

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Internal Medicine Quiz – Case 24

In January 6th 2024, a female patient at her twenties felt an abrupt ardency followed by an intense pruritus on the right foot, during leisure time at indoor domestic environment. The dorsomedial skin of her right foot was the affected region; firstly, showing a small vesicle that was surrounded by light edema and hyperemia. A familiar physician was consulted and recommended the use of antihistamines besides topical corticosteroid, which promoted the gradual improvement of the skin changes within the period of a week, as shown in figure 1. She is currently asymptomatic, without the use of any treatment, but maintaining prevention.

Comment

The preventive measures include the physical barriers, insecticides, and repellents.¹⁻⁵ This short report aims to increase the interest on some key points related to the mosquito bites, that are estimated represent 95% of 12,076 insect bites or stings affecting 1,783 people.⁴ From more than 3,500 species or subspecies, only three bite humans transmitting malaria, and the equine encephalitis, Chikungunya, yellow fever, dengue, Zika, and West Nile virus.^{2,3,5} Mosquito-borne diseases affect 700 million people and cause a million deaths yearly,⁵ and some authors have called attention to the lack of reporting mosquito bites, making unknown the real incidence of the adverse events that tend to increase because of the global warming.² In such scenery, it seems opportune briefly comment on recent literature about the major issues associated with both local and general consequences of the mosquito bites in humans.

Except for Antarctica, in the whole world the mosquito is involved in the major number of the insect bites, and their salivary and somatic allergens can give origin either to local skin, or distant

allergic responses that may cause the respiratory and systemic manifestations. The mechanisms involved in mosquito allergy are not totally cleared, and further knowledge is needed to guide the prevention, diagnosis, and treatment including immunotherapy. Worthy of note, the histamine activation of mast cells (through IgE, or not) or the tryptase and leukotrienes pathways may be also involved; some individuals have a genetic predisposition, whereas patients with hematologic malignancy and HIV infection have severer manifestations.² The routine treatment for only mild symptoms of mosquito bites is based on antihistamines and a topical corticosteroid, but the more severe cases need the specialized hospital care. Recent studies have indicated the favorable role of concentrated heat to alleviate the intensity of local itching, which reduced 57% in one minute, and over than 80% within 10 minutes.

Concluding, one should also consider the paramount role of some mosquito bites in the vast and very important field of zoonosis transmission in low- and medium income areas. The authors believe that even single case reports may enhance the awareness and the suspicion index of general practitioners on less focused cornerstones of common conditions, although with the inherent limitations, these manuscripts have achieved their main objectives.

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Figure 1. Evolutive aspects of the lesion caused by a mosquito bite on the right foot (D: day).

References

1. CANTILLO JF, GARCIA E, FERNANDEZ-CALDAS E, PUERTA L. Mosquito allergy: Immunological aspects and clinical management. *Mol Immunol* 2023, 164:153–158
2. DOES AV, LABIB A, YOSIPOVITCH G. Update on mosquito bite reaction: Itch and hypersensitivity, pathophysiology, prevention, and treatment. *Front Immunol* 2022, 13:1024559
3. HAWKES FM, HOPKINS RJ. The mosquito: An introduction. In: Hall M, Tamir D (eds) *Mosquitopia: The place of pests in a healthy world* [Internet]. Routledge, New York, NY, 2022, chapter 2
4. METZ M, ELBERSKIRCH M, REUTER C, LIEDTKE L, MAURER M. Efficacy of concentrated heat for treatment of insect bites: A real-world study. *Acta Derm Venereol* 2023, 103:adv11592
5. SEDA J, HORRALL S. Mosquito bites. In: *StatPearls* [Internet]. StatPearls Publishing, Treasure Island (FL), 2023

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