Photo Vignette

Crusted scabies in patients with recessive dystrophic epidermolysis bullosa

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Abstract

Crusted scabies is a severe and highly contagious variant of scabies, characterized by extensive infestation of *Sarcoptes scabiei* var. *hominis* within the epidermis. It typically occurs in individuals with compromised immune responses to parasitic infections. Crusted scabies in patients with epidermolysis bullosa, particularly recessive dystrophic epidermolysis bullosa (RDEB), is rarely reported. Here, we describe a 14-year-old girl with severe RDEB who developed crusted scabies. Treatment with a combination of ivermectin and losartan led to significant clinical improvement.

Introduction

Crusted scabies is a severe and highly contagious form of scabies infestation, characterized by an abundant number of *Sarcoptes scabiei* var. *hominis* mites infesting the epidermis.[1] This results in significant thickening of the stratum corneum, forming characteristic warty crusts.[2] This form of scabies is most frequently observed in individuals with immunological disorders, malnutrition, physical disabilities, those on systemic or potent topical glucocorticoids, organ transplant recipients, and individuals infected with HIV, all of which promote uncontrolled proliferation of the mites.[3] Crusted scabies is also more prevalent in patients who are unable to perceive pruritus, including those with Down syndrome, dementia, and intellectual disabilities.[1]

To our knowledge, scabies associated with epidermolysis bullosa (EB), particularly in one of its most severe forms, recessive dystrophic epidermolysis bullosa (RDEB), is rarely reported. Here, we present a case of a patient with RDEB who developed crusted scabies and showed significant improvement with a combination of losartan and ivermectin.

Case Synopsis

A 14-year-old girl with a history of RDEB and severe malnutrition presented to our emergency department for evaluation and management of extensive erosions over her body (Figure 1 and Figure 2). She had recurrent blisters all over her body since 2 weeks of age, initially diagnosed as EB simplex. There is consanguinity in the family (both grandparents were siblings) (Figure 3).

Physical examination was notable for diffuse erythematous patches with extensive erosions, brownish crusted, pseudo-syndactyly, and dental malformations (Figure 1 and Figure 2). Skin scraping revealed *Sarcoptes scabiei* with its products (Figure 4 and Figure 5). The patient reported severe pruritus, which worsened at night. Skin biopsy was not performed. Laboratory evaluation showed thrombocytosis (1,108,000/µL; normal, 150,000–450,000/µL), leukocytosis (19,200/µL; normal, 4,500–11,500/µL), hyper-eosinophilia (32%; normal, 1–3%), anemia (hemoglobin 7.9 g/dL; normal, 14–18 g/dL), and hypoalbuminemia (2.2 g/dL; normal, 3.97–4.94 g/dL). Based on clinical and laboratory findings, diagnoses of RDEB and crusted scabies were established.

Given her extensive erosions, poor condition, and leukocytosis, she was started on ampicillin-sulbactam 750 mg every 6 hours for 10 days and subsequently switched to meropenem 700 mg for 15 days. Moist wound care with silver sulfadiazine was applied twice daily and covered with non-adherent dressings. She received ivermectin 4 mg on days 1, 2, 8, 9, 15, and 22, along with topical and oral losartan 12 mg for 7 days. After 24 days of hospitalization, she showed clinical improvement and tolerated treatment well, with no observed side effects.

