Dermatology Practical & Conceptual

Dermoscopic Features of Pigmented Bowen Disease in Phototype IV Patients

Gabriel Salerni[1], Horacio Cabo[2], Emilia N. Cohen-Sabban[3], Sonia Rodríguez-Saa[4], Flavia Carolina Pozzobon[5], Cristian Navarrete-Dechent[6], Ivonne Arellano-Mendoza[7], Virginia M. González[8], Renato Marchiori Bakos[9], Nicole Orendain[10], Malynahi Tapia-Juarez[11], Luis Morales Godinez[12], Diana Guerrero Hernández[13], Sofía Andre[14], Susana Puig[15]

1 Dermatology Department, Hospital Provincial del Centenario de Rosario - Universidad Nacional de Rosario, Grupo Centro, Rosario, Argentina
2 Master of Ibero-Latin American Dermatology (CILAD), Universidad de Buenos Aires, Argentina
3 Head of Dermatology Service, Instituto de Investigaciones Médicas Alfredo Lanari, Universidad de Buenos Aires, Argentina
4 Department of Dermatology, Hospital El Carmen, Obra Social de Empleados Públicos (OSEP), Godoy Cruz, Mendoza, Argentina
5 Centro de Diagnostico Dermatológico, Bogotá, Colombia; Instituto Nacional de Cancerología, Bogotá, Colombia
6 Melanoma and Skin Cancer Unit, Escuela de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile
7 Department of Dermatology and Dermatooncology, Hospital Dalinde, Ciudad de Mexico, Mexico
8 Dermatology Department, Hospital Alemán, Buenos Aires, Argentina
9 Department of Dermatology, Hospital de Clínicas de Porto Alegre – Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
10 Private practice, Guadalajara, Mexico
11 Private practice, Ciudad de Mexico, Mexico
12 Universidad Autónoma de México. Private practice Ciudad de México, Mexico and Guatemala
13 Hospital General ISSSTE, Tacuba Ciudad de México, Universidad Nacional Autónoma de México
14 Department of Dermatology, Hospital Central, Mendoza, Argentina
15 Melanoma Unit, Hospital Clinic Barcelona, University of Barcelona, Barcelona, Spain. CIBER de enfermedades raras, Instituto de Salud Carlos III, Barcelona, Spain

Key words: Dermoscopy, Pigmented Bowen disease, Skin of color, phototype IV, Skin cancer

Citation: Salerni G, Cabo H, Cohen-Sabban EN, Rodríguez-Saa S, Pozzobon FC, Navarrete-Dechent C, et al. Dermoscopic Features of Pigmented Bowen Disease in Phototype IV Patients. *Dermatol Pract Concept*. 2026;16(1):5750. DOI: https://doi.org/10.5826/dpc.1601a5750

Accepted: July 23, 2025; **Published:** January 2026

Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

Corresponding Author: Gabriel Salerni, MD, Dermatology Department, Hospital Provincial del Centenario de Rosario - Universidad Nacional de Rosario, Grupo Centro, Rosario, Argentina taly. ORCID ID 0000-0001-6386-4402. E-mail: gabrielsalerni@hotmail.com.

ABSTRACT

Introduction: Research on the dermoscopic features of pigmented Bowen disease (pBD) in individuals with phototype IV skin is limited and consists primarily of case reports or small studies.

Objectives: We sought to describe the clinical and dermoscopic characteristics of 21 cases of pBD in a skin phototype IV population.

Methods: We conducted a multicenter retrospective analysis of 21 histopathologically confirmed cases of pBD under the auspices of the Dermoscopy Chapter of the Ibero-Latin American College of Dermatology (CILAD).

Results: A total of 21 pBD cases in phototype IV patients (57% male, mean age 63.1 years) were analyzed. Lesions were most frequently located on the upper extremities and head and neck area (29% and 24%, respectively) and exhibited brown (90.5%) and pink (90.5%) coloration, with a higher prevalence of gray, black, and blue compared to lighter phototypes. Structureless areas (90.5%) and pigmented dots in a linear arrangement (71.4%) were the most frequent dermoscopic findings. Non-specific dermoscopic findings were observed in 23.8% (N=5) of cases.

