

CASE REPORT

Crusted (Norwegian) scabies in an infant: a case report

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ABSTRACT

Introduction: Norwegian or crusted scabies is a rare and highly contagious form of skin parasitosis caused by *Sarcoptes scabiei* var. *hominis*. Individuals maffffinly affected are considered to be immunocompromised such as those on prolonged *glucocorticosteroid* therapy, with AIDS or organ transplant patients. This disease presents as a hyperkeratotic dermatosis with an acral distribution.

Case Report: This is a case of a 2-month-old healthy Filipino male, who was previously managed as a case of miliaria rubra and treated with clobetasol 0.05% - ketoconazole 2% cream for 1 week. The papules and plaques became widespread. Consult with a pediatrician revealed widespread scabies and for which patient was prescribed topical permethrin with no improvement. On examination, patient presented with multiple erythematous papules and plaques with crusts on the face, trunk, extremities, palms and soles. Thickened yellowish plaques were observed on the palms and soles. Both parents also presented with widespread papules most prominent on the flexural areas accompanied by nocturnal pruritus. On dermoscopy, numerous mites and burrows were seen in a “jet with contrail pattern.” Prominent yellowish scales were also noted. Patient was admitted due to fever and superimposed bacterial infection and was given IV oxacillin, paracetamol, 8% precipitated sulfur in a hypoallergenic lotion applied twice daily and sodium fusidate ointment. On the 4th hospital day, the patient was afebrile and the lesions were noted to decrease in both erythema and crusting. Follow-up dermoscopy revealed absence scales, burrows and mites.

Conclusion: Prolonged, unsupervised use of topical corticosteroids in our case most likely induced an immunocompromised state thus predisposing the patient to develop Norwegian scabies. In countries where cases of Norwegian scabies have been unresponsive to permethrin and when ivermectin is not available, the use of precipitated sulfur may still be the best therapeutic and safest option for infants.

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Source of funding: none

Conflict of interest: none

Key words: Norwegian scabies, infant, topical corticosteroid

INTRODUCTION

Norwegian or crusted scabies is a rare and highly infectious form of skin parasitosis caused by *Sarcoptes scabiei* var. *hominis*. These parasites are found in the horny layer of the skin forming warty crusts. The usual form of transmission is due to personal contact. This type of scabies infestation has been found to affect immunocompromised individuals such as those with AIDS or organ transplant patients, those living in unsanitary conditions or those undergoing immunosuppressive or corticosteroid treatment. Affected individuals present with thick, scaly, hyperkeratotic dermatosis with an acral distribution^(1,2).

CASE REPORT

A previously healthy 2-month-old male infant was admitted to our service with a 1-month history of miliria-like lesions on the face, neck, trunk and extremities. At that time, the patient was brought to a general practitioner and given unrecalled topical corticosteroids. However, the mother was unable to buy the prescribed medications and instead, applied clobetasol 0.05%-Ketoconazole 2% cream on all affected areas. Lesions were then noted to have increased in size and number evolving into multiple erythematous plaques, some with crusts on the face, trunk and extremities. Family members were similarly affected. Persistence of lesions prompted consult with a pediatrician where the patient was diagnosed with scabies and prescribed with Permethrin 5% lotion. However, after the first application, it was noted that the lesions worsened hence referral to our institution.

On physical examination (Fig. 1a and 1b), the patient presented with multiple erythematous to dusky red papules and plaques, some with yellow hyperkeratotic crusts on the face, trunk, extremities, hands and genital area. He was active but febrile.

On dermoscopy (Fig. 2) multiple parasites were seen represented by triangular or delta-shaped structures. A skin punch biopsy was also done and the patient was subsequently admitted⁽¹⁾.

Histopathology (Fig. 3 and 4) revealed hyperkeratosis and parakeratosis of the stratum corneum, acanthosis with spongiosis and exocytosis of lymphocytes and eosinophils in the epidermis. The dermis revealed a moderately dense diffuse perivascular and interstitial inflammatory infiltrates of lymphocytes, histiocytes, neutrophils and eosinophils. Parasite fragments were not conspicuous perhaps because of the density of the inflammatory infiltrate. Histopathologic diagnosis was parasitic infestation compatible with Norwegian scabies.



Figure 1. (a) Multiple well-defined erythematous to dusky red plaques with scales on the trunk (b) multiple well-defined erythematous plaques with hyperkeratotic scales on the arms and hands

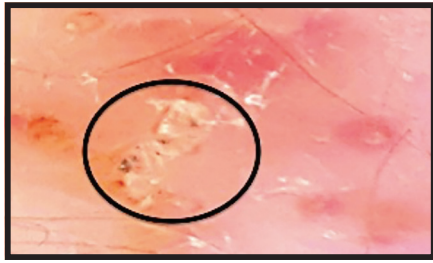


Figure 2. Dermoscopy reveals a burrow with many dots and triangular structures compatible with Norwegian scabies neutrophils and eosinophils (H & E, x 200).

