

Dermoscopic Features of Common Hypomelanotic Macular Diseases in a Tertiary Institution: A Descriptive Study

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Abstract: Dermoscopy reveals diagnostic details not discernible to the naked eye. This non-invasive tool is particularly useful in the evaluation of hypomelanotic dermatoses, where subtle pigmentary changes often pose diagnostic challenges. Assessing vascular, pigmentary, and structural features aids in differentiating various hypomelanotic macular conditions. This study aimed to characterize the dermoscopic features of common hypomelanotic skin conditions in a tertiary hospital and to evaluate the diagnostic utility of dermoscopy in reducing reliance on skin biopsies. An observational descriptive study was conducted over three months, involving patients with newly developed hypomelanotic patches and macules. All patients underwent clinical evaluation and dermoscopic examination using a handheld DermLite DL3N. Dermoscopic assessment included evaluation of pigmentation changes, lesion edge definition, scaling, perifollicular and perilesional pigmentation, hair color changes, vascular morphology, and distinctive dermoscopic patterns. The mean age of the patients was 28.82 ± 13.01 years. Of the cohort, 26 (54.2%) were male and 22 (45.8%) were female. Diagnoses included pityriasis versicolor (n=27, 56.3%), vitiligo (n=11, 22.9%), pityriasis alba (n=9, 18.8%), and nevus depigmentosus (n=1, 2.1%). This study highlights dermoscopy as a valuable diagnostic tool for hypomelanotic macular diseases, particularly in resource-limited rural settings with restricted access to histopathology. While not definitive for all hypomelanotic conditions, its integration with clinical evaluation may improve diagnostic accuracy and provides a practical alternative to invasive procedures, supporting its role in standard dermatologic practice.

Keywords: Dermoscopy, Hypopigmented, Vitiligo, Pityriasis versicolor, Pityriasis alba, Nevus depigmentosus

Introduction

Hypomelanotic macular diseases are a common reason for dermatological consultation. Hypomelanosis refers to a significant reduction in melanin levels, resulting in areas of decreased pigmentation compared to normal skin [1], which manifest as white patches of varying sizes. Common hypomelanotic conditions encountered in dermatology practice in the Philippines include vitiligo, pityriasis alba, extragenital lichen sclerosus, achromic pityriasis versicolor, idiopathic guttate hypomelanosis, and nevus depigmentosus.

Although most hypomelanotic skin conditions are benign, cosmetic concerns can lead to social stigma and psychosocial distress, particularly in individuals with darker skin. This often prompts patients to seek medical advice and treatment [1]. Vitiligo, especially when lesions affect exposed areas or involve extensive body surface area, significantly impairs quality of life [2]. Similarly, while pityriasis alba is generally benign and self-limiting, its visibility in darker skin tones may cause emotional distress [3].

Hypomelanotic macular diseases affect individuals across all age groups and frequently present diagnostic challenges due to overlapping clinical features, particularly in early or atypical stages [3]. Diagnosis typically requires a comprehensive dermatologic evaluation, including detailed history-taking, thorough skin examination, and the use of adjunctive diagnostic tools such as Wood's lamp, dermoscopy, laboratory tests, and skin punch biopsy when indicated. While histopathologic examination remains the gold standard, its invasive nature and limited accessibility in some regions of the Philippines highlight the need for alternative diagnostic approaches.

Dermoscopy, also known as dermatoscopy, epiluminescence microscopy, or skin surface microscopy, has become an invaluable tool in the diagnosis of various

dermatological disorders [4]. Dermoscopy has proven valuable in the evaluation of scalp and hair diseases, nail-fold abnormalities, inflammatory dermatoses, skin tumors, and melanocytic pigmentary lesions [3]. In hypomelanotic disorders, dermoscopy provides additional visual clues that aid differentiation, assess disease severity, and monitor treatment response. Dermoscopy serves as a practical adjunct to clinical assessment and can be integrated with histopathology to assist dermatologists in evaluating hypomelanotic conditions [5].

Despite growing global recognition of dermoscopy as a rapid, non-invasive, and cost-effective diagnostic tool, its routine use in evaluating hypomelanotic dermatoses remains limited in the Philippines. Similar patterns have been observed in other countries with comparable healthcare settings. For instance, a nationwide survey of Indian dermatologists reported that only 54.7% routinely used dermoscopy, citing barriers such as limited training, high equipment costs, and uncertainty about its diagnostic value [6].