Conclusion: PBD in phototype IV presents with a distinct dermoscopic pattern, including a higher proportion black and blue colors and fewer vascular structures than observed in lighter phototypes. The most prominent dermoscopic findings were structureless areas and pigmented dots, either in a central or peripheral linear arrangement; however, in a quarter of the cases, no specific clue was observed. These findings emphasize the need for tailored diagnostic approaches and the importance of biopsy when specific dermoscopic features are absent.

Introduction

Squamous cell carcinoma (SCC) is the second most common skin cancer, typically developing on sun-exposed areas such as the face, ears, lips, and hands. Early SCC is highly curable and typically presents a lower mortality rate compared to melanoma; however, if left untreated, it can cause significant morbidity and mortality. Among its risk factors are ultraviolet radiation (UVR), exposure to certain substances such as arsenic or smoking, immunosuppression, and viral infections (HPV). Chronic sun exposure is the most common cause in fair skin phototypes. Superficial or in situ SCC, known as Bowen's disease (BD), generally appears on fair skin and corresponds to non-pigmented variant. Less frequently, BD can be pigmented, making it challenging to distinguish from other pigmented benign and malignant lesions.

Dermoscopy has been shown to improve the recognition of both melanoma and non-melanoma skin cancer [1-5]. The dermoscopic characteristics of pBD have been previously described in fair skin phototypes [6], but there are only a few reports regarding dermoscopic features in darker skin phototypes. We recently published the dermoscopic findings in pBD in Latin American population including phototypes II, III, and IV [7].

Herein, we present a large series of 21 cases of pBD in Ibero-Latin American population with phototype IV.

Objective

We sought to report clinical and dermoscopy findings in a series of 21 pBD diagnosed in skin phototype IV patients.

Methods

We conducted a retrospective analysis of clinical and dermoscopic characteristics of a large series of proven pBD retrieved from the database of 22 institutions, planned as a project of the Dermoscopy Chapter of Ibero-Latin American College of Dermatology (CILAD) [7]. We performed a sub-analysis of cases corresponding to skin phototype IV patients.

Clinical data such as age, sex, previous history of skin cancer, skin phototype, time of evolution, localization, and diameter of the lesions were recorded. The clinical and dermoscopic images were included in a PowerPoint presentation (Microsoft Corp, Redmond, Washington) and evaluated by three experts dermoscopists (E.C.S, G.S. and H.C.) who assessed both clinical and dermoscopic features. Dermoscopic images were analyzed for the presence or absence of criteria for pBD as previously described [6, 8-10].

Statistical Analysis

The data were analyzed with the SPSS 22 program. The distribution of the qualitative data is presented by means of absolute and relative frequencies, and the distribution of the quantitative data by mean and standard deviation or median and interquartile range, depending on the distribution of the data. Univariate exploratory analysis was performed to compare dermoscopic findings by lesion phototype. Chi-square test or Fisher's exact test was performed to compare qualitative variables, and non-parametric Mann-Whitney U test was calculated to compare quantitative variables. All tests were bilateral, and a p-value of <0.05 was considered statistically significant.

Results

Demographic Data

A total of 21 pBD diagnosed in 21 patients skin phototype IV were included. The study population consisted of nine females (43%) and 12 males (57 %), with a mean age of 63.1 years (range 40–82 years). Fifteen patients (71.4%) had no history of skin malignancy. Among the remaining six patients, three had a history of BCC, two had SCC, and one had both BCC and melanoma.

Clinical Presentation

The median size of the lesions was 13 mm (interquartile range [IQR] 10–18). The lesions were distributed as follow: six (28.6%) on the upper extremities, five (23.8%) on the head and neck, three (14.3%) on the anterior trunk, two (9.5%) on the lower extremities, two (9.5%) on the posterior trunk, and three (14.3%) in other locations. The median time to diagnosis was 16 months, although it was unknown in eight cases. Clinically, nearly half of the lesions were flat (52.4%), and most were asymmetric (90.5%) and presented with scales (81%).

