

CYDNIDAE PIGMENTATION: A NOVEL CASE STUDY IN PAKISTAN

Dr. Shumaila Tahir¹, Dr. Syeda Anjala Tahir², Dr. Rabia Ghafoor³, Dr. Sana Kaleem⁴

¹MBBS (DUHS), Candidate FCPS-II (Medicine) Women Medical Officer, Health Department, District East, Karachi

²FCPS (Medicine), MBBS (Dow) Consultant Physician Medicine, Dr. Ruth KM Pfau Civil Hospital, Karachi

³MBBS, FCPS, SCE Derma, MRCP (UK) Professor, Dermatology (Head of the Department) JPMC/JSMU

⁴MBBS, Candidate FCPS-II (Dermatology) Women Medical Officer, Health Department, District East, Karachi

¹shumaila_duhs@yahoo.com, ²anjala_tahir@yahoo.com, ³dr.rabiaghafoor@hotmail.com,
⁴sana.dec04@hotmail.com

DOI: <https://doi.org/10.5281/zenodo.19731848>

Keywords

Article History

Received: 22 February 2026

Accepted: 03 April 2026

Published: 24 April 2026

Copyright @Author

Corresponding Author: *

Dr. Shumaila Tahir

Abstract

Insects, though tiny creatures, are considered harmless but are also known causative agents in a vast variety of diseases, especially skin disorders. We present one of the cases reported in Pakistan caused by the burrowing bug in an old-age male. He had a history of a trip to Iraq and observed his skin changes when he landed back in Pakistan. A detailed examination and investigation were done to reach the diagnosis of Cydnidae Pigmentation (CP) by excluding important differentials like acral lentiginous melanoma, dysplastic melanocytic nevus, pigmented basal cell carcinoma, and lichen planus.

INTRODUCTION



Case Presentation

An 83-year-old male, married, Muslim, retired government officer, resident of Karachi, ex-smoker, and a known case of Diabetes Mellitus type II, presented with the complaint of asymptomatic skin discoloration on different parts of the body for 2 to 3 days. He noticed these changes just after he landed in Pakistan from a trip to Iraq in summer due to religious custom where he used to walk barefoot in different places.

On cutaneous examination, these were hyperpigmented dark brown to jet black macules distributed widely on different parts of the body, more evident on bilateral acral areas i.e., forearms, legs, palms, and soles. They were about 0.2–0.4 cm, few of which coalesced to form patches. Few discrete macules were also present on the abdomen, back, and neck. The interdigital spaces, nails, scalp, mucosal, and genital areas were spared. The lesions were not associated with any tenderness, numbness, purulent, or bloody discharge. All systemic examinations were unremarkable. All baseline investigations were within normal limits.

The same pattern of pigmented macular lesions was also observed in his son on the palms and soles, who also had a history of the same trip. These pigmentations were not washable with water, soap, or acetone. Punch biopsy for histopathology, immunofluorescence with Periodic Acid-Schiff (PAS) stain, Masson-Fontana, and Perl's stain were done to reach the diagnosis.

Within a week, as lesions grew older, they turned into a more uniform dark brown colour and over a period of 7 to 10 days, pigments gradually faded and consequently shed off slowly in scraps.

Discussion

Cydnidae bug, also known as burrowing bug, are Hemiptera arthropods that are found in soil of rural areas usually during monsoon months. They have a peculiar feature of digging and burrowing.¹ Cydnidae produce an odorous substance (hydrocarbonate) by special glands located in thorax and abdomen that work as a repellent and chemoattractant.² This substance is the cause of benign asymptomatic pigmentation at the site of insult on accidental crushing of insects.³

To the authors' knowledge, it is the first report of CP reported in Pakistan and the first to have histopathological findings which showed intact epidermis with brownish and black pigmented material in the stratum corneum with unremarkable underlying dermis. Pigment was negative for melanin on special stain (Masson-Fontana), PASD was negative for fungal elements, with no evidence of malignancy in the sections.

Our case is unique in a few perspectives as these pigmentations also involved the neck, abdomen, and back of the patient, which was not seen in previously reported cases. These lesions could not be rubbed out with water, soap, or acetone, and there was no association with the monsoon season.⁴ So, asymptomatic, brown to black hyperpigmented lesions more prominently on palms and soles, especially associated with outdoor activities with bare feet, that fade off within a week, and negative histopathology for important differentials – all these findings point towards burrowing bug pigmentation (Cydnidae) as reported in previous studies.^{5,6}

Conclusion

Cydnidae is not a common insect, but dermatologists should be aware of this newly found cause of exogenous benign pigmentation to avoid unnecessary investigations. Patients should be aware of the spontaneous resolving fate of the pigmentation without any harmful consequences.

Acknowledgements

We would like to acknowledge our sincere gratitude to Dr. Bahram Khan Khoso, (drbahramk@gmail.com) MD, Assistant Professor, Ex H.O.D Department Dermatology JPMC/ JSMU for the encouragement and constructive guidance throughout the study.

Thanks, Note

We extend our heartfelt thanks to the patient Dr. Farrukh Mirza (late) and his family for their cooperation and consent for the study and publication.

REFERENCES

- Batrani M, Kubba A, Ramam M. A curious case of vanishing pigmented spots resembling lentigines. *Indian J Dermatopathol Diagn Dermatol.* 2019;6:42-4.
- Hosokawa T, Kikuchi Y, Nikoh N, et al. Polyphyly of gut symbionts in stinkbugs of the family Cydnidae. *Appl Environ Microbiol.* 2012;78:4758-61.
- Malhotra AK, Lis JA, Ramam M. Cydnidae (burrowing bug) pigmentation: a novel arthropod dermatosis. *JAMA Dermatol.* 2015;151:232-3.
- Chakraborty S, Sil A, Panigrahi A. Burrowing bug pigmentation. *Infection.* 2020; [Epub ahead of print 11 Jul 2020]. doi:10.1007/s15010-020-01481-w.
- Garwal R, Srinivas S, Chandrashekar BS. Asymptomatic freckle-like hyperpigmentation of the palms: A rare pigmentation caused by cydnidae (burrowing bug). *Indian J Paediatr Dermatol.* 2019;20:353-4. doi:10.4103/ijpd.IJPD_41_19.
- Bhanja DB, Sil A, Chandra A, et al. Atypical presentation of burrowing bug pigmentation involving a non-acral site. *BMJ Case Reports CP.* 2021;14:e241792.