This study aims to analyze the dermoscopic features of common hypomelanotic macular diseases observed in the dermatology outpatient department in the Philippines. It also seeks to evaluate the utility of dermoscopy as an adjunctive tool for the rapid and accurate diagnosis of hypomelanotic skin conditions. Furthermore, the study aims to move beyond the traditional clinico-pathologic correlation of skin diseases to a more comprehensive clinico-dermoscopic-pathologic correlation.

By providing data on characteristic dermoscopic findings of common hypomelanotic disorders, this study may encourage dermatologists to incorporate dermoscopy into routine clinical assessments. Integrating dermoscopic evaluation into standard examinations of patients with pigmentary disorders has the potential to enhance diagnostic accuracy and improve overall patient care.

Methodology

This observational descriptive study was conducted from February to April 2024, at the Outpatient Department of the Research Institute for Tropical Medicine (RITM), Department of Dermatology, Philippines. Patients presenting with hypopigmented macules or patches were recruited after providing informed consent. Patients were eligible if they were 18 years or older, of any sex, and had untreated or newly diagnosed hypomelanotic skin lesions within the past year. Patients who declined to provide informed consent, had previously received treatment for their lesions such as topical medications, phototherapy, or systemic antifungals, and those belonging to vulnerable populations, including individuals unable to provide informed consent or elderly patients with cognitive impairment, were excluded from the study.

The study protocol was reviewed and approved by the RITM Institutional Review Board (RITM-IRB). Each patient was assigned a unique code number to maintain confidentiality. All patients underwent a comprehensive dermatological assessment, which included detailed history-taking and physical examination. Demographic information, including age, sex, socioeconomic status, and relevant clinical findings, was collected and documented.

Dermoscopy Assessment

Dermoscopy was performed on all enrolled patients using a hand-held dermoscope (DermLite DL3N, Italy) at 10× magnification, utilizing both polarized and non-polarized light. High-resolution dermoscopic images were captured with an iPhone 13 Pro Max camera attached to the device, and the dates and times of image capture were automatically recorded. All examinations were conducted under the supervision of consultants from the Dermoscopy

Subspecialty Core Group of the Philippine Dermatological Society.

Dermoscopic assessment focused on several parameters adapted from the study by Al Refu [3], including altered pigmentation within lesions, edge definition (well- or ill-defined), the presence of scales within or around lesions, perifollicular pigmentation, perilesional hyperpigmentation, hair color changes within lesions, vascular morphology and arrangement including telangiectasia, and the identification of distinctive dermoscopic patterns. The findings using dermoscopy were interpreted with the help of all investigators. The terminology used in dermatoscopy followed the International Society of Dermoscopy's third consensus conference [7] for illustrating and summarizing the findings.

Other Diagnostic Procedures

Patients with scaly hypomelanotic lesions underwent a Potassium Hydroxide (KOH) examination to evaluate for fungal etiology. Skin scrapings were collected from the affected areas, mounted on microscope slides with 10% KOH, and examined by trained personnel at the institutional clinical laboratory. A diagnosis of pityriasis versicolor was confirmed upon identifying characteristic fungal elements showing the typical "spaghetti and meatballs" appearance.

Pityriasis alba was diagnosed clinically in patients presenting with hypopigmented macules and patches on the head or neck, negative KOH results, and a history of atopy. Indeterminate leprosy was suspected in patients with hypopigmented macules or patches accompanied by altered sensation. Sensory testing, including light touch, pinprick, and temperature assessment, was performed on both lesional and non-lesional skin to evaluate sensory impairment.

Skin punch biopsies were obtained for histopathological confirmation in suspected cases of vitiligo, idiopathic guttate hypomelanosis, nevus depigmentosus, and

leprosy, following standard aseptic protocols. In patients with biopsy-confirmed vitiligo, supplementary Melan-A staining was performed to assess melanocyte presence and distribution. Additionally, all lesions were examined under a Wood's lamp to assess pigmentary changes and aid in differential diagnosis.

Analysis

Descriptive statistics were used to summarize demographic and clinical data. Categorical variables were presented as frequencies and percentages, while continuous variables were expressed as means with standard deviations. All data were securely stored using the Kobo Toolbox programmed by the Department of Epidemiology and Biostatistics (DEBS), with access restricted to the primary investigators and statisticians. Results were analysed to describe dermoscopic features observed in common hypomelanotic conditions.