Dermoscopy Evaluation

Dermoscopic findings are shown in Table 1. Among the dermoscopic patterns, structureless areas were the most frequent, observed in 90.5% of the cases (N=19), followed by dots in 66.7% of the cases (N=14); circle pattern was observed in 9.5% (N=2). Brown and pink colors were the most frequent (90.5% N=19, respectively); gray color was observed in 52.4% of cases (N=11), white in 47.6% (N=10), black in 14.3% (N=3), and blue in 4.8% of the cases (N=1).

The most prevalent dermoscopic features were hypopigmented structureless areas in 90.5% (N=19) of cases and pigmented lines or dots in linear arrangement central or peripheral in 71.4% (N=15). Regarding vessels and their distribution, linear arrangement and vessels with peripheral linear arrangement were 38.1% (N=8), respectively. Clustered vessels were observed in 33.3% (N=7), glomerular in 28.6% (N=6), and dotted in 23.8% (,=5). In 23.8% (,=5) of cases, no diagnostic clue was observed (Figure 1).

PBD in Phototypes II-III vs. Phototype IV

We performed a secondary analysis comparing our findings with the results of a previous publication including phototypes

Table 1. Dermoscopy evaluation.

		Total n=21			
		N	Percentage	95% CI	
Pattern	Structureless	19	90.5%	69.6%	98.8%
	Dots	14	66.7%	43.0%	85.4%
	Circles	2	9.5%	1.2%	30.4%
Color	Brown	19	90.5%	69.6%	98.8%
	Pink	19	90.5%	69.6%	98.8%
	Grey	11	52.4%	29.8%	74.3%
	White	10	47.6%	25.7%	70.2%
	Black	3	14.3%	3.0%	36.3%
	Blue	1	4.8%	0.1%	23.8%
Dermoscopic features	Structureless hypopigmented areas (White, pink, or skin color)	19	90.5%	69.6%	98.8%
	Pigmented lines or dots in linear arrangement centrally or peripherally	15	71.4%	47.8%	88.7%
	Vessels with linear arrangement	8	38.1%	18.1%	61.6%
	Vessels with linear arrangement peripherally	8	38.1%	18.1%	61.6%
	clustered vessels	7	33.3%	14.6%	57.0%
	glomerular vessels	6	28.6%	11.3%	52.2%
	dotted vessels	5	23.8%	8.2%	47.2%
	other vessels	1	4.8%	0.1%	23.8%
	No clues observed	5	23.8%	8.2%	47.2%

