



Tinea Versicolor Disguised as Pityriasis Alba: How to Deal with Confusing Skin Hypopigmentation

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Abstract:

Tinea versicolor is a skin disorder that is due to an overgrowth of the saprophytic fungi *Malassezia sp.* It causes lighter or darker patches on the skin. Several skin diseases must be considered in the differential diagnosis of hypopigmented skin patches (vitiligo, Bier's spots, pityriasis rotunda, Pityriasis alba).

Pityriasis alba and tinea versicolor may look similar, but their causes differ. Pityriasis alba's red, scaly patches stem from factors like UV, wind exposure, bathing habits, and low copper levels, unlike tinea versicolor's fungal origin.

A 8-year-old presented hypopigmented small spots on the right cheek. Regular sun exposure and the small size of the lesions on the face resulted in an initial misdiagnosis of pityriasis alba. Finally, confirmative diagnosis of tinea versicolor was supported by the clinical appearance of lesions (hypopigmented, scaly macules), on the presence of greenish-yellow fluorescence under Wood's lamp, and on direct microscopic examination of scales.

This case highlights the importance of carefully examining and investigating hypopigmented lesions, particularly when they present with features suggestive of both pityriasis alba and tinea versicolor. While some clinical characteristics, such as location and size, may offer initial clues, relying solely on these factors can lead to misdiagnosis. The similarity of the two skin conditions requires a Wood's lamp test and confirmatory mycological diagnosis.

Key words: Tinea Versicolor, Pityriasis Alba, Hypochromic Patches, Hypo-Pigmented Macules, Skin Disorders, Fungal Diseases, *Malassezia*



Introduction:

Tinea versicolor is a common non-invasive skin fungal disease^{1,2}. The incidence of this condition is higher in tropical regions with warm temperatures and high humidity^{3,4,5}.

Pityriasis alba presents as circular or oval, pink or red spots that fade to lighter than usual skin. The spots themselves are often raised and may be scaly⁶, this condition is widely associated to atopic dermatitis.

Pityriasis alba is due to different reasons such as ultraviolet radiation, excessive or inadequate bathing, low level of serum copper.

The presence of greenish-yellow fluorescence under Wood's lamp would strongly favor tinea versicolor, while a negative result, coupled with a negative mycological direct examination, solidifies the diagnosis of pityriasis alba.

Unfortunately, tinea versicolor has a high recurrence rate, which characteristically demonstrates multiple round to oval macules, patches, or plaques that vary in color (hence the name, versicolor), ranging from hypopigmented to a hyperpigmented red, blue, pink, or grey. Lesions may have peripheral scaling and pruritis².

This case highlights the importance of mycological examination coupled with prior knowledge of hypochromic skin lesions.

Case report:

A 8-year-old boy presented with multiple hypopigmented patches over his cheek, the lesions were asymptomatic and were accentuated with sun exposure.

On physical examination, small in size, rounded, with little confluence, ranging approximatively from few millimeters to 1.5 cm of diameter. The lesions were slightly scaly, and distributed laterally on the right cheek (Figure 1).

The initial diagnosis was pityriasis alba, based on the patient's medical history, the size and location of the patches.

To evaluate the color of the lesions, the patient was examined by Wood's light. Furthermore, stripping examination, revealed the presence of *Malassezia*

sp by showing typical meat ball aspect (Figure 2), we concluded that the patient presented a Tinea versicolor which had been considered as a case of pityriasis alba erroneously. Confirmative diagnosis was finally based on the clinical appearance of lesions (hypopigmented, scaly macules), on Wood's lamp color, and on direct microscopic examination of scales.

The patient was started on oral fluconazole which led to rapid resolution of this dermatitis.



Figure 1. Small, rounded hypopigmented macules situated on the right cheek



Figure 2. tape stripping examination revealing *Malassezia* sp yeasts with characteristic “meat-ball” aspect

Discussion:

Pityriasis alba and tinea versicolor, two separate skin disorders, share a common feature: they both

cause skin patches that eventually become lighter (hypopigmented). However, their age preferences differ. Pityriasis alba primarily targets children, while tinea versicolor doesn't have an age bias, affecting both teenagers and adults ^{2,7,8,9}.