Results

Sociodemographic Profile of Patients

A total of 48 patients with hypomelanotic skin disease were recruited for this study. **Table 1** summarizes the sociodemographic characteristics of the patients. Of these, 26 (54.17%) were male and 22 (45.83%) were female. Most patients (56.25%) were aged 18–24 years, with a mean age of 28.31 ± 13.01 years. Regarding civil status, 25 (52.08%) were married, 16 (33.33%) were single, and 7 (14.58%) were widowed. In terms of socioeconomic status, 25 (52.08%) belonged to the middle-income group, followed by 16 (33.33%) in the low-income group. The most common sites of lesion predilection were the extremities ($n=17$, 35.4%), back ($n=13$, 27.1%), and chest ($n=12$, 25%), while a smaller proportion of patients ($n=6$, 12.5%) had lesions on the face. For skin type distribution, 23 (47.9%) were classified as Fitzpatrick skin type III, 21 (43.8%) as type IV, and 4 (8.3%) as type V.

Clinical and Diagnostic Characteristics of Hypopigmented Macular Disorders

Table 2 summarizes the clinical and diagnostic characteristics of patients with hypomelanotic macular diseases, including vitiligo ($n=11$), pityriasis alba ($n=9$), pityriasis versicolor ($n=27$), and nevus depigmentosus ($n=1$).

Table 1. Sociodemographic characteristics of patients ($n=48$).

Category	Frequency	%
Mean age ± SD	28.82 ± 13.01	
Range	18-65	
Age (years)		
18-24	27	56.25
25-34	7	14.58
35-44	7	14.58
45-54	4	8.33
55-65	3	6.25
Sex		
Male	26	54.17
Female	22	45.83
Civil Status		
Single	16	33.33
Married	25	52.08
Widowed	7	14.58
Socioeconomic status (₱)		
<21,000	16	33.33
21,000 - 76,000	25	52.08
> 76,000	7	14.58
Lesion site		
Extremities	17	35.40
Back	13	27.10
Chest	12	25.00
Face	6	12.50
Fitzpatrick skin type		
III	23	47.90
IV	21	43.80
V	4	8.30

Vitiligo

Patients diagnosed with vitiligo presented with solitary or multiple depigmented macules and patches, typically with well-defined borders.

Approximately 90.91% of these patients had lesions without scaling or pruritus. All vitiligo patients demonstrated negative findings on KOH skin scraping and exhibited sharply demarcated bright blue-white fluorescence under Wood's lamp examination.

Pityriasis Alba

Patients with pityriasis alba presented with few to multiple macules and patches exhibiting hypopigmentation to mild erythema, most of which were characterized by ill-defined borders. Approximately 77.78% of patients had lesions without scaling, while 66.67% reported pruritus. All patients with pityriasis alba demonstrated negative KOH skin scraping findings, and Wood's lamp examination revealed no fluorescence in any case.

Pityriasis Versicolor

Patients with pityriasis versicolor presented with hypopigmented macules and patches with ill-defined borders, predominantly affecting the face, neck, upper trunk, and extremities. Scaling was observed in 67.86% of patients. Approximately 60.71% of patients reported no pruritus, while 39.29% experienced pruritus. The majority of patients (89.29%) had positive KOH findings, demonstrating short, angular hyphae in clusters, producing the characteristic "spaghetti and meatball" appearance. Yellowish-green fluorescence was consistently observed on the lesions under Wood's lamp examination.

Nevus Depigmentosus

The single patient diagnosed with nevus depigmentosus presented with a solitary hypopigmented macule with ill-defined borders. The lesion was non-scaly and without associated pruritus. KOH skin scraping was negative, and

Wood's lamp examination showed faint accentuation of the lesion without fluorescence.

Dermoscopic Features of Hypopigmented Disease

Table 3 summarizes the dermoscopic features of hypopigmented diseases among the 48 patients. The patterns include altered pigmentation within lesions, edge definition (well- or ill-defined), presence of scales within or around lesions, perifollicular pigmentation, perilesional hyperpigmentation, hair color changes within lesions, vascular morphology including telangiectasia, and distinctive dermoscopic patterns.

Vitiligo

Figure 1A to **Figure 1E** illustrates the clinical, dermoscopic, and histopathologic features of vitiligo in one of the patients. Most patients (81.82%) demonstrated perifollicular pigmentation. With regard to hyperpigmentation patterns, 54.55% showed no specific changes, while 36.36% exhibited lesional hyperpigmentation. In terms of hair color, 54.55% had normal hair, whereas 45.45% presented with white vellus hair. Morphologic vascular structures or telangiectasia were absent in 63.64% of cases. Distinctive dermoscopic patterns also varied: 40% of patients demonstrated diffuse depigmented white glow and trichrome patterns, while 30% showed a white pigment network.