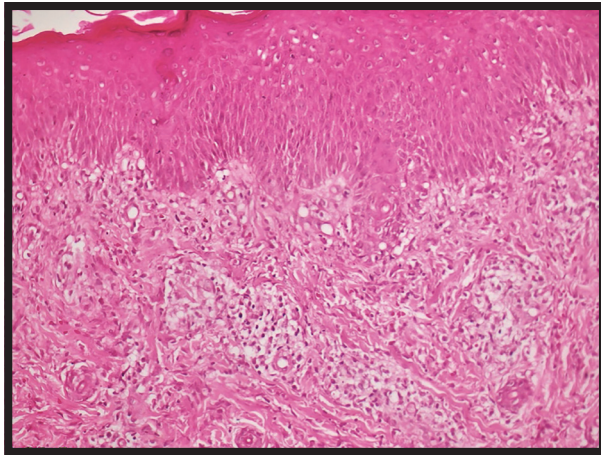


Figure 3. Histopathology showed acanthosis of the epidermis with spongiosis and exocytosis of lymphocytes and eosinophils. The dermis revealed a moderately dense, diffuse perivascular and interstitial inflammatory infiltrates of lymphocytes, histiocytes, neutrophils and eosinophils (H & E, x 200).

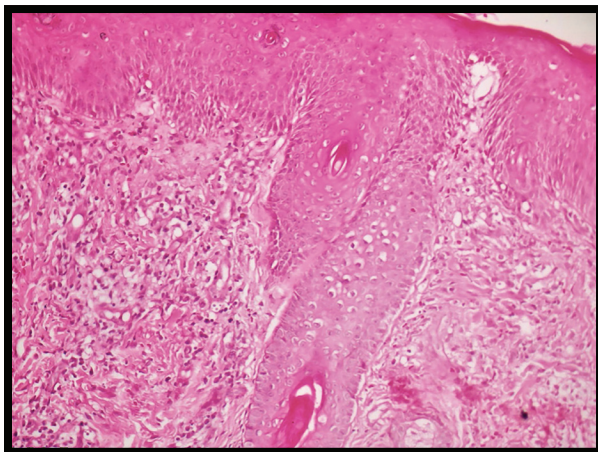


Figure 4. Dermis reveals a dense, mixed inflammatory infiltrate of lymphocytes, neutrophils and many eosinophils (H & E, x 200).

Due to the previous application of permethrin with minimal improvement, sulfur 8% lotion applied twice a day was prescribed for 3 consecutive days with a bath in between applications(3). Contact isolation was strictly implemented. Family members were treated similarly with sulfur lotion. On the 4th day of hospitalization (Fig. 5), improvement of cutaneous lesions were noted with decrease in erythema and scales.



Figure 5. Day 4 of treatment (a) Multiple well-defined erythematous to dusky red patches on the trunk (b) Multiple well-defined erythematous to dusky red patches and some plaques with hyperkeratotic crusts on the arms and hands

Discussion

Several reports have been found of prolonged use of corticosteroids predisposing patients to the development of crusted or Norwegian scabies. This is attributed to the capability of corticosteroids to alter an individual's immune system, reducing the innate inflammatory response and suppression of the cellular immunity causing widespread keratotic eruptions(4).

This phenomenon was seen in our patient with the use of BL cream containing clobetasol.

Although the preferred treatment of crusted or Norwegian scabies is permethrin 5% lotion, due to the patient's previous adverse reaction to the medication, alternatives were prescribed. Other options included ivermectin 200 µg/kg/dose and 6 to 10% precipitated sulfur lotion. However, according to studies(3,5), ivermectin is contraindicated in children below 2 months or age or below 15 kg. The patient weighed in at 4kg and was only 2 months old. Precipitated sulfur, on the other hand, was recommended for special patients such as pregnant individuals and children below 2 months old. Studies have shown that between

6 to 10%, given every 24 hours for 3 days, precipitated sulfur has been proven to be effective against crusted or Norwegian scabies. In terms of efficacy among the three commonly used therapies, studies have shown that there is no difference with their effectiveness in curing scabies.

In conclusion, it is important to be able to identify scabies early on as to avoid its evolution to the crusted form. In addition, all family members must always be treated as scabies, most especially in its crusted form, is highly contagious. Moreover, in instances wherein permethrin 5% lotion or ivermectin are not available, precipitated sulfur 6 to 10% may be used as it has been found to be equally efficacious.

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