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Unilateral scabies in a 6-week-old infant

Abstract

We report the case of a 6-week-old female who, since the 4th week of life, developed red papules and papulovesicles beginning at the left elbow and spreading unilaterally. There was no involvement of the face, scalp, palms and feet. The infant was afebrile, showed no abnormalities in drinking behavior or sleep and both parents were asymptomatic. Differential diagnoses included incontinentia pigmenti, strophulus infantum, unilateral laterothoracic exanthem, transient neonatal pustular melanosis, herpes simplex and atopic dermatitis. Laboratory findings revealed mild eosinophilia and histology showed moderate acanthosis, spongiosis, and a dermal infiltrate of lymphocytes, histiocytes, and eosinophils. The presence of three papules on the mother's right arm raised suspicion of an infectious origin. Dermatoscopic examination showed a dark triangular structure at the end of the burrow, supporting a scabies diagnosis. Therapy with 7, 5 g permethrin 5% on day 0 and 7 and methylprednisolone aceponate cream afterwards led to complete resolution. This case highlights the importance of considering scabies in the differential diagnoses of unilateral vesiculopapular eruptions, even in newborns without characteristic symptoms including pruritus and discreet family involvement.

Keywords: Scabies; Infant; Unilateral eruption; Histology; Treatment; Differential diagnosis.

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Introduction

Scabies is a parasitic skin disease caused by *Sarcoptes scabiei* that typically presents with a generalized, pruritic eruption and is transmitted by person-to-person contact [1]. It affects approximately 300 million people worldwide annually, with highest incidence in infants and children [2]. The clinical presentation of scabies varies by age. Adults typically exhibit intensely pruritic erythematous papules in interdigital spaces, the periumbilical region, extremities and genital area. In infants, however, atypical presentations can cause diagnostic uncertainty [1]. In this age group and in young children scabies may present with polymorphic and bullous lesions often involving the head, palms, soles, and ankles [1,3]. This case demonstrates another atypical, unilateral, and non-pruritic manifestation confirmed by dermatoscopic findings, with a favorable therapeutic response.

Case presentation

A previously healthy 6-week-old female presented with red papules, nodules, and papulovesicles beginning at the left elbow from week four of life, spreading unilaterally (Figure 1). There was no obvious pruritus or involvement of the palms, feet, scalp, or face. Furthermore, no fever and normal feeding and sleeping behavior were observed. Parents were healthy and asymptomatic. Laboratory tests showed normal CRP, mild eosinophilia (6%), and thrombocytes slightly below age-matched reference values. Due to the unilateral manifestation with an almost Blaschko-linear pattern, differential diagnoses included incontinentia pigmenti. Furthermore, we considered strophulus infantum, unilateral laterothoracic exanthem, transient neonatal pustular melanosis, herpes simplex, and atopic dermatitis. Histology of lesional skin demonstrated moderate acanthosis, spongiosis, and a dermal lymphohistiocytic and eosinophilic infiltrate. Additionally, the mother reported

discreet skin changes on her right arm (Figure 2). Based on the histological findings and additional information we favored an alternative diagnosis. Dermatoscopy of a skin lesion in the infant and mother revealed a dark triangular structure at the end of a burrow, confirming the diagnosis of scabies. Treatment with 7.5 g (a quarter of the regular tube size) permethrin 5% cream was applied over the complete area affected on day 0 and day 7. After completion, the infant had persistent papules and nodules. A therapy with methylprednisolone aceponate cream once daily for one week led to complete resolution. All family members were treated simultaneously and hygiene measures implemented. This case highlights the importance of considering scabies despite an unusual presentation and without apparent involvement of the parents.

