



CASE SERIES

Burrowing Bug Induced Acral Pigmentation Mimicking Melanocytic Lesions: A Case Series

Thangaraj Mridula, Gautam Sukesh, CRV Narasimhalu

Abstract

Cydnidae pigmentation (CP), also known as burrowing bug pigmentation, is a transient exogenous dermatosis caused by contact with *Chilocorisassmuthi*. It manifests as sudden onset of pigmented macules usually on acral sites that clinically resembles melanocytic lesions. We report a case series of seven patients with CP from different age groups. To our knowledge, it is a rarely reported condition, with fewer than 40 cases published in the literature to date, including the current series.

Key Words

Cydnidae, Burrowing Bug, Acral Pigmentation, Dermoscopy

Introduction

Cydnidae pigmentation (CP) or burrowing bug pigmentation is a transient dermatosis caused by contact with bugs belonging to Cydnidae family, which commonly occurs during monsoon season. The soil-dwelling insects produce odorous, hydrocarbon-rich secretion to defend themselves, which can lead to the sudden appearance of asymptomatic brown to reddish-brown macules on human skin.^[1,2] The lesions typically occur over acral or exposed areas, which cannot be washed with soap or alcohol and resolves spontaneously within one to two weeks.^[3] CP can be mistaken for acral melanocytic lesions which leads to diagnostic confusion, even though it is a benign and self-limiting condition. Dermoscopy is a valuable non-invasive tool that can be used to distinguish CP from melanocytic disorders. It is important to know about this condition to prevent misdiagnosis, unnecessary biopsy and patient anxiety.

Case Report

In this study, we report a case series of seven patients with CP in paediatric, adolescent and adult age groups

(Table 1 and Figure 1), highlighting the consistent dermoscopic patterns and the benign natural course of the condition.

Dermoscopy in representative patients showed linear brown pigmentation aligned with dermatoglyphics, multiple clods and globules with a superficial “stuck-on” appearance, and accentuated pigment around sweat pores. (Figure 2) These findings corroborate previous reports in the literature^[4,5] and help differentiate CP from melanocytic and vascular lesions. All patients experienced spontaneous resolution within one to two weeks.

Discussion

Cydnidae pigmentation, also known as burrowing bug pigmentation, is a novel and underreported arthropod-induced dermatosis first described by Malhotra *et al.* in 2015. This condition results from contact with odorous secretions produced by *Chilocorisassmuthi*, a species belonging to the family Cydnidae, order Hemiptera, and suborder Heteroptera. The hydrocarbon-rich secretions released from specialised glands located in the thorax of

Department of Dermatology, Saveetha Medical College and Hospital, SIMATS, Saveetha University, Thandalam, Chennai, Tamil Nadu, India.

Correspondence to: Dr. Mridula Thangaraj, Postgraduate, Department of Dermatology, Saveetha Medical College and Hospital, SIMATS, Saveetha University, Thandalam, Chennai, Tamil Nadu, India.

Manuscript Received: 12.02.2026; Revision Accepted: 15.04.2026;

Published Online First: 10th July, 2026

Open Access at: <https://journal.jkscience.org>

Copyright: © 2026 JK Science. This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-Share Alike 4.0 International License, which allows others to remix, transform, and build upon the work, and to copy and redistribute the material in any medium or format non-commercially, provided the original author(s) and source are credited and the new creations are distributed under the same license.

Cite this article as: Mridula T, Sukesh G, Narasimhalu CRV. Burrowing Bug Induced Acral Pigmentation Mimicking Melanocytic Lesions: A Case Series. JK Science 2026;28(3):182-5.

**Table 1: Clinical characteristics of patients with sudden-onset pigmented macules.**

Case	Age (Years)/ Sex	Sites Involved	Clinical Presentation	Relevant History	Dermoscopy	Management	Figure
1	1/ M	Thighs, gluteal region, soles	Multiple asymptomatic brown macules, non-removable with soap	Outdoor activity during monsoon	Not done	No intervention, Reassurance	1A1, 1A2
2	25/ F	Bilateral soles	Asymptomatic brown macules, non-removable with soap/ alcohol	Outdoor activity during monsoon	Done	Reassurance	1B
3	16/ M	Right sole, left palm	Sudden onset asymptomatic brown macules	Nil	Done	Reassurance	1C
4	32/ M	Right sole	Solitary asymptomatic pigmented macule, resistant to washing	Outdoor activity during monsoon	Done	Reassurance	1D
5	6/ M	Left sole	Multiple sudden onset brown macules, resistant to washing	Outdoor activity during monsoon	Not done	Reassurance	1E
6	21/ M	Right sole	Multiple discrete asymptomatic brown macules	Nil	Done	Reassurance	1F
7	23/ F	Right sole	Solitary asymptomatic brown macule	Temple visit during winter	Done	Reassurance	1G



Figure 1: Well-defined brown macules of varying size and shape.



