



## IMAGES IN PAEDIATRICS

## Miliaria crystallina after severe neonatal hypernatremic dehydration

### Miliaria cristalina tras deshidratación hipernatrémica neonatal grave

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An infant born at 40 weeks with a weight of 4090 g presented on day 18 post birth with severe hypernatremic dehydration (sodium 194 mmol/L), malnutrition, cerebral venous thrombosis and acute kidney injury (creatinine, 1.46 mg/dL). The skin pinch test caused prolonged tenting (Fig. 1). Gradual intravenous rehydration reduced the serum sodium level to 160 mmol/L within 48 h. Three days later, the patient developed multiple superficial vesicular lesions over the trunk (Fig. 2). The condition was diagnosed as miliaria crystallina (MC) and all lesions resolved within five days with supportive skin care.

Miliaria crystallina is a benign sweat retention disorder caused by obstruction of the eccrine ducts by the overlying stratum corneum, causing sweat to leak into the upper epidermis.<sup>1,2</sup> It typically occurs in neonates exposed to warm, humid environments but may also arise in other contexts.<sup>2,3</sup> In this case, MC developed during the correction of hypernatremia.

Although elevated sodium suppresses aldosterone – reducing sodium reabsorption in sweat glands – MC rarely occurs at the peak of hypernatremia, but rather during or after its correction. One hypothesis proposes that the initial hypovolemia stimulates aldosterone to retain sodium, though this may fail without adequate feeding. As hydration improves, aldosterone levels may fall, increasing sweat sodium loss and promoting ductal obstruction.



**Figure 1** Skin pinch test causing persistent tenting in the neonate with severe hypernatremic dehydration.

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**Figure 2** Superficial vesicular lesions over the trunk, consistent with miliaria crystallina, that appeared three days after rehydration and resolved within five days with supportive skin care.

Previous reports describing MC associated with sodium shifts, including pseudohypoaldosteronism,<sup>3</sup> supports a hormonal influence on eccrine function. This case illustrates the importance of recognizing benign skin findings such as MC in critically ill neonates. Awareness of its self-limited course can prevent unnecessary diagnostic or therapeutic interventions, which is particularly relevant in patients recovering from severe metabolic disturbances.

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### Declaration of competing interest

The authors declare no conflicts of interest.

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