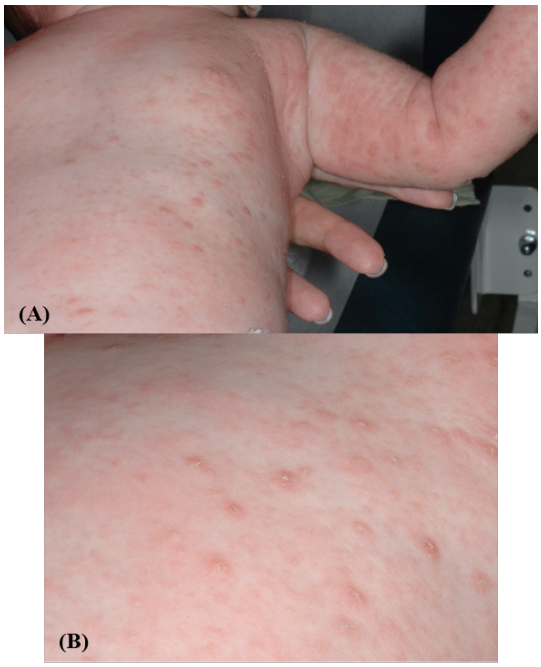

Figure 1: **(A)** 6-week-old female infant presenting with unilateral exanthem consisting of papules, papulovesicles, and nodules. **(B)** Close-up view of the infant's abdominal lesions.

Figure 2: Discreet erythematous papules observed on the mother's right arm.

Discussion

Unilateral scabies is exceedingly rare, and noticing pruritus in infants can be challenging due to their limited ability to communicate symptoms [1,2]. Infants may exhibit pruritus accompanied by other signs such as crying, irritability, and restlessness [3]. Differential diagnoses in this case included incontinentia pigmenti (owing to its unilateral, almost Blaschko-linear presentation), strophulus infantum, transient neonatal pustular melanosis, herpes simplex, and atopic dermatitis.

Laboratory eosinophilia has been reported as a marker of immune response in scabies, consistent with our findings [4,5]. Histological examination may show spongiosis and a mixed inflammatory cell infiltrate, supporting the diagnosis even when mites are not histologically present [4]. The gold standard for diagnosing scabies is dermoscopy, which can reveal the characteristic brown triangular "delta-wing" sign corresponding to the mite's head, often visualized within a burrow [6]. In our case, due to the atypical manifestation, histopathology was performed as an initial diagnostic step. The unilateral distribution could be explained by the fact that the mother always carried the baby with the left side facing her.

Nodular scabies constitutes a distinctive variant, presenting with firm nodules particularly in areas of thin skin, such as intertriginous regions and the umbilicus [7]. Neonatal skin is inherently thin, which may explain the predominance of papules and nodules in our patient.

The treatment of scabies in this age group poses certain challenges. Permethrin cream is approved for use from two months of age on. Nevertheless, standard treatment with 5% permethrin cream administered on day 0 and day 7 results in cure rates of only 29% [8]. Supporting a minimum application time of 12 hours, an in vitro study from 2020 demonstrates that 65% of mites survive after 8 hours and 25% after 12 hours of exposure [9]. Crotamiton 10% cream is a good alternative to permethrin, given lower resistance rates, and is approved from one year of age on, with application for three consecutive days [10]. Benzylbenzoate (10% from one year, 25% from twelve years on) is considered the gold standard topical treatment, showing cure rates of 87% compared to 27% for permethrin [11]. Ivermectin use in children under 15 kg body weight, as in our patient, remains off-label. However, emerging safety data support its use in selected cases and it should be considered if topical permethrin proves inadequate [12]. For post-scabetic eczema and nodular scabies, topical corticosteroids are recommended to alleviate pruritus [7]. In infants, all topical therapies must be applied not only to the trunk and extremities, but also to the face, ears, and scalp, with careful avoidance of the perioral and periorbital areas. All close contacts require simultaneous treatment, and strict hygiene measures must be enforced.

Conclusion

Scabies may present unilaterally in neonates, which can contribute to a delay in diagnosis. Dermatoscopic findings can provide valuable diagnostic clues in such atypical presentations. Early recognition and treatment are essential for favorable outcomes and to prevent further infestations [2,3]. This case is particularly notable due to the unilateral distribution of nodular scabies. In contrast to the mother, the neonate showed a more pronounced manifestation, likely attributable to the immaturity of the immune system during the neonatal period.

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