Histopathologic examination was performed on all vitiligo patients. Findings consistently demonstrated a basket-woven stratum corneum, a marked reduction in melanocytes at the basement membrane zone, mild superficial perivascular lymphocytic infiltration, and the presence of pigment-laden macrophages (**Figure 1D**). These findings were consistent with the diagnosis of vitiligo.

Table 2. Clinical and diagnostic characteristics of patients with hypomelanotic macular diseases.

Criteria	Vitiligo (n=11)	Pityriasis Alba (n=9)	Pityriasis Versicolor (n=27)	Nevus depigmentosus (n=1)
Altered pigmentation within the lesions				
Few depigmented macules and patches	2 (18.18%)	-	-	-
Multiple depigmented macules and patches	8 (72.73%)	-	-	-
Solitary depigmented macules and patches	1 (9.09%)	-	-	-
Hypopigmented macules and patches	-	6 (66.67%)	-	-
Hypopigmented to erythematous macules	-	1 (11.11%)	1 (3.70%)	-
Hypopigmented macules and globules	-	2 (22.22%)	26 (96.30%)	-
Multiple faint reticular hypopigmented network	-	-	-	1 (100%)
Edge definition or lesion borders				
Well-defined	11 (100%)	0 (0%)	2 (7.41%)	0 (0%)
Ill-defined	0 (0%)	9 (100%)	25 (92.59%)	1 (100%)
Scales				
Absent	10 (90.90%)	7 (77.80%)	9 (33.33%)	1 (100%)
Present	1 (9.10%)	2 (22.20%)	18 (66.67%)	0 (0%)
Nature of scales				
Few scales	11 (100%)	3 (33.33%)	19 (70.37%)	-
Multiple scales	0	1 (11.11%)	3 (11.11%)	-
Non-scaly	0	5 (55.56%)	5 (18.52%)	1 (100%)
Pruritus				
Absent	10 (90.90%)	3 (33.30%)	16 (59.26%)	1 (100%)
Present	1 (9.10%)	6 (66.70%)	11 (40.74%)	0 (0%)
KOH test				
Positive	0 (0%)	0 (0%)	24 (88.89%)	0 (0%)
Negative	11 (100%)	9 (100%)	3 (11.11%)	1 (100%)
Wood's lamp fluorescence				
Positive	11 (100%)	0 (0%)	27(100%)	0 (0%)
Negative	0 (0%)	9 (100%)	0 (0%)	1 (100%)

The reduction or absence of melanocytes observed histologically corresponded with the dermoscopic appearance of a diffuse white glow over the affected lesions. This phenomenon is likely attributable to light-induced autofluorescence from dermal collagen due to melanocyte depletion, resulting in the observed bright white luminescence [4].

Pityriasis Alba

A smaller proportion of patients presented with hypopigmented to erythematous macules (11.11%) and hypopigmented globules (22.22%). All patients exhibited ill-defined lesion borders,

normal hair color, and absence of perifollicular pigmentation. Regarding lesion scaling, 55.56% had non-scaly lesions, 33.33% had few scales, and 11.11% had multiple scales. Hyperpigmentation changes were absent in the majority of cases (77.78%), while a small proportion (11.11%) demonstrated lesional or non-lesional hyperpigmentation. Analysis of distinctive dermoscopic patterns showed that 57.14% of patients exhibited no specific pattern, whereas 28.57% demonstrated a hypopigmented pigment network with globules. **Figure 2A** to **Figure 2B** illustrate the clinical and dermoscopic features of pityriasis alba in one patient.

