Crusted (Norwegian) Scabies Mimicking Psoriasis: A Case Report and Literature Review

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ABSTRACT

Scabies is a contagious skin infestation caused by the ectoparasite Sarcoptes Scabiei. Norwegian (crusted) scabies is a rare variant of scabies, primarily occurring in the settings of immunodeficiency or in bed ridden immobilized patients. Compared with classic scabies, Narwegian (crusted) scabies is associated with heavy mite burden and is a major source of infection that poses high risk to others, so it must be diagnosed early for proper management. we present a case of crusted scabies in a 49-year-old man who presented with thick hyperkeratotic psoriasiform lesions to draw attention to this possible clinical presentation of this rare form of scabies so that it should be considered in the differential diagnosis of psoriasiform dermatitis to allow early diagnosis and early management to prevent spread of the infection and to relieve the patient sufferings. The diagnosis was confirmed by skin biopsy and the patient was cured by a combination treatment of 25 % benzyl benzoate and oral ivermictin.

Keywords: Scabies, Crusted Scabies, Ivermectin, Immunodeficiency, Norwegian, Psoriasiform

INTRODUCTION

Crusted scabies (also known as scabies crustosa , Norwegian scabies, Boeck scabies, or keratotic scabies) occurs mainly in association with weakened cellular immunity, such as acquired immunodeficiency syndrome (AIDS), human T cell lymphotropic virus type 1 (HTLV-1) infection, leprosy, and lymphoma[1]. It also may occur in older adults and patients with Down syndrome[2]. Cases of Crusted scabies in association with long-term use of topical corticosteroids have been documented[3]. This variant is associated with higher mite burden compared with classic scabies.

Crusted scabies initially begins as ill defined, erythematous patches that quickly develop prominent scale[4]. Common sites of affection are the scalp, hands, and feet ,but Any skin area may be affected[4]. If left untreated, the disease usually spreads relentlessly and may eventually involve the entire integument. With time, Scales become warty, especially over bony prominences[4]. Crusts and fissures appear. The lesions of crusted scabies are malodorous.

Thickened, dystrophic and discolored nails are often seen in association with crusted scabies[4]. Strikingly, pruritus may be minimal or absent[4]. Complications as superimposed secondary bacterial infections with Staphylococcus aureus or Streptococcus pyogenes sometimes develop. Post-streptococcal glomerulonephritis represents a significant complication especially in resource-poor countries with endemic scabies[5,6]. Regarding Laboratory abnormalities it may include eosinophilia and increased immunoglobulin E (IgE) level[7] .

The differential diagnosis of crusted scabies is wide and it includes other disorders characterized by hyperkeratotic patches or plaques , such as psoriasis, seborrheic dermatitis, Darier disease, and palmoplantar keratoderma among others[4].

Identification of scabies mite, eggs, or fecal pellets (also known as "scybala") through microscopic examination is the diagnostic modality of choice[4]. Dermoscopy is a helpful adjunctive diagnostic tool. Skin biopsies are not usually necessary and are done to exclude other differential diagnosis with similar presentation[4].

CASE REPORT

A 49-year-old man presented to our dermatology clinic with pruritus of 4 months' duration that worsened at night in association with skin lesions. His complaints started as a generalized itching with few scattered papular lesions, the lesions then progressed to hyperkeratotic plaques and patches on acral and extensor distribution. He had been followed at a different institution and was unsuccessfully treated with topical corticosteroids (dermovate and betamethasone valerate) and oral isotretinoin in the assumption of psoriasis. The patient's wife and son had also complained of chronic pruritus that was intermittent and mild. However, they have never been treated.

Physical examination revealed large erythematous, hyperkeratotic, malodorus, scaly plaques on the sacrum, gluteal area, mon bupis, glans penis, scrotum, bilateral elbows, knees, extensor distal extremities, and ear helices (Figure 1).

