

Butterfly Sign in Scabies: Towards an Evolutionary Process?

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Key words: scabies, *Sarcoptes scabiei hominis*, dermoscopy, dermatoscopy, resistance

Citation: Oranges T, Pedaci FA, Filippeschi C. Butterfly sign in scabies: towards an evolutionary process? *Dermatol Pract Concept.* 2022;12(3):e2022098. DOI: <https://doi.org/10.5826/dpc.1203a98>

Accepted: October 25, 2021; **Published:** July 2022

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Funding: None.

Competing interests: None.

Authorship: All authors have contributed significantly to this publication.

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Introduction

Human scabies is a worldwide skin infestation caused by the mite *Sarcoptes scabiei hominis* and remains a significant public health concern. The detection of the mite is essential for diagnosis and entodermoscopy strongly improves diagnostic reliability. The mite is visible on dermoscopy at the head of the burrow, due to its refractile area located between the buccal apparatus and the second pair of legs. This sign is called “triangle” sign or “delta glider” sign, or “hang glider” sign (Figure 1A, asterisk) [1]. The “triangle” sign is usually accompanied by reflecting bubbles along the tunnel called “jet trail” sign on wet dermoscopy (Figure 1A, arrow) [1]. Other less frequently observed dermoscopic signs have been described and one of the most recently described feature is the “gray-edge line” sign, that it's due to the presence of mite feces containing melanin (Figure 1A, arrowhead) [1]. We present a new dermoscopic sign observed in 2 cases, in the era of progressive resistance of *Sarcoptes scabiei hominis* to standard treatments.

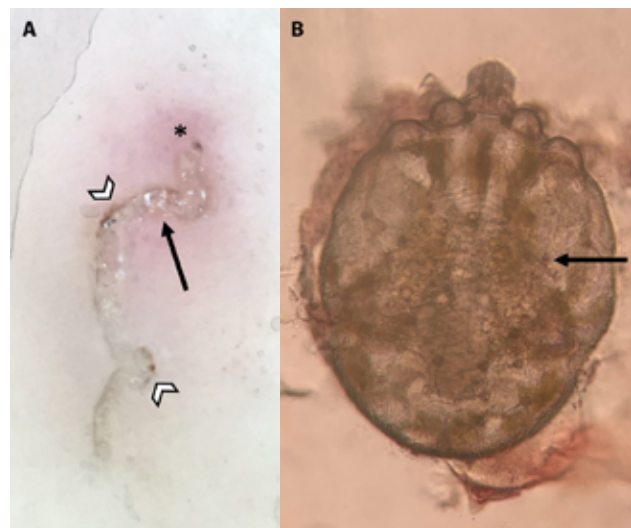


Figure 1. (A) Dermoscopy of a scabies burrow showing the “delta glider” sign (asterisk), reflective bubbles within the burrow referred to as “jet trail” sign (arrow) and blackish-gray lines at some points of the burrow walls consistent to the “gray-edge line” sign (arrowhead). (B) Microscopic examination of a *Sarcoptes scabiei hominis* with classical features: the gut area appears poorly demarcated and of the same color of the adjacent structures (arrow).