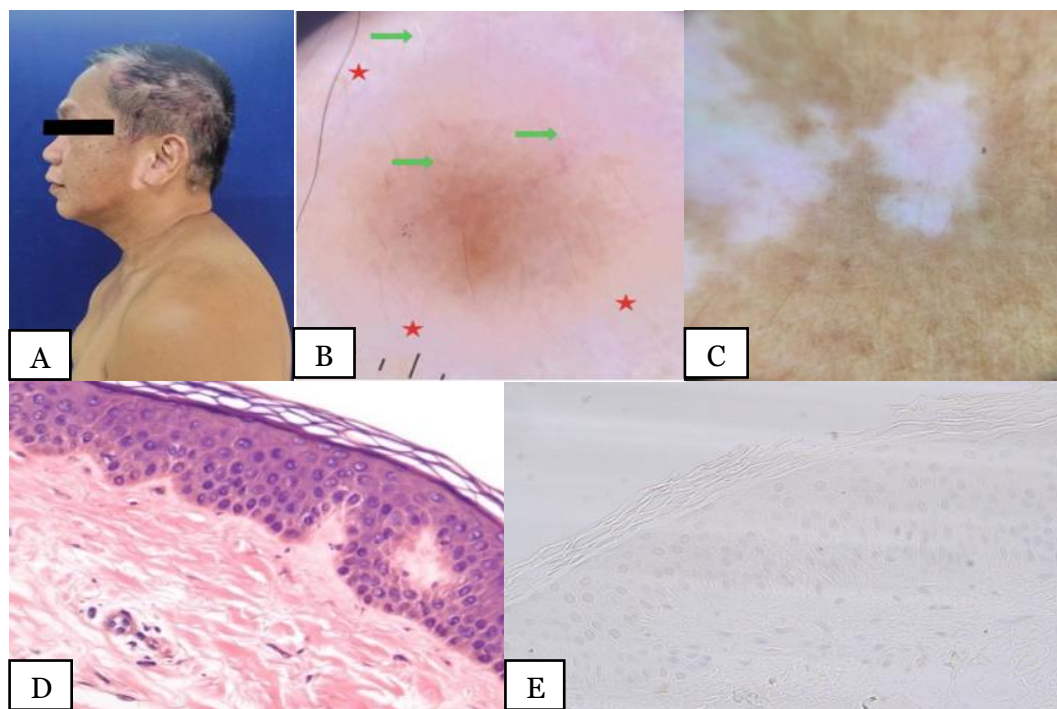


Figure 1. (A) A 54-year-old male with a 10-year history of multiple, well-defined hypopigmented patches on the face and extremities; **(B)** Dermoscopy using polarized light showing areas of diffuse white glow (red stars) and white villus hair (green arrow); **(C)** Dermoscopy using non-polarized light demonstrating a trichrome pattern with depigmented areas, lighter hypopigmented zones, and normal skin; **(D)** Histopathology showing a suspicious decrease in melanocytes at the basement membrane zone; **(E)** Positive Melan-A immunostaining confirming melanocyte presence.

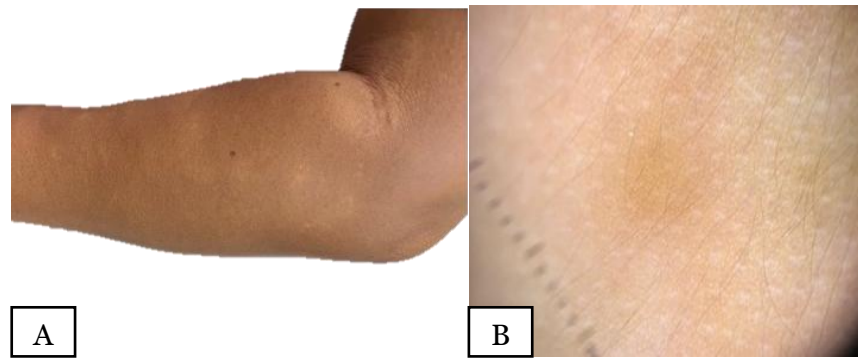


Figure 2. (A) A 20-year-old female patient with atopic dermatitis presenting with ill-defined hypopigmented patches on her upper extremities; (B) Dermoscopy using non-polarized light reveals areas of hypopigmentation with poorly defined margins, making it difficult to distinguish them from the surrounding skin.

Table 3. Dermoscopic features of hypomelanotic macular diseases.

Disease	Dermoscopic Features	Frequency (%)
Vitiligo	• Well-defined non-scaly depigmented borders with areas of diffuse white glow	4 (40.00%)
	• With perifollicular pigmentation	9 (81.82%)
	• Trichrome pattern	4 (40.00%)
	• Areas of white pigment network; white vellus hair	5 (45.45%)
Pityriasis versicolor	• Ill-defined hypopigmented areas with white dots and globules with fine scales	12 (43.45%)
	• Fine scales along skin creases	8 (30.45%)
	• Hypopigmented areas with white blotches and pigment network	7 (26.15%)
Pityriasis alba	• Poorly-demarcated, non-scaly, hypopigmented network and globules	4 (28.58%)
	• Erythematous changes	3 (33.33%)
Nevus depigmentosus	• Faint reticular hypopigmented network with serrated margin	1 (100%)

Pityriasis Versicolor

The majority of patients (96.30%) presented with hypopigmented macules, patches, and globules, with ill-defined borders observed in 92.86% of cases. Lesions were distributed on the face, neck, upper trunk, and extremities in all patients. Most patients exhibited non-pruritic lesions and positive KOH skin scrapings. Regarding lesion scaling, 71.43% of patients had few scales, 17.86% had non-scaly lesions, and 10.71% had multiple scales. Perifollicular pigmentation was absent in 89.29% of cases. Similarly, 71.43% of patients

showed no hyperpigmentation changes, and all patients (100%) had normal hair color. Additionally, 89.28% of patients exhibited no vascular or telangiectatic features.

