Case report:

Crusted scabies in an immunocompetent patient: A rare case report

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Abstract

Crusted scabies is a rare morphological variant of scabies characterized by crusted, hyperkeratotic skin lesions with minimum itching. It is usually found in neglected patients and people with poor living status. Delayed and misleading diagnosis is common factor of sufferings for patients. We report a 9 years old girl presented with crusted scabies for 2 years. We confirmed the case with dermoscopic and microscopic findings.

Keywords: Crusted scabies, Norwegian scabies, ivermectin

Introduction:

Scabies is an infestation of mites Sarcoptes scabiei var. hominis which made burrows under the epidermis of human skin. It is highly transmissible among family members and with persons of close contact. Scabies is also listed as a neglected tropical disease by WHO in 2017.[1] Crusted scabies is a rare morphological form of scabies that is also called Norwegian scabies as it was described first time by Danielssen and Boeck of Norway.[2]

Case report:

A 9 years old girl reported at Bangabandhu Sheikh Mujib Medical University hospital with complaints of thick crusted plaque over different parts of the body for the last 2 years. Lesions initially started as itchy papules over the hand and feet, that gradually spread over the whole body and converted into none to less pruritic scaly and crusted plaques. All of her family members are suffering from pruritic papules over different parts of their bodies. Plaques with thick scales and crusts did not develop from any blistering disease after birth nor evolved from erythematous, scaly, exudative plaques and do not bleed after the removal of scales. The patient did not have family or self-history of atopy. She had no history of any immunosuppressive disease, immunosuppressive drug consumption and organ transplantation.

The patient was ill-looking, mildly anaemic and malnourished. There were thickly crusted and scaly plaques over the scalp, hands, feet, knees, elbows, axillae, ears, chest, umbilicus, groin, buttock and back. Burrows were found over crusted areas and on normal skin. Her nails are normal, hair is lustreless and thinning of hair is present. She has erosive oral lesions. She had no lymphadenopathy or any organomegaly. Her haematological and biochemical blood test reports were within normal range. She was labelled at first as atopic dermatitis and then psoriasis and had treated accordingly but not improved. Finally, the diagnosis was made by isolation of mites in 10% KOH-mounted light microscopy. The skin biopsy report was also suggestive of scabies.

The nature of the disease and the management plan was discussed with the patient's family members to convince them of proper hygiene maintenance and group treatment. The patient was advised to take permethrin cream 5% daily on the whole body for 7 days followed by twice weekly until improvement. Salicylic acid cream of 12% was prescribed to apply over hyperkeratotic lesions on alternate days until

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clearance. Oral ivermectin tablet at a dose of 200µgm/kg was given to take at day 1, 2, 8, 9 and 15 as per instruction. The patient improved satisfactorily within one month.

Figure I: Crusted scabies

Figure II: Crusted plaques on hands and around umbilicus

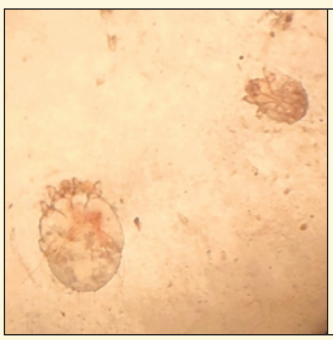

Figure III: Mites were found in light microscopic views of lesional skin scraping on 5% KOH mount slide.

Discussion:

Crusted scabies usually occurs in immunocompromised persons such as AIDS/HIV infections, congenital immunodeficiency disorders, chronic intake of immunosuppressive drugs, after organ transplantation, malignancies and systemic diseases like diabetes mellitus, systemic lupus erythematosus. Other associated factors are malnutrition, old age, sensory or motor neuropathy, leprosy, paraplegia and Down syndrome.[3] Crusted scabies is usually less pruritic than other types of scabies. It presents as crusted plaques on different parts of the body as psoriasis or atopic dermatitis. Most of the time the diagnosis is delayed for its peculiar presentation and absence of itching.[4]

The cutaneous manifestations of scabies are due to the burrowing of mites in the stratum corneum and stratum malpighii, the two superficial layers of the epidermis. Symptoms may occur in response to humoral and delayed hypersensitivity reactions.[6] The mite antigens that trigger the immune response are probably in the saliva and other body particles. The failure of the immune system to suppress the proliferation of mites is a probable cause of crusted scabies development. Crusted scabies typically develops in patients with a defective T-cell immune response or decreased cutaneous sensation and reduced personal awareness to debride the mites. Crusted scabies is also found in Australian aborigines with competent immunity.[7,8] The reason for the occurrence of crusted scabies in this community is remain unclear. Certain studies have shown that there is an association between scabies and HLA-A11. Hyperkeratosis of the skin, which is a prominent feature in crusted scabies, is probably associated with elevated levels of interleukin-4.[9,10] some authors have shown that cytotoxic T cells contribute to an imbalanced inflammatory response in lesional skin. In addition to that the lack of humoral immunity results in the failure of the skin immune system to mount an effective protection against mites, resulting in uncontrolled growth of the parasites.[11]

Diagnosis of scabies is depending on clinical history with itchy papules, excoriations, nodules, and other skin lesions with a family history of the same features gives a clue to the diagnosis. Confirmation of the diagnosis is made by identification of mites in burrows. Burrows are short wavy linear tracks present within the epidermis of web spaces of fingers, wrist, elbows, axillae, and around the umbilicus. Previously “ink test” was popular for the identification of burrows. Fountain pen-ink was smeared on the lesional skin and excess ink was wiped with alcohol to make the burrow visible.[12] Recently dermoscopy and reflectance confocal microscopy replaced the ink test dramatically. “jet-liner with its trail” or “delta glider” is the definitive dermoscopic pattern. The other dermoscopic features are visible black dots, blackish-brown globules and whitish structures. White wavy tracks and black dots correspond to burrow and eggs with scybala respectively.[13] Reflectance confocal microscopy comprises the tortuous segments with refractile round structures in crusted scabies.[14] These reports highlight the importance of non-invasive techniques in the detection of the burrow. The present case is confirmed as crusted scabies after 2 years of the

appearance of skin lesions. Some prodromal features like oral erosion, arthralgia and inability to complete gripping of hands had made some dilemmas in early diagnosis. Dermoscopy of scabies is well established and it demonstrates a triangular brown structure that corresponds to the front part of the mite.[15]

Conclusion:

Crusted scabies is extremely contagious and usually occur 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.

Conflict of interest:

None.

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