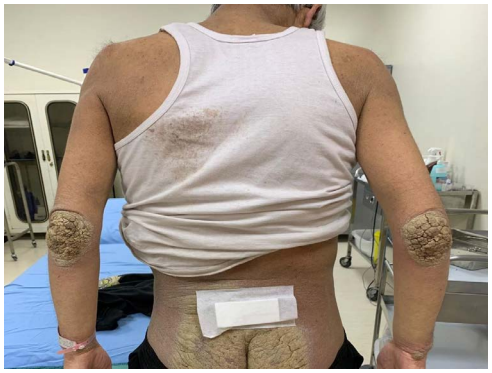

Figure 1: Thick scaly fissured plaques with" piled up sand" appearance on elbows, gluteal and sacral areas and skin biopsy site

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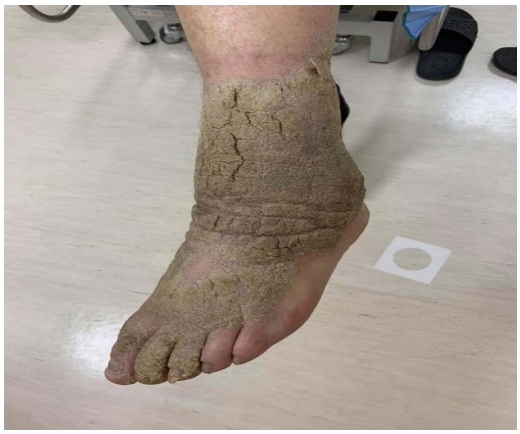

Figure 2: Thick scaly fissured plaques with" piled up sand "appearance on the ankle and dorsum of foot with nail changes

The patient's nails also were thickened and discolored (Figure 2). His medical history was remarkable for primary myelofibrosis diagnosed 4 years ago, to which he received ruxolitinib one year ago, splenic vein thrombosis (10 years), and primary hypothyroidism (one and a half year) that was currently being treated with levothyroxine.

Laboratory studies revealed eosinophilia of 17.1% (reference range, 0.9%–6%). Biochemistry showed LDH 854U/L (reference range 240-480 U/L), HIV test was negative, otherwise unremarkable.

A biopsy was taken from the thick, hyperkeratotic, crusted yellowish plaques in the sacral area. The epidermis showed massive hyperkeratosis, parakeratosis, burrows in the subcorneal layer containing a large number of mites and mite byproducts, psoriasiform epidermal hyperplasia and mixed dermal inflammatory cell infiltrate containing eosinophils (Figure 3). The diagnosed of crusted (Norwegian) scabies was made.

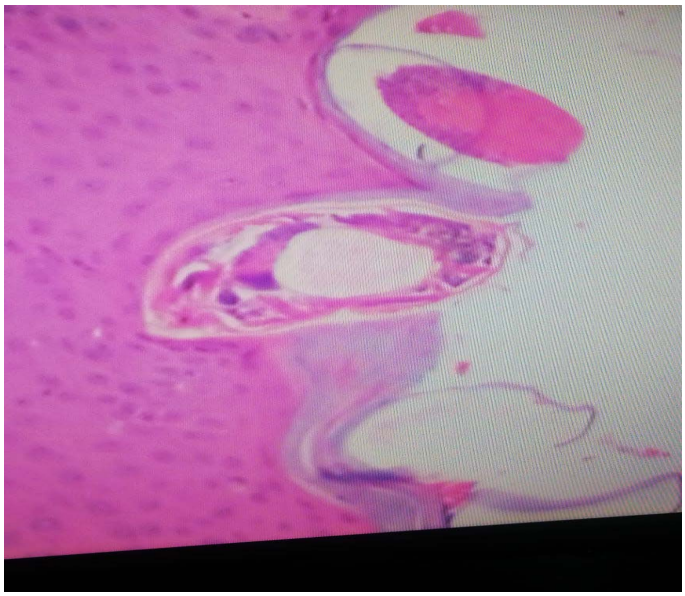

Figure 3: Hematoxylin and eosin stain, high power field view shows Sarcoptes scabiei mites in the horny cell layer

The Patient was planned to start on oral ivermectin 200mcg/kg once weekly; on day 1 and day 8, but due to insurance issues, patient received the topical treatment only initially Benzyle Benzoate 25% emulsion. Within 1 week, the patient started to improve.