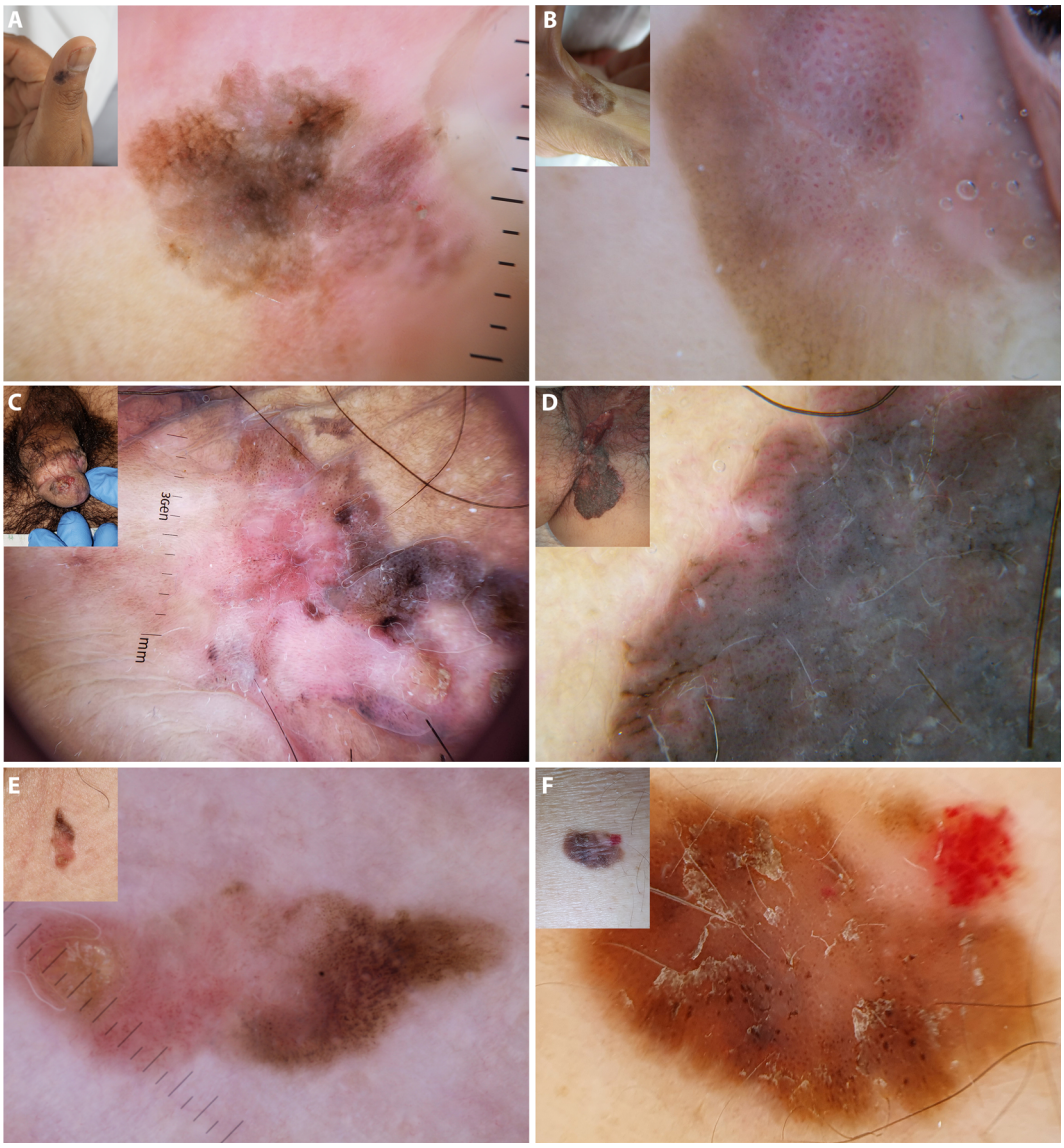

Figure 1. Pigmented Bowen disease in skin phototype IV located on the (A, B) hands, the genital area ([B] penis and [D] intergluteal/vulvar), and (E, F) non-genital area.

II, III, and IV [7]. According to localization (Figure 2), pBD in phototype IV were more frequently located on the upper extremities and in the head and neck area than in phototype II and III (28.6% vs 17.5%, 23.8% vs. 14.3%, respectively), while pBD was more frequent in lower extremities in phototypes II and III (38.1% vs 28.6%). Lesions located in "other locations" such as the genital or gluteal areas, were more frequently observed in phototype IV. However, no statistically significant difference was observed regarding topography (P=0.060).

Patterns and colors are presented in Figure 3. Pattern distribution was quite similar between the two groups; structureless areas and dots were slightly more frequently observed in phototype II and III vs IV (92.5% vs. 90.5%), while circles were slightly more frequent in phototype IV (9.5% vs. 7.9%). Regarding colors, brown and pink were more frequent in the phototype II and III than in phototype VI (99.2% vs. 90.5%, 95.2% vs. 90.5%, respectively), while gray, black, and blue were more frequent among pBD in phototype IV (52.4% vs. 34.1%, 14.3% vs. 1.6%, 4.8% vs. 3.2%, respectively). The only statistically significant difference was found in black color (P=0.021).

