

## Tick Bite and Super-High Magnification Dermoscopy

Luca Di Bartolomeo<sup>1</sup>, Stefano Portuese<sup>1</sup>, Federico Vaccaro<sup>2</sup>,  
Francesco Borgia<sup>1</sup>, Mario Vaccaro<sup>1</sup>

<sup>1</sup> Department of Clinical and Experimental Medicine, Dermatology, University of Messina, Messina, Italy

<sup>2</sup> Department of Dermatology, University of Modena and Reggio Emilia, Modena, Italy

**Key words:** Super-High Magnification Dermoscopy, Tick Bite, Rostrum

**Citation:** Di Bartolomeo L, Portuese S, Vaccaro F, Borgia F, Vaccaro M. Tick Bite and Super-High Magnification Dermoscopy *Dermatol Pract Concept*. 2024;14(4):e2024217. DOI: <https://doi.org/10.5826/dpc.1404a217>

**Accepted:** June 24, 2024; **Published:** October 2024

**Copyright:** ©2024 Di Bartolomeo et al. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (BY-NC-4.0), <https://creativecommons.org/licenses/by-nc/4.0/>, which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.

**Funding:** None.

**Competing Interests:** None.

**Authorship:** All authors have contributed significantly to this publication.

**Corresponding Author:** Luca Di Bartolomeo, MD. Department of Clinical and Experimental Medicine, - Dermatology - University of Messina, Messina, Italy. Via C. Valeria, Gazzi. 98125 Messina, Italy. Tel. +39 3387171229. E-mail: [lucadibartolomeo@live.it](mailto:lucadibartolomeo@live.it)

### Case Presentation

Super-high magnification dermoscopy (SHMD) is the most recent advance in the field of dermoscopy and allows us to observe the skin up to ×400 magnification. We report a case of tick bite studied with SHMD. A 50-year-old woman reported the onset of a new mole on her breast (Figure 1A). Dermoscopy at 20x magnification (Medicam 1000, Foto-finder System, Bad Birnbach, Germany) revealed a tick attached to the skin (Figure 1B). After removing the tick, we used SHMD to study the tick type and its body components. We observed its dorsal partial scutum, demonstrating that the tick was a female belonging to Ixodidae family, and the

intact rostrum, thus proving the correct removal of tick (Figure 1, C and D at 200x and 400x magnification).

### Teaching Point

In the field of skin parasitoses, SHMD plays not only a role in diagnosis but also in evaluation of treatment efficacy [1]. Incomplete and unprofessional removal of ticks may increase risk of developing Lyme disease. The correct technique of tick removal includes the use of tweezers or hemostat, with which the physician should grasp the head of the tick and pull directly away from the skin, avoiding twisting or jerking movements [2]. SHMD is useful to evaluate elements that are not already



**Figure 1.** (A) Clinical and (B) dermoscopic view of a female tick belonging to Ixodidae family attached to patient's breast. (C) SHMD showed clearly the components of the ventral side of tick's body (200 x magnification): rostrum (R); genital pore (G); anus (A); two spiracle (S, air-breathing openings), and 4 pairs of limbs (L). (D) A close-up of the intact rostrum (400 x magnification).

clearly visible with traditional dermoscopy, such as signs of local superinfection or foreign body granuloma caused by incorrect removal of the tick. Moreover, the combination of traditional dermoscopy and SHMD is useful to study the tick's body components, which, in this case, belonged to Ixodidae family. In fact, the female ticks of this family show a hard shield that partially covers their dorsal surface. The Ixodidae are known as vectors for several infectious diseases and their recognition is essential for their prevention and treatment.

## References

1. Di Bartolomeo L, Argenziano G, Borgia F, Vaccaro F, Vaccaro M. Efficacy evaluation of scabies treatment through super high magnification dermoscopy. *Ital J Dermatol Venerol.* 2023;158(2):161-162. DOI: 10.23736/S2784-8671.22.07447-3. PMID: 37153952.
2. Benzoni T, Cooper JS. Tick Removal. 2023. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023. PMID: 28722885.