Analysis of distinctive dermoscopic patterns revealed variable findings. 43.45% of patients showed hypopigmented areas with white dots and globules accompanied by fine scales, 30.45% displayed fine scales along skin creases, and 26.15% demonstrated hypopigmented areas with white blotches and pigment networks. **Figure 3A** to **Figure 3B** illustrate the clinical and dermoscopic features of pityriasis alba in one patient.

Nevus Depigmentosus

The single patient diagnosed with nevus depigmentosus presented with multiple ill-defined, hypopigmented, non-scaly macules (**Figure 4A**). There was no evidence of

perifollicular pigmentation, hyperpigmentation, or vascular structures. The patient had normal hair, and dermoscopic examination revealed a faint reticular hypopigmented network with a serrated margin (**Figure 4B, 4C**).

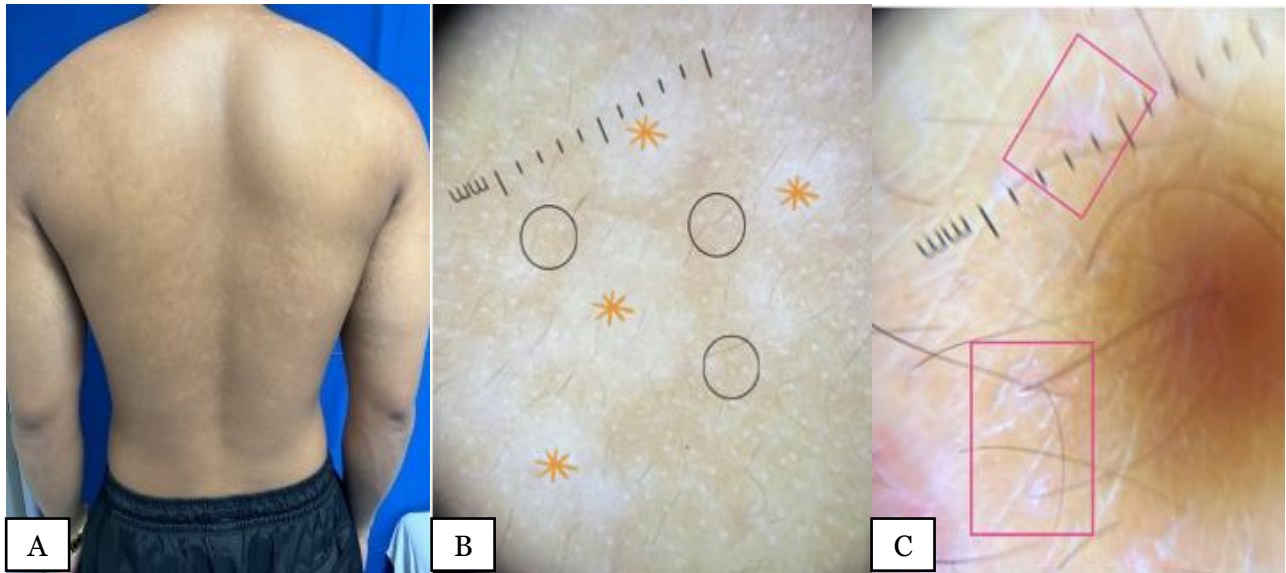


Figure 3. (A) A 20-year-old male presenting with a 3-month history of multiple, ill-defined, irregularly shaped hypopigmented macules and patches on the back; (B) Dermoscopy under non-polarized light reveals hypopigmented blotches and a pigment network (orange asterisk) with adjacent white dots (black circle); (C) Fine white scales along skin creases observed under polarized light.