The presence of dermoscopic features in both groups is shown in Figure 4. Structureless hypopigmented areas had very similar distributions: 92.1% in Phototype II-III and 90.5% in phototype IV. All features related to distribution and morphology of vessels were more frequent in the phototype II-III: vessels with linear arrangement (66.7% vs 38.2%), vessels with peripheral linear arrangement (65.1% vs 38.1%) (P=0.012), clustered vessels (59.5% vs. 33.3%) (P=0.025), glomerular vessels (56.3% vs. 28.6%) (P=0.018), dotted vessels (49.2% vs. 23.8%) (P=0.012), and other

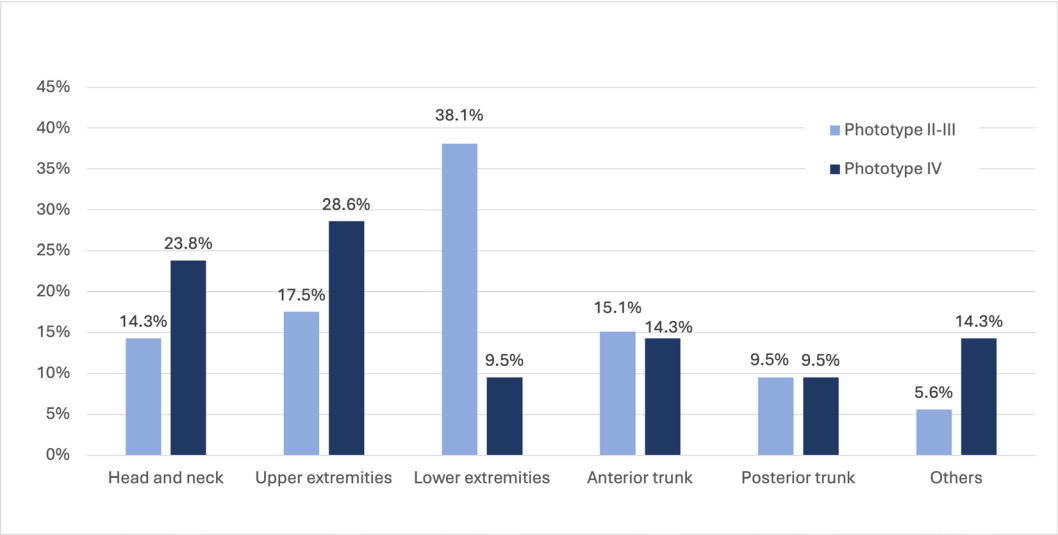

Figure 2. Localization: phototypes II-III vs. IV.

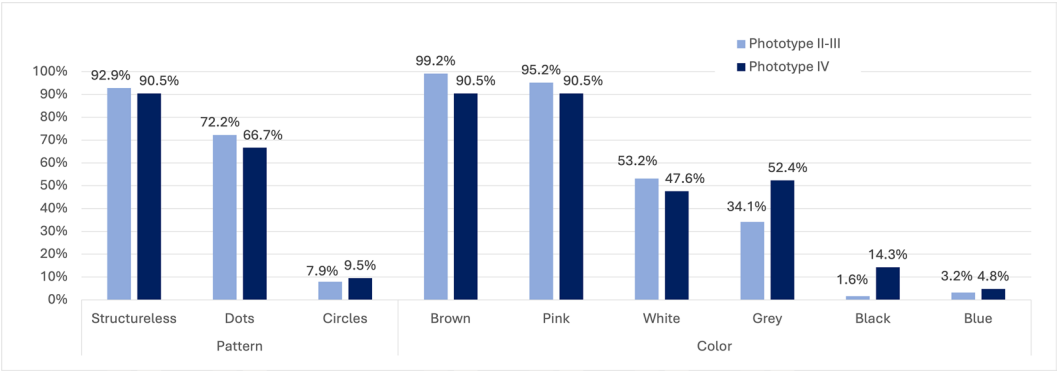

Figure 3. Dermoscopic patterns and colors: phototypes II-III vs. IV.

