Crusted scabies (also known as Norwegian scabies and hyperkeratotic scabies) is a highly contagious and severe form of scabies characterized by profuse proliferation of mites in the skin and widespread, crusted, hyperkeratotic papules, plaques, and nodules [2–5]. Typically, pruritus is minimal or absent [2, 6]. Crusted scabies usually occurs in immunocompromised individuals [2, 5]. Occurrence in healthy infants has rarely been reported. We report an 11-month-old healthy Malay boy who presented with crusted scabies.

2. Case Report

An 11-month-old Malay boy presented with a 6-month history of an intensely pruritic scaly rash characterized by crusting and excoriation over the body (Figures 1 and 2). The infant was seen at 8 months of age by his family physician. He was misdiagnosed to have atopic dermatitis with secondary bacterial infection at 10 months of age, and he was treated with topical mometasone furoate cream daily for two weeks, oral cloxacillin for 7 days, and an emollient several times a day. In spite of the treatment, there was no improvement of the eruption and no relief of the itch. A serum immunoglobulin E (IgE) was performed and was found to be normal. Because of the intense pruritus and the lack of improvement with the current therapy, the infant was referred to one of us (KFL) at 11 months of age.

Past medical history revealed that the infant was born to a 26-year-old primigravida woman at 39 weeks gestation following an uncomplicated pregnancy and delivery. He was exclusively breastfed for 6 months, at which time solid food was introduced. The developmental milestones were normal. His past medical history was otherwise unremarkable, and he had not been on any medications until 8 months of age which was 3 months after onset of the rash.

Family history revealed that both parents had an intensely pruritic erythematous papular eruption affecting the interdigital web spaces and lateral aspects of fingers approximately 2 to 3 months after the onset of the eruption in the infant. The parents did not have any crusted lesions. They were seen by a dermatologist, who made the diagnosis of scabies and treated with 5% permethrin cream with
reduction of the pruritus and improvement of the lesions. On further questioning, the babysitter was found to have crusted scabies. She was seen and treated by a dermatologist.

On examination, the infant was well nourished and not in distress. His weight was 8.8 kg, height 74 cm, temperature 37°C, heart rate 78 beats per minute, and respiratory rate 28 breaths per minute. Diffuse, scaly, crusted, hyperkeratotic, erythematous patches and plaques were seen over the body. Some of the lesions were excoriated. The lesions were accentuated on the groins, palms, and soles (Figure 3). The rest of the physical examination was normal.

Direct microscopic examination of skin scrapings revealed numerous scabies mites and eggs. A skin biopsy was performed on one of the lesions which revealed the scabies mite within the epidermis (Figure 4). A diagnosis of crusted scabies was made. His complete blood cell count, differential count, T-cell and B-cell subsets, quantitative immunoglobulins, and HIV test were all normal.

The infant was treated with overnight application of topical 5% permethrin cream to the entire body weekly for a total of 6 weeks. There was complete resolution of cutaneous lesions at the end of the treatment (Figures 5 and 6).

3. Discussion

Crusted scabies is seldom reported in infancy, especially in healthy infants. The condition was originally described in Norway by Danielssen and Boeck as a type of scabies infestation caused by millions of mites in patients with leprosy [7]. Crusted scabies is characterized by widespread erythroderma, hyperkeratosis, and crusting of the skin [8]. Lesions tend to be exaggerated on the soles, palms, ears, and extensor surface of the elbows [8, 9]. The crusts may be

![Figure 1: An 11-month-old infant with an intensely pruritic rash was noted to pinch his skin constantly.](image1)

![Figure 2: An 11-month-old infant with an intensely pruritic rash was noted to scratch his skin constantly.](image2)

![Figure 3: Diffuse, crusted, hyperkeratotic, and erythematous patches and plaques, involving the left leg and foot.](image3)

![Figure 4: Histological examination of a skin biopsy specimen showed acanthosis, parakeratosis, spongiosis, and a scabies mite within the epidermis. It also showed superficial perivasculuar and diffuse infiltrate of lymphocytes and histiocytes within the dermis (Hematoxylin-eosin stain, original magnification ×200).](image4)

![Figure 5: Crusted scabies lesions on the left leg and left foot 3 weeks after treatment.](image5)
Crusted scabies is extremely contagious and usually occurs in immunocompromised individuals. The condition has rarely been reported in healthy infants. We report an 11-month-old healthy infant with pruritic crusted scabies which started at the age of 5 months. The occurrence of crusted scabies in healthy infants may be more common than is generally appreciated. This case report highlights the need to be vigilant on the occurrence of crusted scabies. Demonstration of the scabies mites, eggs, or fecal pellets (scybala) in skin scraping or skin biopsy differentiates crusted scabies from other conditions. Physicians should be vigilant on the occurrence of crusted scabies in infants, whether they are immunocompromised or immunocompetent, as delay in diagnosis and treatment may lead to dissemination of the infestation.

4. Conclusion

Crusted scabies is extremely contagious and usually occurs in immunocompromised individuals. The condition has rarely been reported in healthy infants. We report an 11-month-old healthy infant with pruritic crusted scabies which started at the age of 5 months. The occurrence of crusted scabies in healthy infants may be more common than is generally appreciated. This case report highlights the need to
consider crusted scabies in healthy infants with crusted, hyperkeratotic lesions so that an early diagnosis can be made and treatment initiated.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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