Head and neck mycoses are frequent and usually conditioned by climate, environment, and both patient's profession and immune status ^{2,10}. Pityriasis versicolor is significantly more common in tropical and subtropical climates.

Malassezia genus consists of 17 yeast species, which are natural lipophilic residents of human skin, but they can sometimes overgrow and cause various skin conditions. The physiopathology of this condition can be provoked by:

- Increased Sebum Production

Oily skin naturally produces more sebum, which Malassezia feeds on. In addition, hot and humid environments can stimulate sebum production, creating a favorable environment for Malassezia growth.

Hormonal changes, like those during puberty or pregnancy, can also increase sebum levels ^{2,7,8,9}.

- Weakened Immune System

Individuals with compromised immune systems, due to illness, medication, or stress, are more susceptible to Malassezia overgrowth. Skin conditions like eczema can disrupt the skin barrier,

making it easier for Malassezia to penetrate and thrive ^{7,8,9}.

- Occlusion and Moisture

Wearing tight-fitting clothing or using occlusive ointments can trap sweat and create a warm, moist environment that Malassezia loves. Excessive sweating, especially in areas like the scalp, back, and chest, can also contribute to moisture buildup and Malassezia proliferation ^{7,8,9}.

- Nutritional Deficiencies

Deficiencies in certain vitamins, like B vitamins and zinc, can impair skin health and potentially contribute to Malassezia overgrowth ^{2,7,8,9,10,11}.

- Genetics

Some individuals may have a genetic predisposition to increased Malassezia colonization or susceptibility to Malassezia-related skin conditions ^{7,8,9}.

Malassezia's fatty dependence explains their distribution on seborrheic skin areas (face, scalp, thorax) ¹².

There are a number of differential diagnoses for hypopigmentation, including tinea versicolor, pityriasis alba, vitiligo, seborrheic dermatitis, secondary syphilis, pityriasis rosea, mycosis fungoides, leprosy, sarcoidosis, and pityriasis rubra pilaris ^{13,14,15}.

Table 1. Hypopigmented skin diseases descriptions

Skin diseases	Disease characteristics	Disease etiology	Lesion characteristics	References
Albinism	Develops between the ages of 0 and 30	Autosomal recessive inheritance	Eyes sensitive to light, nystagmus Depigmentation of the hair and the skin	[16]
Piebaldism	Diagnosed at birth or later	Autosomal dominant inheritance	The white hair and patches are completely formed at birth and do not expand thereafter	[17]
Hypomelanosis ito	Diagnosed at birth or few years later	chromosomal defects	Ophtalmological and neurological Hypopigmented streaks and whorls, involving more than 2 body segment	[16]

Idiopathic guttate melanosis	skin of older, fair-skinned individuals	Skin's aging process	Scaly or rough patches ranging in size from 2 to 5 mm, Usually found on the trunk, upper arms, and legs	[16,18]
Bier's spots	develops between the ages of 20 and 40	Vascular cause	spots are small, irregularly shaped macules, that are usually found on the arms and legs. The macules disappear when the limb is elevated.	[16,19]
Pityriasis alba	develops between the ages of 5 and 16	Atopic dermatitis Copper deficit	Pink or red spots in circle or oval shape that fade to lighter than usual skin The patches themselves are often raised and may be scaly	[6]
Tinea versicolor	Mainly among children and young adult	Fungal cause	hypopigmented or hyperpigmented scaly macules on face, thorax, back and extremities	[16,2]
Cutaneous leishmaniasis	Mainly among children and young adult	<i>Leishmania donovani</i> inoculation	Seen mainly in the Indian subcontinent and East Africa Combination of hypopigmented patches and papulonodular lesions	[16]
Pityriasis rotunda	Occurs between the ages of 20 and 45	Associated with chronic diseases and malignancies	circular, hypopigmented or hyperpigmented, slightly scaly patches	[20]
Propionibacterium acne	Mainly among young adult	Bacterial cause	Progressive macular hypomelanosis is a frequent cause of lighter skin patches on the torso, mainly seen in young adults, particularly women	[21]
Leprosy	Skin and peripheral disease of tropic and subtropic areas	<i>Mycobacterium leprae</i> cause	Rarely seen in children, solitary or few patches, evolving into tuberculoid lesions	[16]
Leukoderma syphiliticum	Sexually transmitted infection	<i>Treponema pallidum</i> cause	The cervical lesions are by far the preferred sites, macules favors the upper extremities and hands	[16,22]
Vitiligo	Mainly among young adult	Autoimmune cause	White-milky patches with convex border without signs of inflammation, ranging from few mm to few cm	[16]