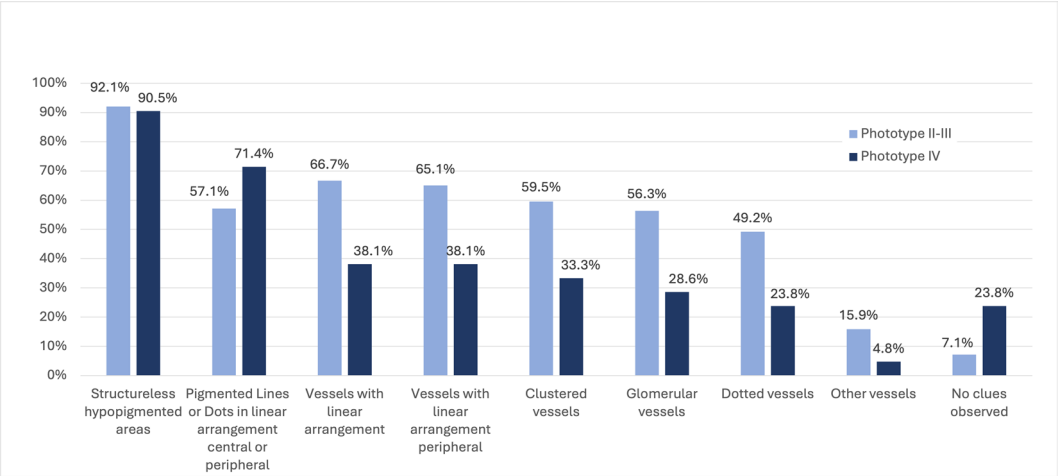

Figure 4. Dermoscopic features: phototypes II-III vs. IV.

vessels (15.9% vs. 4.8%) (P=0.311). Pigmented lines or dots in linear arrangement, central or peripheral distributed, were more frequent in the phototype IV group (71.4% vs. 59.2%), but differences were not statistically significant (P=0.218). Dermoscopic clues for pBD were notably less frequent in the phototype group IV in comparison with the phototype II-III group (9.5% vs. 23.8%) (P=0.031).

Discussion

Pigmented Bowen's disease (pBD) is an infrequent variant of squamous cell carcinoma in situ characterized by pigmentation, which complicates its clinical differentiation from other benign or malignant pigmented lesions such as melanoma and pigmented basal cell carcinoma.

Dermoscopy has shown to improve diagnostic accuracy for both melanoma and non-melanoma skin cancer. The dermoscopic features of pBD have been already described in the Caucasian European population [6]. Regarding Latin American individuals, we previously published a multicenter retrospective study on 147 histologically-proven pBD patients mostly corresponding to phototypes III and IV [7], reporting that the pigmented structures and the features related to the presence of melanin were much more frequent than in fair-skinned patients.

The present study focused on the phototype IV population, a subgroup with limited representation in the literature; significant differences in dermoscopic characteristics compared to lighter phototypes are highlighted. The most significant dermoscopic findings included a higher proportion of black, gray, and blue colors compared to phototypes II and III. This darker pigmentation pattern may be associated with reduced visibility of blood vessels, as indicated by the lower prevalence of vascular patterns (linear, dotted, or clustered vessels) in our population. Additionally, the frequency of pigmented dots in a linear arrangement, both centrally and peripherally distributed, was higher in patients with phototype IV, emphasizing the importance of this finding as a distinctive dermoscopic clue.

A noteworthy observation was the absence of dermoscopic clues in 23.8% of pBD in phototype IV patients, which poses difficulties in diagnosis, emphasizing the need for biopsy when a definitive diagnosis cannot be established based on dermoscopy. The absence of dermoscopic clues were also observed in pBD of lighter phototypes, but significantly less frequently (23.8 vs 7.1%).

Finally, an additional specific finding was the uncommon anatomical locations where pBD appears. pBD in skin type IV appears on the upper extremities such as the hand and the periungual skin and on other locations such as the genitalia or around the anal region. These represent complex anatomical locations that complicate the management of pBD. These locations are relevant functional and cosmetic areas that frequently require treatment with Mohs micrographic surgery. Therefore, early diagnosis is crucial, and recognizing the clinical and dermoscopic features is of paramount relevance.