Figure 2: Dermoscopy shows dark brown linear pigmentation along dermatoglyphics with feathering (black arrow) and light brown pigmentation interspersed between the lines (blue arrow). (10x non-polarized heine delta 30 dermoscope)

adult insects and the abdomen of nymphs serve multiple biological functions, including self-defence, prey paralysis, mate attraction, and antimicrobial activity.^[1-3]

Pigmentation results from direct contact with these secretions, either from accidental crushing of the insects or from pressure applied to them. The hydrocarbon compounds accumulate in skin furrows and dermatoglyphics, forming characteristic pigmented

macules that darken over the first few days before gradually fading. This transient nature, typically lasting 10-15 days, distinguishes Cydnidae pigmentation from other pigmentary disorders.^[4,5]

Agrawal and Sharma's recent dermoscopic case series of five patients (2024) demonstrated the condition's predilection for exposed body areas, with all cases presenting with sudden-onset, asymptomatic, dark brown-to-black, irregularly shaped macules, consistent with our study. The documented age range is quite broad as there are cases from a 6-month-old infant reported by Soundarya *et al.* in 2022 to middle-aged adults, which suggests no specific age predilection.^[6,7]

Gender distribution shows no clear bias, with cases reported in both males and females. There are few occupational associations with agricultural workers and those involved in outdoor activities are most commonly affected. The incidence is predominantly during monsoon seasons, when Cydnidae insects proliferate in vegetation-rich areas as well as in human dwellings, especially in the rural and semi-urban areas. In our series, five patients reported outdoor activity during the monsoon and winter seasons, further supporting the environmental and seasonal influence on disease occurrence. However, the actual prevalence may be underestimated due to the condition's transient nature and lack of awareness among healthcare providers.^[1,8]

Although early reports suggested a predilection for acral sites, recent case reports have documented involvement of diverse anatomical sites. The morphological spectrum has expanded beyond the initially described palmoplantar macules, ranging from discrete oval macules to bizarre streaky patterns, ink-splatter appearances along dermatoglyphics, and clustered configurations. The size varies from 2-4 mm discrete macules to larger confluent areas of pigmentation.

Dermoscopy has emerged as a crucial diagnostic tool for Cydnidae pigmentation, with several recent studies characterising specific features. Sonthalia's pioneering 2019 dermoscopic description established the baseline features as "oval to bizarre-shaped shiny brown globules, clods, and granules with a superficial stuck-on appearance".^[1]

Agrawal and Sharma's 2024 case study identified additional features, including clusters of brownish globules with pigmentation around sweat pores and linear pigmentation along dermatoglyphics. Pol *et al.* described superficial black clods and clusters with intact dermatoglyphics and streaky patterns, emphasising the



“stuck-on” appearance. The dermoscopic features reported in recent literature include homogeneous brown-black pigmentation, frayed parallel furrows, rhomboidal pigment accentuation patterns, feathery margins, and blackish-orange follicular openings.^[7,9]

Dhiman *et al.*'s 2023 report of an 18-year-old female, in whom the sudden appearance and bizarre distribution of lesions initially mimicked dermatitis artefacta. This further emphasises the importance of distinguishing this condition from more serious pathologies, including acral lentiginous melanoma, junctional melanocytic nevi, Peutz-Jeghers syndrome, Laugier-Hunziker syndrome, and tinea nigra.^[10]

Key diagnostic clues in such a difficult scenario include sudden onset during the monsoon season, a history of outdoor activities, clustering of cases in specific geographical areas, involvement of exposed body parts, resistance to removal with soap and water, and characteristic dermoscopic features. Some reports note variability in the classic acetone test, with recent cases showing resistance to acetone removal, suggesting potential variations in the chemical composition of secretions or individual factors affecting pigment adherence.^[9]

No specific therapeutic interventions have been documented in the recent literature, and all reported cases have shown complete resolution without residual changes. Since the condition is self-limiting, treatment is usually not required. However, few reports suggest application of acetone may hasten pigment removal but this effect is not consistently seen. Patients have to be counselled about the benign nature of the condition, the time expected for resolution, and preventive measures like wearing protective clothing during outdoor activities in monsoon season.^[9,10]

The disparity in dermoscopic characteristics as well as in the reaction to acetone testing indicates that there could be a difference in the causative species or secretion composition, thus further entomological and biochemical

studies are needed. Additionally, the long-term outcomes and the possibility of recurrence in affected individuals require longitudinal follow-up studies.^[9]

Conclusion

From a clinical perspective, increased awareness among doctors, particularly in endemic regions, is crucial to prevent misdiagnosis and unnecessary investigations.

Financial Support and Sponsorship : Nil
Conflict of Interest: Nil

References

1. Sonthalia S. Dermoscopy of Cydnidae Pigmentation: A Novel Disorder of Pigmentation. *Dermatol Pract Concept*. 2019 ;9(3):228–9.
2. Agarwal R, Srinivas SM, Chandrashekar BS. Asymptomatic freckle-like hyperpigmentation of the palms: A rare pigmentation caused by cydnidae (burrowing bug). *Indian J Paediatr Dermatol*. 2019 ;20(4):353–4.
3. Malhotra AK, Lis JA, Ramam M. Cydnidae (burrowing bug) pigmentation: a novel arthropod dermatosis. *JAMA Dermatol*. 2015 ;151(2):232–3.
4. Kumar BS, Savitha AS. Cydnidae pigmentation “ dermoscopic features. *Pigment Int*. 2021 ;8(2):115–6.
5. Relhan V, Hegde P. Atypical Cases of Cydnidae Pigmentation: Digging Deeper Through Dermoscope. *Indian J Paediatr Dermatol*. 2021 ;22(4):356–9.
6. S S, Sabapathi V, Thomas J. Cydnidae (burrowing bug) pigmentation in a 6-month-old baby. *Eur J Pediatr Dermatol*. 2022 ;32(4):242–4.
7. Agarwal S, Sharma S. Cydnidae Pigmentation: A dermoscopic case series. *Clin Dermatol Rev* 2024;8:240–2.
8. Chakraborty S, Sil A, Panigrahi A. Burrowing bug pigmentation. *Infection*. 2021 ;49(6):1363–4.
9. Arif T. Recurrent asymptomatic reddish-brown pigmented macules on the palms. *Our Dermatol Online*. 2024 ;15(3):320–2.
10. Dhiman A, Chauhan P, Daroach M. Cydnidae bug pigmentation mimicking dermatitis artefacta. *Indian J Dermatol Venereol Leprol*. 2023 ;90(1):136–136.