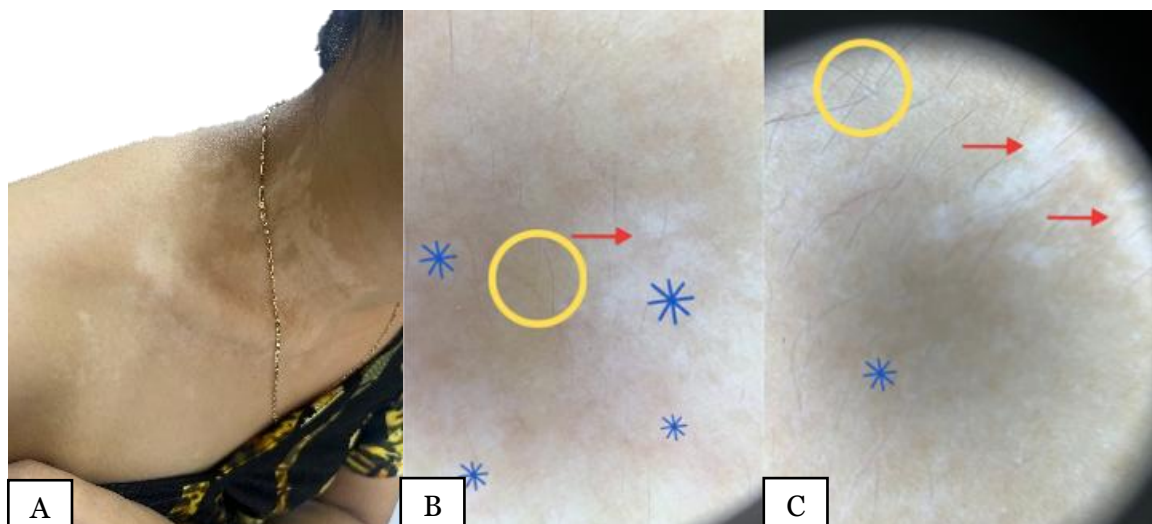


Figure 4. (A) A 20-year-old female with a 20-year history of hypopigmented, well-defined patches with irregular borders on the right neck; (B) (C) Dermoscopy (polarized light) showing hypopigmented patches with serrated borders (red arrow), loss of pigment networks (blue asterisk), and normal hair color (yellow circle).

Discussion

Hypomelanotic macular or patchy lesions are among the most common complaints in dermatology clinics. At the dermatology outpatient department of the Research Institute for Tropical Medicine, approximately 377 patients sought consultation for such lesions in 2023. These included 225 with pityriasis versicolor, 20 with pityriasis alba, 129 with vitiligo, and 3 with nevus depigmentosus. Several studies have documented the dermoscopic features of various hypomelanotic skin conditions, including idiopathic guttate hypomelanosis, pityriasis versicolor, vitiligo, nevus depigmentosus, pityriasis alba, and lichen sclerosus [3,5,8,9]. However, a more comprehensive synthesis of these findings is warranted, and standardized data reporting would be valuable for future reference. This study demonstrated that hypomelanotic macular diseases exhibit distinct dermoscopic patterns, enhancing diagnostic accuracy and facilitating differentiation between clinically similar conditions. While largely consistent with existing literature, these findings also provide additional insights relevant to local dermatologists.

The key dermoscopic features of vitiligo include a diffuse depigmented white glow, perifollicular pigmentary changes, perilesional hyperpigmentation, leukotrichia, and altered pigment networks [3]. Additionally, dermoscopic features provide valuable parameters for evaluating disease activity and can aid in distinguishing between stable and progressive forms of vitiligo. Among these, perifollicular depigmentation (PFD) is typically associated with stable disease, whereas perifollicular pigmentation (PFP) suggests active disease. Additional dermoscopic findings such as starburst patterns, comet-tail appearance, and the “tapioca sago” sign are indicators of progressive vitiligo [10]. Several studies have confirmed the diagnostic utility of dermoscopy in vitiligo, demonstrating consistent findings of

PFD, trichrome patterns, and reverse pigmentary networks [10,11].

Our results align with previous reports, showing frequent PFD, diffuse depigmented white glow, and trichrome patterns, which are indicative of stable vitiligo. Some patients also exhibited PFP, increased perilesional pigmentation, and white pigment networks, which may suggest progressive disease. Additionally, all patients presented with lesions that had well-defined borders, which also indicate stable vitiligo consistent with established diagnostic criteria [11].

Pityriasis versicolor is a superficial mycosis caused by the lipophilic fungus *Malassezia* [11]. Clinically, it presents as hyperpigmented, hypopigmented, or erythematous round-to-oval macules and patches with fine scaling, most commonly affecting the upper chest, back, upper arms, neck, and face. The most frequently reported dermoscopic feature is an altered pigmentary network, followed by scaling. Mathur et al. similarly found non-uniform pigmentation to be the predominant dermoscopic finding [12]. Other notable dermoscopic features include folliculocentric patterns, contrast halo rings around altered pigmentation, and yeast invasion of hair follicles [3]. Anecdotal findings such as patchy scaling, inconspicuous ridges and furrows, and perilesional hyperpigmentation have also been described [12]. In another study, a disrupted or non-uniform pigment network, often folliculocentric, was reported in approximately 67% of pityriasis versicolor cases, while scaling was observed in 83% [13].

