

# “A tale of a burrowing bug” and Cydnidae pigmentation: A case report

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## ABSTRACT

Exposure to insects or to their remains may range in severity from benign or barely noticeable to life-threatening conditions. The morphology of the cutaneous lesions may vary from several-millimeter asymptomatic noninflammatory lesions to large irritant dermatitis lesions, depending on the severity and the insects involved. A 3-year-old child presented with asymptomatic brownish patches on the bilateral soles persistent for a day. The mother gave a history of a visit to a temple and the onset of the lesions after the visit. A detailed examination reached the diagnosis of Cydnidae pigmentation. One of the benign conditions caused by the “burrowing bug” is Cydnidae pigmentation. As the lesions usually involve the acral areas, it has to be differentiated from other pigmented conditions, such as acral melanomas, lentiginos, petechiae, and chemical/dye-induced pigmentations.

**Key words:** Cydnidae pigmentation; Chilocoris assmuthi; Burrowing bug

## INTRODUCTION

Human cutaneous disorders may result due to multiple causes, such as nutritional deficiencies, toxins, bacterial or fungal infections, exposure to insects, exposure to chemicals, pollution, and medications. Insects cause varied patterns of dermatologic problems but, usually, these are inflammatory skin lesions [1]. Cydnidae pigmentation is caused by *Chilocoris assmuthi*, which belongs to the Cydnidae family, to the Hemiptera order, and to the Heteroptera suborder, which is known as the burrowing bug, and which is uncommon in urban areas [2].

## CASE REPORT

An anxious, worried mother with a three-year-old son entered our dermatology outpatient department during the monsoon season with complaints of a sudden appearance of brownish patches on the bilateral soles of her son persistent for the last day. The lesions were asymptomatic in nature.

On clinical examination, multiple brown hyperpigmented macules and patches of varying sizes and shapes with streaky pigmentation in several places were present on the plantar aspect of both feet (more on the pressure-bearing sites). They were non-blanchable and non-tender, and the surrounding skin was normal (Fig. 1).

On further investigation, the mother gave a history of visiting a nearby temple and walking barefoot as a custom and of an appearance of these patches after the visit. An examination of the mother revealed similar pigmented lesions on the bilateral soles.

The mother and the child were informed of the benign nature of the condition and were reassured.

## DISCUSSION

Insects comprise the most diverse and numerous class of the animal kingdom, hence human contact with them is unavoidable [1]. They may cause skin damage in humans through mouthparts, fangs, stingers, etc.

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**Figure 1:** Multiple brownish hyperpigmented macules.

Hypersensitivity may develop against venoms or salivary proteins. Insects may also act as vectors for many infectious diseases [3]. Some of the skin disorders caused by arthropods include cimicosis (bed bug bite), pulicosis (flea infestation), pediculosis and Vagabond's disease (louse infestation), anaphylaxis (bee sting), burns due to the formic acid produced by Formicidae (ants), paederus dermatitis (blister beetle dermatitis), lepidopterism (caterpillar dermatitis), myiasis (maggot infestation), and Cydnidae pigmentation (due to Chilocoris).

The Cydnidae are one of the most speciose families within the Pentatomoidea superfamily and comprise more than 750 species [4]. Its representatives are usually known under the common name of *burrowing bugs* or *burrower bugs* due to their specific way of life, as many of them live in the soil (soil diggers) and feed on roots. Some are above the ground as plant-feeders and may also feed on seeds. They produce an odorous substance from special glands found in the thorax of adult insects, which is part of self-defense and is the cause of the pigmentation [5]. The pigmentation is not accompanied by any signs of inflammation, such as color, dolor, rubor, tumor, or functio laesa. The common site of pigmentation is the acral area, although other sites may sometimes be involved. The pigmentation usually fades away with acetone but not with soap and water [3]. The secretion is a mixture of hydrocarbonates and other derivatives, which functions as a repellent, may cause paralysis in the prey, and serves numerous other purposes, including danger signaling, helping in attracting mates, and, interestingly, exhibiting antimicrobial activity [6]. These insects are usually considered harmless.

In our case, the exogenous pigmentation caused by burrowing bugs was considered the most plausible diagnosis because of the similarities with the previously published cases [2,7,8]. The pigmentation due to these bugs is smaller (several millimeters) with streaky pigmentation and with tapering edges in several places [2]. Dermoscopy shows a cluster of oval to bizarre-shaped brown and shiny globules and clods with a superficial “stuck-on” appearance [3]. This may be differentiated from other causes of pigmentation, which may be due to other arthropods and coloring agents, by the involvement of a larger surface area. In cases of widespread lesions, one of the close differentials is petechiae secondary to dengue, which is also prevalent in the monsoon season. Cydnidae pigmentation may be differentiated from lentiginos by the eruptive nature of the lesions and disappearance within several days [8].

## CONCLUSION

This case of Cydnidae pigmentation is being published for its rarity. According to the authors' knowledge, this is the fourth case reported. Such pigmentation has to be differentiated from other causes, for instance, exogenous causes of pigmentation, lentiginos, acral melanoma, dermatosis neglecta, and postinflammatory hyperpigmentation. The clue to the diagnosis of this pigmentation is a detailed history of brownish, sudden-onset macules of several millimeters with streaky or tapering edges usually occurring in the monsoon season and resolving spontaneously within a week, as well as dermoscopy findings: a “stuck-on” appearance with oval to bizarre-shaped brown shiny globules and clods.

## Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

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