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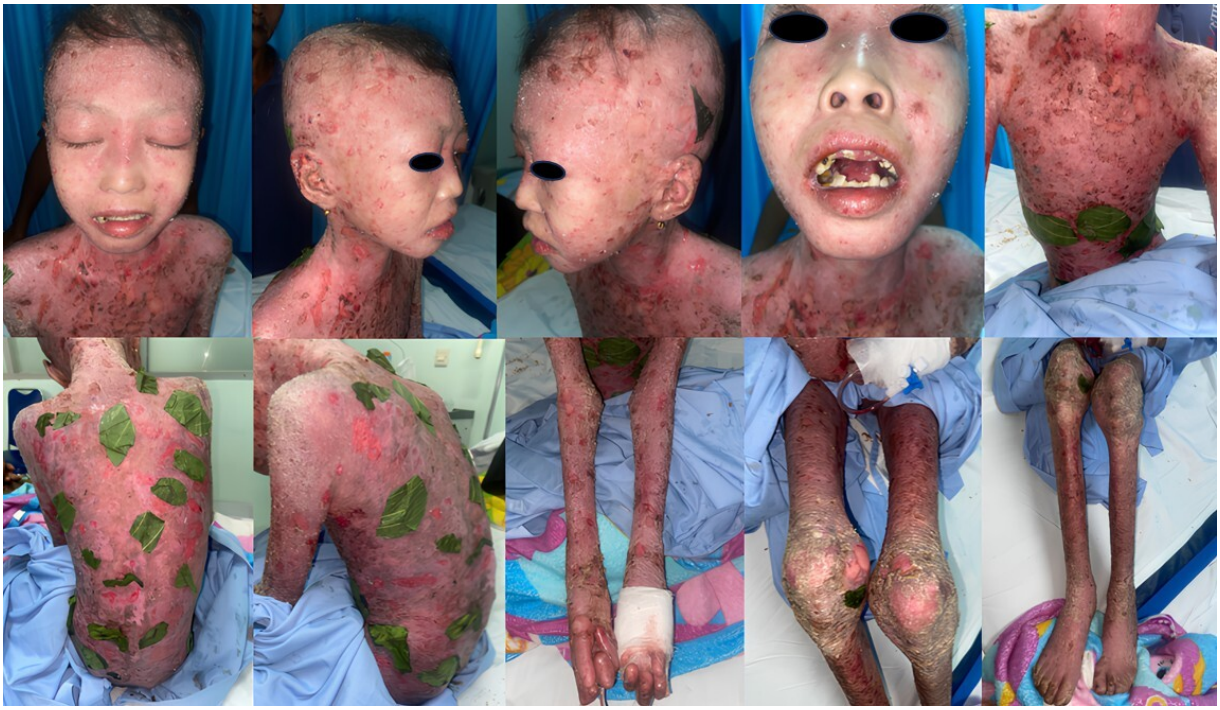

Figure 1. *Diffuse erythematous patches with extensive erosions, brownish crusted, pseudo-syndactyly, and dental malformations.*

