopic findings were homogenous brown pigmentation and pseudo network ***(19)***. We had an elderly male patient who presented with a pigmented patch on the face; clinically, the lesion looked like solar lentigines. However, dermoscopy confirmed the diagnosis as a lentigo maligna.

Most dermoscopic findings in freckles were homogenous brown pigmentation, pseudo network, moth-eaten border, and jelly sign (2 patients), while fingerprint structure was a less encountered dermoscopic feature for freckles (one patient). In lichen planus pigmentosus, the most frequent dermoscopic features were homogenous brown pigmentation, dots, and globules, pseudo network (2 patients). In contrast, less observed dermoscopic findings were the owl’s eye sign, telangiectasia, and blotch (1 patient). We had one case of ink spot lentigo with an ink spot sign on the dermoscopy.

In the present study, pigmented seborrheic keratosis was the most prevalent hyperkeratotic lesion, and the most frequent dermoscopic features include homogenous brown pigmentation, milia-like cyst, comedo-like opening, and motheaten borders (seen in nearly all patients). Less common findings were fingerprint-like

structure, fissures and ridges, and network-like structure (less than half of the cases). These findings are similar to the results of Minagawa, 2017 (20) and Braun et al., 2002 who found that milia-like cysts and comedo-like openings were the main dermoscopic findings of SK (21).

Actinic keratosis was the second most prevalent hyperkeratotic lesion, and its most common dermoscopic features were homogenous brown pigmentation, pseudo network, and motheaten border (in all patients), and less common features were surface scale, jelly sign, dots and globules, rosette sign, and annular granular pattern. These findings are similar to the results of Casari et al., 2018 who found that pseudo network was the most common dermoscopic feature in pigmented AK (22), and Reinehr and Bakos, 2019 found that pigmented pseudo network and granular-annular pigmentation were predominant in the face (23).

LPLK were the least frequent hyperkeratotic lesions. In our study, there was a case that was clinically diagnosed as a pigmented wart, but after using dermoscopy, the lesion had all features of LPLK. Homogenous brown pigmentation, pseudo network, dots, and globules were the most common findings (seen in all patients), followed by fingerprint-like structures (67% of patients). The predominance of dots and globules is similar to the results of Bugatti and Filosa, 2007 study (24), while other features were never mentioned in other studies.

Regarding inflammatory lesions, melasma was the most prevalent type, and its most observed dermoscopic features included homogenous brown pigmentation, pseudo network, dots/globules, and telangiectasia (presented in all patients), and less common features have arcuate annular structure and blotch. These findings are nearly consistent with the results of Martínez-Rico et al., 2020 who reported a predominance of pseudo network and telangiectasia (25). We had a case of HLP on the eyelid that was diagnosed as an eczematous patch. Still, after using dermoscopy, wichams striae was found as the most specific dermoscopic feature in HLP. In hypertrophic lichen planus, dermoscopic findings include wichams striae, surface scale, dotted blood vessels, dots, and globules (2 patients). The same result was found by Vázquez-López et al., 2003 who found that Wickhams striae was the most predominant feature of hypertrophic lichen planus (26).

Conclusions

Dermoscopy is a noninvasive procedure that can diagnose benign pigmented skin lesions, differentiate them from malignant lesions, and reduce the biopsy rate as an invasive procedure. Dermoscopic features may vary from clinical pictures with more diagnostic accuracy making the patients avoid unnecessary treatment based on clinical diagnosis only. Dermoscopy is the definite tool for diagnosing BPSL locating on the face and differentiating them from pigmented malignant skin lesions.

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