In this study, patients with pityriasis versicolor demonstrated similar findings. The most common dermoscopic features were ill-defined hypopigmented macules, patches, and globules with fine scales. Disrupted pigment networks, white dots, globules, and blotches, as well as fine scaling along skin creases, were also observed. According to Kaur et al., these hypopigmented networks seen on dermoscopy

result from the presence of *Malassezia* fungus in the skin, which produces aberrant melanosome granules that impair melanin transfer to keratinocytes. Furthermore, it has been proposed that *Malassezia* releases dicarboxylic acids, similar to azelaic acid, which inhibit tyrosinase activity and induce cytotoxic damage to melanocytes [13]. The altered pigmentary network observed in pityriasis versicolor is also likely attributable to a reduction in melanocyte quantity, as supported by histopathological findings [14].

Satellite lesions, characterized by adjacent white dots and globules near ill-defined hypopigmented blotches [3], were also observed in several patients. In one cross-sectional study, 85% of pityriasis versicolor cases exhibited satellite lesions, highlighting their usefulness as a distinguishing feature from other hypomelanotic disorders. Several patients in this study also demonstrated fine scaling, particularly along skin creases. Histopathologically, this scaling corresponds to hyperkeratosis of the stratum corneum [14]. Clinically, the fine scales may result from scratching, causing detached scales within skin creases to split into two layers, a phenomenon described as “double-edged” scaling [11].

Pityriasis alba is a benign skin condition that primarily affects preadolescent children and is strongly associated with atopy, reported in up to 85% of cases. It commonly affects the head and neck, presenting as hypopigmented macules or patches, typically diagnosed based on clinical findings. The most frequently reported dermoscopic feature is ill-defined hypopigmented macules with fine scales [3]. These findings are consistent with the present study, in which most patients exhibited ill-defined borders, hypopigmented macules and patches with fine scaling, and normal hair color without evidence of perifollicular pigmentation.

Because of the absence of a sharp margin separating hypopigmented lesions from the

surrounding skin, some individuals may present with hypopigmented to erythematous macules, as well as hypopigmented macules and globules, as observed in this study. Histologically, acanthosis and reduced melanin within the epidermis contribute to the appearance of white structureless areas, while hyperkeratosis and parakeratosis account for the fine scaling commonly observed in these lesions [9].

Nevus depigmentosus is a skin disorder caused by defective transfer of melanosomes to keratinocytes [11]. On dermoscopy, it typically demonstrates a faint, uniform reticular pigment network with irregular, serrated borders and an absence of a diffuse white glow, features that distinguish it from vitiligo [3,15-17]. The sole patient diagnosed with nevus depigmentosus in this study exhibited similar findings, showing a faint reticular hypopigmented network with a serrated margin, suggesting residual melanin within melanocytes. This observation is consistent with Ankad and Shah, who reported that the presence of melanocytes reinforces the concept that melanin transfer to keratinocytes is defective in nevus depigmentosus [18]. Histopathologic findings indicate that melanocytes are preserved, but melanin content is reduced, as evidenced by normal to slightly decreased melanocyte counts on S-100 staining, decreased reactivity with the 3,4-dihydroxyphenylalanine reaction, and absence of melanin incontinence [19].

A key limitation of this study is the small sample size and the uneven distribution of cases across different types of hypomelanotic macular diseases, which may limit the generalizability of the findings. Future studies should include larger, more representative cohorts to better capture the spectrum of hypomelanotic diseases in the Philippines. Additionally, multicenter studies across diverse regions and populations would further strengthen the robustness and external validity of the results.

Conclusion

This study reinforces existing literature supporting the utility of dermoscopy as an adjunctive tool in the evaluation of hypomelanotic macular diseases. Dermoscopy improves diagnostic accuracy and may reduce the need for invasive procedures in selected cases; however, it cannot replace histopathological confirmation when a definitive diagnosis is required. Its role is particularly valuable in resource-limited settings, such as rural areas where access to biopsy facilities may be restricted.

The integration of basic dermoscopy training into routine clinical practice has the potential to significantly enhance the early and accurate diagnosis of hypomelanotic macular diseases. When combined with thorough history-taking and physical examination, dermoscopy increases clinical confidence, especially in cases with early, subtle, or atypical presentations. Moving forward, incorporating dermoscopy into dermatology training programs and encouraging its application at the primary care level may help reduce diagnostic delays and improve patient outcomes, particularly in underserved and resource-limited regions.

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Potential Conflict of Interest

The authors declare no potential conflicts of interest.

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