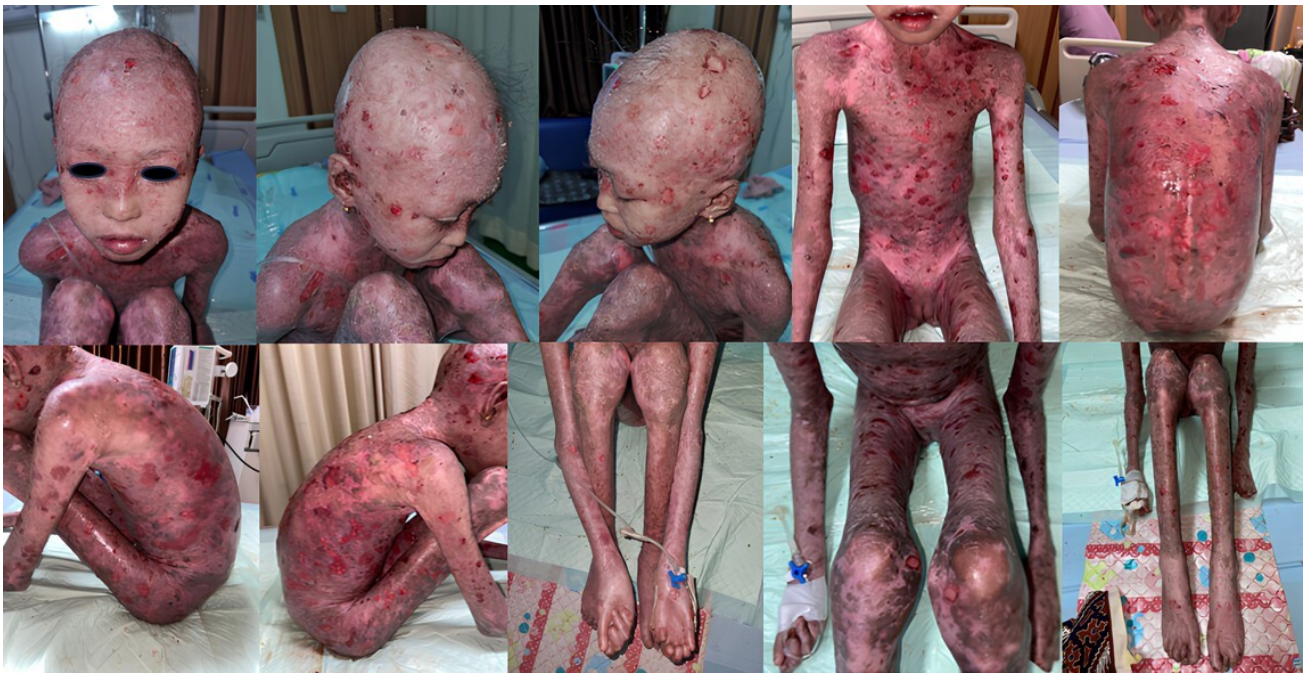

Figure 2. *Diffuse erythematous patches with extensive erosions and brownish crusted and pseudo-syndactyly.*

Case Discussion

RDEB is a subtype of EB and is among the most severe forms, caused by rare pathogenic variants in the *COL7A1* gene. In RDEB, the integrity of the skin is compromised, leading to wounds that are frequently colonized by microorganisms.[4] These pathogens gain access to abundant nutrients, allowing them to proliferate and uncontrollably colonize the lesions.[5] Additionally, the combination of decreased food intake and increased nutritional requirements often results in malnutrition among EB patients, which disrupts growth, increases susceptibility to infections, and impairs wound healing.[6]

As in our patient, crusted scabies has been reported as a comorbidity in EB patients, although it is rare.[7] The clinical signs of crusted scabies are nonspecific and can mimic a variety of other conditions, including seborrheic

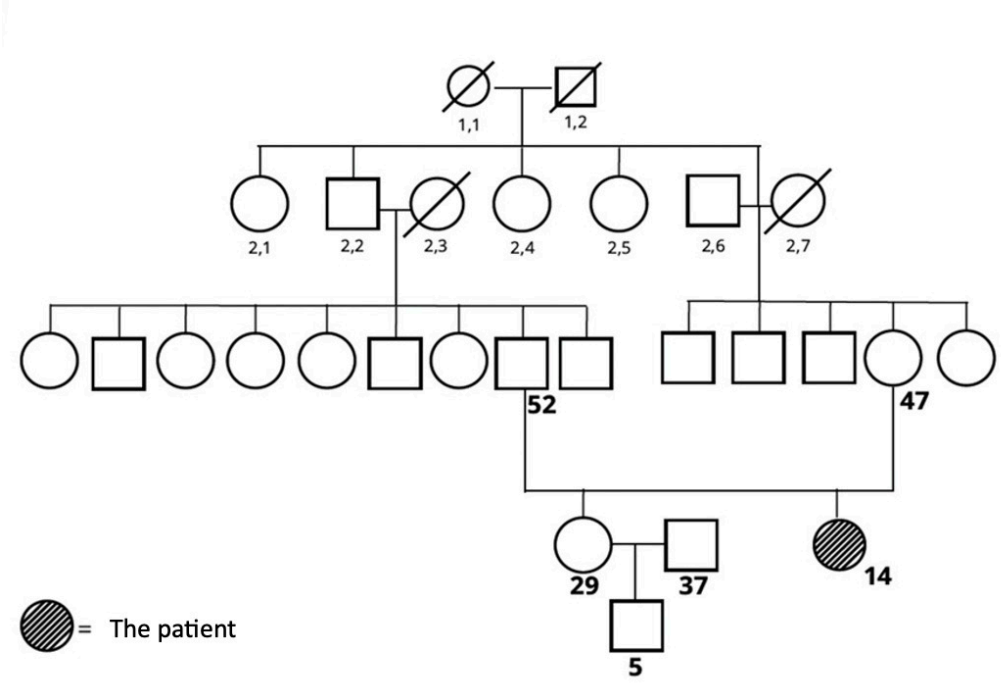

Figure 3. *Pedigree showing consanguinity in the family (both grandparents were siblings).*