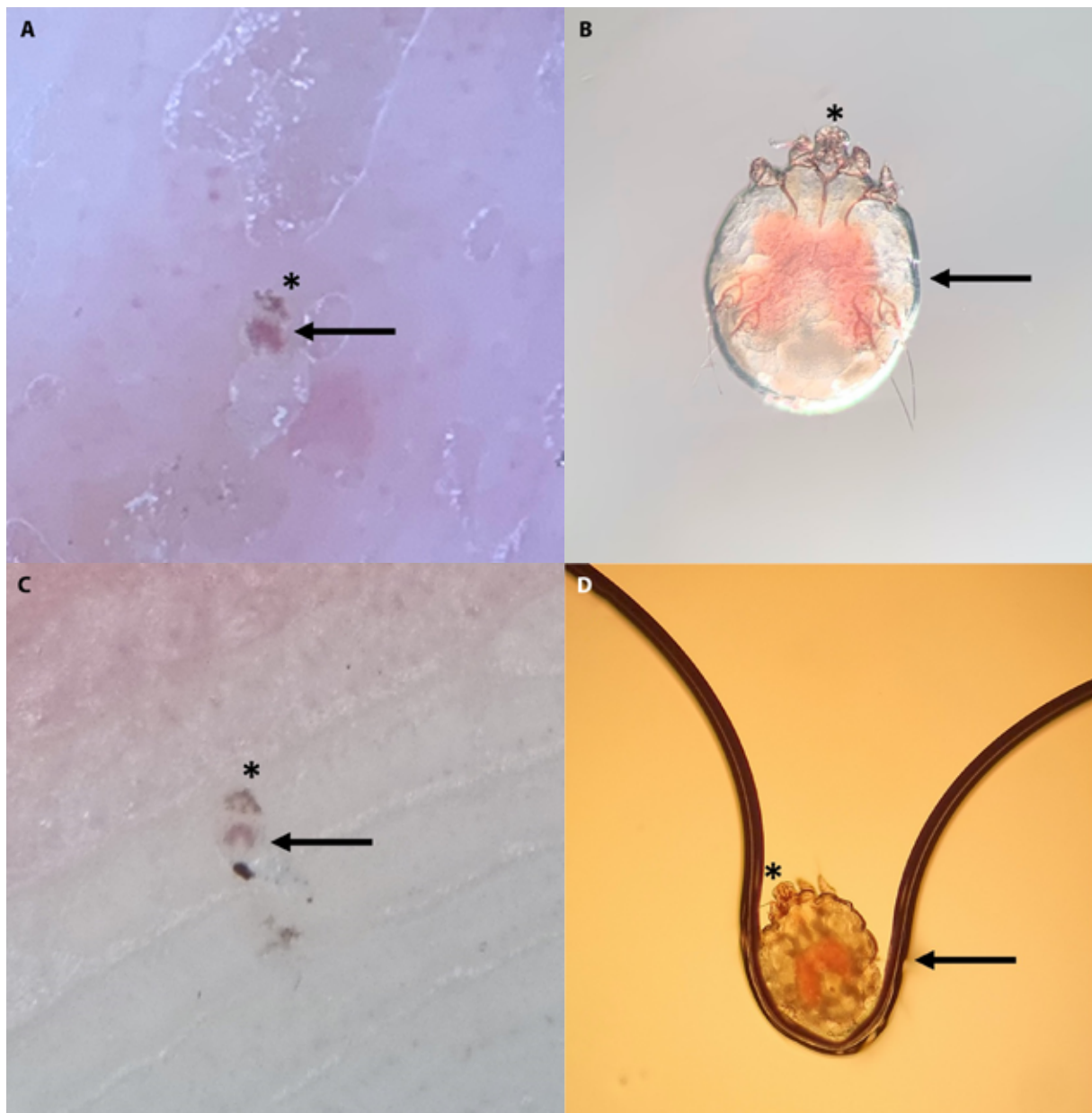


Figure 2. Dermoscopic evaluation of a scabies burrow of the 5-years old patient (A) and of the 10-years old patient (C) with the corresponding microscopic appearance of the scraped mites (B and D). (A-C) Both dermoscopic images show the “delta glider” sign (asterisks) and the presence, just below, of a reddish structure corresponding to the “butterfly” sign (arrows). (B-D) Microscopic features of the anterior part of the mite body (asterisks) and of the underlying gut area which appear well demarcated and reddish in color (arrows).

Case presentation

We observed 2 cases of young patients (a 10-year-old male and a 5-year-old male) referred to the dermatologic unit for scabies present for several months, treated with multiple cycles of permethrin 5% cream. Physical examination revealed persistent multiple mite burrows with classic dermoscopic image of “delta glider” sign (Figure 2, A-C, asterisk), corresponding to the anterior part of the mite (Figure 2, B-D, asterisk), associated with a new dermoscopic sign, which we called the “butterfly” sign, characterized by a butterfly-shaped reddish area just below the “delta glider”

sign (Figure 2, A-C, arrow). The microscopic examination of the scraped skin in correspondence to the burrow showed in both patients the presence of the mite with a well-defined butterfly-shaped gut area, with a reddish coloration resembling blood (Figure 2, B-D, arrow). Of note, the gut area of the *Sarcoptes scabiei hominis* mite is usually not so clearly visible under the microscope (Figure 1B, arrow).

Conclusions

Recently, several authors described the emerging phenomenon of resistance of mites to standard treatments, in particular

to permethrin, as in our cases [2]. Considering these recent evidences, this report suggests a new dermoscopic sign as a possible marker of *Sarcoptes scabiei hominis* evolution.

References

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