

# Miliaria crystalline in adults

Shirley Sical<sup>1</sup>, Patricia Chang<sup>2</sup>

<sup>1</sup>Private Practice, at Memorial Enterprise Group, Guatemala City, Guatemala, <sup>2</sup>Dermatologist at Paseo Plaza Clinic Center, Guatemala City, Guatemala

**Corresponding author:** Patricia Chang, MD, E-mail: pchang2622@gmail.com

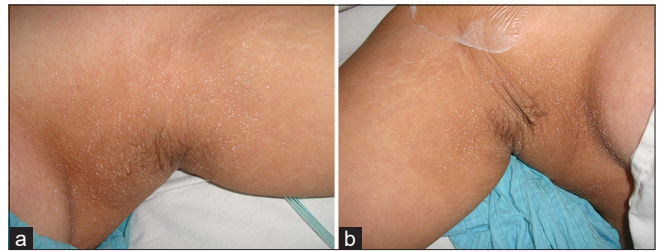
Sir,

Miliaria crystalline, is a common condition affecting the sweat glands, particularly, the eccrine ducts, and is typically observed in the immature sweat glands of newborns. However, it is uncommon for adults to experience this condition. This article presents two cases of miliaria in adults. Sweat glands are distributed throughout the body, primarily serving to regulate body temperature during high-heat exposure. However, dysregulation of the skin surface may lead to various causes, including inflammation and bacterial infection, resulting in glandular blockage, which will be further elaborated upon.

One patient was a fifty-year-old female hospitalized in the intensive care unit for decompensated diabetes and severe sepsis due to urinary tract infection under medical treatment. During her stay, she presented with a disseminated dermatosis on the anterior chest, back, and abdomen consisting of vesicles (Figs. 1a and 1b). The rest of the physical examination revealed the patient in poor overall condition and with fever. The patient passed away eight days after hospitalization.

The other patient was a 32-year-old female hospitalized in the intensive care unit for sepsis following a surgical wound infection. During her stay in the service, she presented with a disseminated dermatosis on the anterior chest, back, axillae, and abdomen characterized by multiple vesicles on healthy skin (Fig. 2). The rest of the physical examination revealed the patient in poor general condition and with fever. The patient was discharged four weeks after her stay in the service.

In both patients, the clinical diagnosis of adult-onset miliaria crystallina was made, which was favored by the



**Figure 1:** (a and b) Vesicular lesions in both armpits.



**Figure 2:** Abdominal vesicles on healthy skin.

feverish state secondary to the sepsis that they both had. In this study, we aim to highlight this uncommon dermatological aspect in adults.

Miliaria is a structural and functional alteration of the eccrine excretory ducts due to the body's exposure to high temperatures and extreme humidity conditions, resulting in a generally pruritic dermatosis on the skin [1].

This dermatosis may occur in patients of any age, yet children, especially in the early years of life, are the

**How to cite this article:** Sical S, Chang P. Miliaria crystalline in adults. *Our Dermatol Online*. 2025;16(1):117-118.

**Submission:** 07.05.2024; **Acceptance:** 30.06.2024

**DOI:** 10.7241/ourd.20251.28

most affected. It is believed that miliaria in childhood is the result of immaturity of the eccrine structures, with partial closure and sweat retention. Interestingly, little is known about miliaria in adults [1].

There are three forms of miliaria: miliaria crystalline, when obstruction of the eccrine duct occurs in the stratum corneum; miliaria rubra, when sweat is retained in the stratum Malpighii; and deep miliaria, when the aforementioned occurs in or below the dermoepidermal junction. This translates into different clinical presentations, with progression from superficial to deep forms, influencing responses to various treatments [1,2].

For adults, miliaria arises from the obstruction of the sweat gland ducts by dead skin cells or bacteria such as *Staphylococcus epidermidis* and *Staphylococcus aureus*. These bacteria produce a sticky substance which, when combined with excessive sweat and dead skin cells, may lead to blockage. The acute inflammation of sweat ducts is triggered by the blockage of pores due to macerated skin, and it is believed that over-hydration of the stratum corneum is adequate to cause temporary blockage of the acrosyringium, which is the most superficial region of the sweat gland duct [3].

Nevertheless, mere sweating does not suffice to trigger duct disruption and miliaria. Increased levels of sodium chloride on the skin, elevated humidity, and wearing occlusive clothing may contribute to eccrine duct disruption due to the maceration of the stratum corneum. Additionally, damage to epidermal cells induced by ultraviolet radiation may also result in ductal disruption [3].

Since miliaria arises in hot and humid environments, the main approach for treating and preventing it involves managing heat and humidity to prevent excessive sweating. This may be achieved by removing tight-fitting clothing, relocating to a cooler environment, reducing physical activity, and taking frequent cool showers [3].

## Consent

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

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

## REFERENCES

1. Otero V, Bitar M, Rodríguez Z. Tratamiento de la miliaria Estudio comparativo sobre el uso de la azitromicina. Rev Asociac Colomb Dermatol Cir Dermatológica. 2000;8:249-54.
2. Sánchez Melús J, Refusta Ainaga P, Mata Crespo LD. [Crystalline miliaria in adult woman after solar exposition]. Aten Primaria. 2024;56:102781.
3. Nagpal M, Singh G, Paramjot, Aggarwal G. Miliaria: An update. Res J Pharmaceut Biol Chem Sci. 2024;8:162-7.

Copyright by Shirley Sical, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Source of Support:** This article has no funding source.

**Conflict of Interest:** The authors have no conflict of interest to declare.