Once oral ivermectn was available the patient received the scheduled dose (200mcg/kg on day 1 and day 8) and complete clearance of the lesions was seen (Figure 4) and (Figure 5). We have been following the patient or almost 5 months, patient is still symptom free and skin lesions free. The patient and his family were successfully treated with benzyl benzoate 25% lotion applied twice; 1 week apart

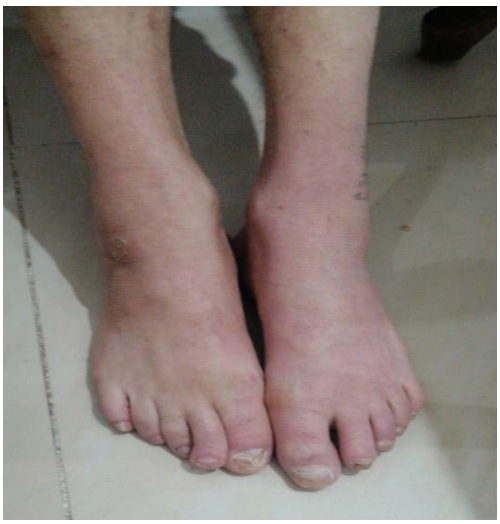

Figure 4: Complete recovery after combined treatment with topical benzyl benzoate 25% and oral Ivermectin

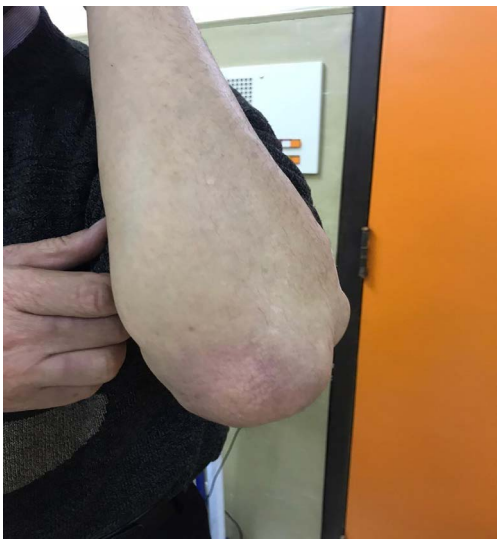

Figure 5: Complete recovery after treatment

DISCUSSION

Crusted scabies is an infestation of the horny cell layer of the skin that affects mainly immunosuppressed individuals. It can also occur in those with impaired sensory functions and/or ability to scratch (e.g., patients with leprosy or paraplegia) and in patients with Down syndrme[7-10]. Our patient, has been treated with ruxolitinib (JAK2 inhibitor) for his primary myelofibrosis and he also has hypothyroidism, both of these conditions May weaken his immune system making him susceptible for crusted scabies**.**

The clinical diagnosis may be guided by the yellow-to-brown crusts with "piled up sand" appearance of the affected area[9]. This thick crust with deep fissures with an erythematous background that was described

as a "rocky surface[9]. Our patient did show these clinical features (Figure 1) and (Figure 2). Crusted scabies may present as psoriasiform dermatitis[4], our patient presented as psoriasiform dermatitis and even missed as psoriasis. The diagnosis can be made by bedside tests like skin scraping[4], Dermatoscopy[10] and of course skin biopsy. In our case we went to skin biopsy to rule out other possible diagnoses and it was diagnostic.

The histopathological feature of crusted scabies shows marked ortho and parakeratotic acanthosis and dermal cellular infiltrate. The subcorneal layer shows burrows containing female mites. Every section shows many burrows[11]. Our patient did show these diagnostic histopathological features.

Concomitant oral and topical treatment is useful in patients with crusted scabies[12]. Our patient was treated with combination of topical agent benzyle benzoate 25% and oral agent ivermectin and this treatment approach was curable.

CONCLUSION

Although crusted scabies is rare it must be considered in the differential diagnosis of psoriasiform lesions.

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