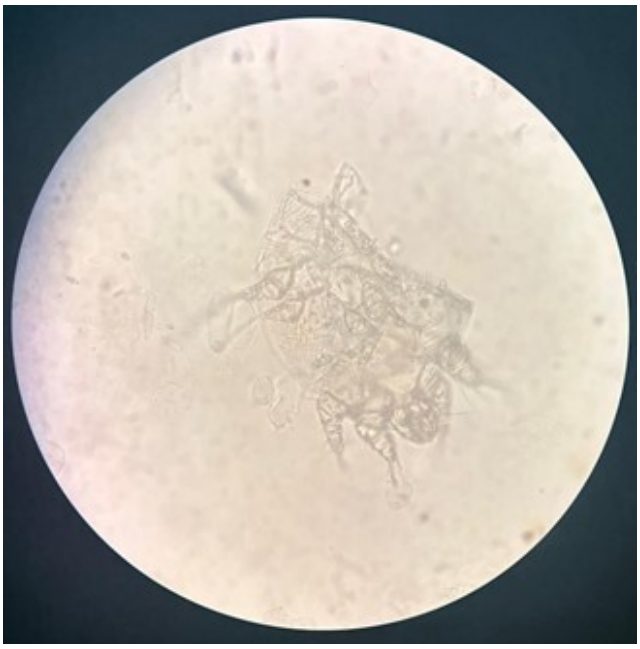

Figure 4. Sarcoptes scabiei.

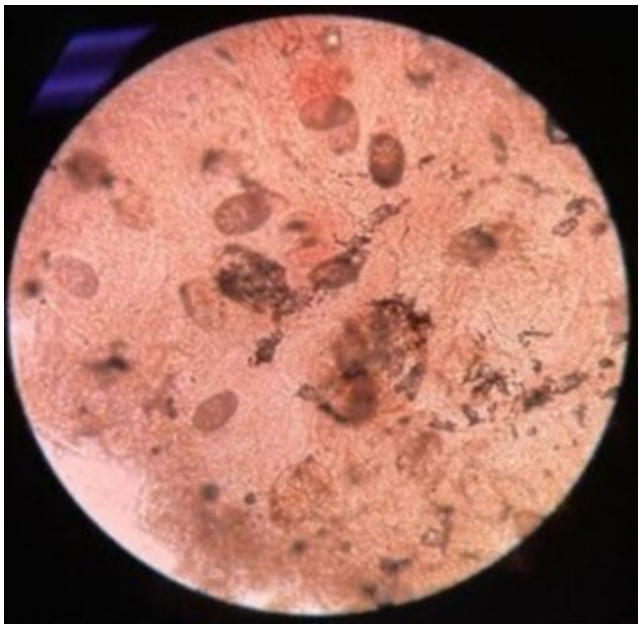

Figure 5. Sarcoptes scabiei *and its products.*

dermatitis and psoriasis, and it may present with varying degrees of pruritus.[8] Additionally, scabies infestation has been reported as a trigger of EB pruriginosa, a rare form of dystrophic EB in which severe itching can result in nodular prurigo-like lesions, nail dystrophy, violaceous scars, and albopapuloid lesions.[9]

The Centers for Disease Control and Prevention (CDC) recommends using topical scabicides, such as 5% benzyl benzoate or 5% permethrin cream, applied to the entire body for 7 days, followed by twice-weekly applications until the patient is discharged or cured. As recommended by the CDC, oral ivermectin (200 µg/kg) is also indicated for adults and children weighing more than 14 kg on days 1, 2, 8, 9, 15, and 22.[10] In our patient, oral ivermectin was administered solely owing to extensive skin erosions covering nearly the entire body.

In the present case, supportive wound therapy combined with losartan resulted in significant clinical improvement. Losartan is an angiotensin II type 1 receptor antagonist that exhibits anti-fibrotic effects by inhibiting transforming growth factor–β activity.[11] Preclinical stud-

ies in RDEB mice and several case series have shown that losartan may improve the clinical manifestations of RDEB.[12]

Conclusion

We report a case of crusted scabies in a patient with severe RDEB who showed significant clinical improvement with a combination of oral ivermectin and losartan. This case highlights the potential complication of scabies infestation in RDEB and demonstrates the efficacy of combined losartan and ivermectin therapy in managing crusted scabies in these patients.

Potential conflicts of interest

The authors declare no conflicts of interest.

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