Sarcoidosis	Frequent in young adults. Involvement of other organs (eye, liver, heart)	Autoimmune cause	Usually, macules are red-brown involving the face, the periorbital areas	[16]
Mycosis fungoides	occurs between the ages of 55 and 60	Neoplastic cause	Presence of hypopigmented macules mainly distributed on trunk and proximal part of extremities, along with lower limbs	[23,24]

The pathogenesis of the dyspigmentation is not well understood. Damage to melanocytes, inhibition of monophenol monooxygenase, or both may provide the basis for the hypopigmented lesions, whereas inflammatory stimulation of melanocytes may lead to hyperpigmented lesions^{25,26}. Moreover, there seems to be a relation between the presence of *Propionibacterium acnes* and the hypopigmented macules. Seemingly interfering with melanogenesis²¹.

Numerous hypopigmented patches on the arms and trunk can be compatibles with mycosis fungoides in elderly^{13,27,28}. On the other hand, pityriasis alba should be considered among children, this condition is characterized by hypopigmented patches that usually affect the face.

Skin hypopigmentation can be due to inherited conditions (Ash leaf spots in tuberous sclerosis), normal aging, environmental factors (cumulative sun exposure and microtrauma)¹⁶, nutritional deficiencies such as Kwashiorkor (protein malnutrition condition), copper and iron deficiency vitamin B12 deficiency. Besides inflammatory causes such as vascular diseases, Bier's spots, Pityriasis alba, post viral exanthema, skin procedures (cryotherapy, dermabrasion), cosmetic inflammation, skin bleaching agents (hydroquinone), and burns. Furthermore, skin malignancies like mycosis fungoides rarely has hypopigmented macules^{23,24,16,29,16,19,30-33}, the different causes of skin hypopigmentation lesions are depicted in the table 1.

The excessive-use of corticosteroid when treating eczema may induce pityriasis alba. In addition to other factors, nutritional deficiencies (copper),

xerosis, sun exposure, wind, and soap are also frequently incriminated³⁴.

Histologic assessment is suggesting that the state of hydration of the stratum corneum in pityriasis alba is lower than that of healthy skin³⁵. The key difference between pityriasis alba and tinea versicolor is that pityriasis alba causes red, scaly patches on the skin.

Pityriasis alba typically does not exhibit fluorescence or any other significant change under a Wood's lamp, this is a key factor that can help differentiate it from other skin conditions, particularly tinea versicolor, which often shows a characteristic yellow-green fluorescence under the same lamp².

Finally, the tape stripping method offers a simple and rapid diagnostic tool. This technique captures layer of cells and debris using a transparent adhesive tape. The presence of characteristic "meat ball" structures, known as *Malassezia* yeasts, confirms the diagnosis of tinea versicolor^{2,36}.

Conclusion:

This case highlights the importance of carefully examining and investigating hypopigmented lesions, particularly when they present with features suggestive of both pityriasis alba and tinea versicolor. While some clinical characteristics, such as location and size, may offer initial clues, relying solely on these factors can lead to misdiagnosis. This is particularly true when dealing with atypical presentations or lesions appearing in uncommon areas.

The inclusion of both Wood's lamp examination and mycological testing in the diagnostic workup proved invaluable in differentiating between these two entities.

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