Although our study represents one of the largest series of pBD in phototype IV patients, the sample size remains limited.

Conclusion

This study provides valuable information regarding the clinical and dermoscopic characteristics of pBD in phototype IV patients: lesions were most commonly located on extremities, head and neck, and genital/gluteal areas. Brown and pink were the most frequent colors, with the proportion of gray, black, and blue higher in phototype IV; structureless areas and pigmented dots in a linear arrangement, both centrally and peripherally distributed, were the most relevant dermoscopic features in this population. However, approximately one in four lesions lacked clear dermoscopic clues.

In conclusion, our findings underscore the importance of adapting diagnostic strategies to the specific characteristics of phototype IV, which could enhance diagnostic accuracy and the clinical management of pBD in this population.

References

1. Vestergaard ME, Macaskill P, Holt PE, Menzies SW. Dermoscopy compared with naked eye examination for the diagnosis of primary melanoma: a meta-analysis of studies performed in a clinical setting. Br J Dermatol. 2008 Sep;159(3):669-76. DOI: 10.1111/j.1365-2133.2008.08713.x. Epub 2008 Jul 4. PMID: 18616769.
2. Kittler H, Pehamberger H, Wolff K, Binder M. Diagnostic accuracy of dermoscopy. Lancet Oncol. 2002 Mar;3(3):159-65. DOI: 10.1016/s1470-2045(02)00679-4. PMID: 11902502.
3. Bafounta ML, Beauchet A, Aegerter P, Saiag P. Is dermoscopy (epiluminescence microscopy) useful for the diagnosis of melanoma? Results of a meta-analysis using techniques adapted to the evaluation of diagnostic tests. Arch Dermatol. 2001 Oct;137(10):1343-50. DOI: 10.1001/archderm.137.10.1343. PMID: 11594860.
4. Reiter O, Mimouni I, Gdalevich M, et al. The diagnostic accuracy of dermoscopy for basal cell carcinoma: A systematic review and meta-analysis. J Am Acad Dermatol. 2019;80(5):1380-1388. DOI: 10.1016/j.jaad.2018.12.026. Epub 2018 Dec 21. PMID: 30582991.
5. Dinnes J, Deeks JJ, Chuchu N, et al. Visual inspection and dermoscopy, alone or in combination, for diagnosing keratinocyte skin cancers in adults. Cochrane Database Syst Rev. 2018;12(12):CD011901. DOI: 10.1002/14651858.CD011901.pub2. PMID: 30521688
6. Zalaudek I, Argenziano G, Leinweber B et al. Dermoscopy of Bowen's disease. Br J Dermatol. 2004 Jun;150(6):1112-6. DOI: 10.1111/j.1365-2133.2004.05924.x. PMID: 15214896.
7. Cabo H, Salerni G, Sabban EC et al. Dermoscopic Features of Pigmented Bowen Disease: A Multicenter Study on Behalf of the Ibero-Latin American College of Dermatology (CILAD). Dermatol Pract Concept. 2024 Apr 1;14(2):e2024086. DOI: 10.5826/dpc.1402a86. PMID: 38810038
8. Bugatti L, Filosa G, De Angelis R. Dermoscopic observation of Bowen's disease. J Eur Acad Dermatol Venereol. 2004 Sep;18(5):572-4. DOI: 10.1111/j.1468-3083.2004.01008.x. PMID: 15324396.
9. Stante M, de Giorgi V, Massi D, Chiarugi A, Carli P. Pigmented Bowen's disease mimicking cutaneous melanoma: clinical and dermoscopic aspects. Dermatol Surg. 2004 Apr;30(4 Pt 1):541-4. DOI: 10.1111/j.1524-4725.2004.30173.x. PMID: 15056147.
10. Cameron A, Rosendahl C, Tschandl P, Riedl E, Kittler H. Dermatoscopy of pigmented Bowen's disease. J Am Acad Dermatol. 2010 Apr;62(4):597-604. DOI: 10.1016/j.jaad.2009.06.008. Epub 2010 Jan 15. PMID: 20079953.