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Norwegian Scabies in Immunosuppressed Patient Misdiagnosed as an Adverse Drug Reaction

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Short title. Norwegian scabies in immunosuppressed patient

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Ethics. Patient agrees with the depicting of picture of her affected areas of the body according to the Helsinki Declaration of 1975 as revised in Edinburgh 2000.

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Summary

Švecová D., Chmurová N., Pallová A., Babal P.: Norwegian Scabies in Immunosuppressed Patients Misdiagnosed as an Adverse Drug Reaction

Background Norwegian or crusted scabies is considered a rare affection and presumably represents an abnormal host immune response to Sarcoptes scabiei. As the condition mimics a range of dermatoses, it can be easily misdiagnosed and mismanaged. Case report A 85-year-old woman suffering from bullous pemphigoid was referred for evaluation with presumptive diagnosis of an adverse drug reaction to hydrochlorothiazide or lacipil. Systemic corticosteroid therapy as the mainstay in the control of the bullous skin disorder was increased, but the skin condition worsened. ELISA for the detection of antibodies against the drugs suspected of causing hypersensitivity was negative. Histological examination disclosed inflammatory cells in the upper dermis and parasites. Direct microscopy of the scraped material revealed numerous parasites of the Sarcoptes scabiei type. The patient was treated with topical keratolytics following traditional scabicides for twice as long in comparison with the standard protocol.
Conclusion Norwegian scabies may be misdiagnosed and mismanaged in immunosuppressed patients. The diagnosis of scabies should always be considered in immunosuppressed patients with pruritus.

Key words: Parasitic infestation – immunosuppressed patient – drug allergy.

Súhrn

Podklad. Scabies norvegica, alebo krustózny svrab, sa považuje za zriedkavú chorobu, a zvyčajne je spôsobená abnormálnou imunitnou odpoveďou hostiteľa na parazita. Diagnóza môže napodobovať rôzne dermatózy a preto býva chybne diagnostikovaná, čo vedie k chybnému manažmentu liečby.
Kazuistika. 85-ročná žena, ktorá trpela na bulózny pemfigoid bola konzultovaná pre podozrenie na alergickú reakciu na používané lieky hydrochlorotiazid alebo lacipil. Počas tohto obdobia bola dávka kortikosteroidu, ktorú používala pre základnú bulóznu diagnózu zvýšená, no kožný nález sa napriek tomu zhoršoval. ELISA na prítomnosť protilátok proti podozrivým liekom z hypersensitivity bola negatívna. Histologické vyšetrenie odhalilo zápalové bunky v hornej časti dermis a parazity. Priame mikroskopické vyšetrenie z materiálu zoškrabaného z ložísk zachytilo početné parazity Sarcoptes scabiei. Pacientka bola liečená lokálnymi keratolytikami s následnou aplikáciou tradičných scabicíd dva-krát tak dlho ako za bežných okolností.
Záver. Scabies norvegica môže byť mylne diagnostikovaný u imunosuprimovaných pacientov, čo vedie k chybnému manažmentu liečby. Diagnózu svrab je potrebné vylúčiť vždy, ak imunosuprimovaný pacient trpí na pruritus.

Kľúčové slová: infekcia parazitmi – imunosuprimovaný pacient – lieková alergia.

Introduction

It is assumed, that the Norwegian, or crusted scabies, represents an abnormal host immune response to the organism and could represent a serious therapeutic problem especially in immunosuppressed patient. The parasitic disorder could mimic various type of diagnosis that leads to misdiagnosis and mismanagement [1, 2]. The fulminant and highly infectious form of ordinary scabies infests epidermis and could lead to the generalization of the infestation that is accompanied by erythema with an erythrodermic appearance. Pruritus is variable and may be slight, intense, or absent. Crusted scabies could represent a serious diagnostic and therapeutic problem especially in immunosuppressed patient. We would like to draw further attention to this issue with rare Norwegian scabies that was misdiagnosed as an adverse drug reaction in immunosuppressed patient.

Case report

An 85-year-old woman suffering from bullous pemphigoid with four months history of confluent maculous exanthema on the skin and pruritus was referred for evaluation. A presumptive diagnosis of an adverse drug reaction was made at the Dpt.of Internal Medicine, where the patient was hospitalised with aggravation of her heart ischemic disease. Hydrochlorothiazide, and lacipil were suspected of drug allergy and changed for another group of drugs. The patient suffered from bullous pemphigoid from 2005 that was proved by histopathology and direct immunofluorescence. Her bullous disorder was controlled by the mainstay dose of prednisone 20 mg/daily and the patient did not suffer from clinical sign of immune disorder at the time of beginning of her present complains. The erythematous exanthema gradually covered the large skin surface accompanied with severe itching despite increased dose of prednisone to 60 mg/daily at the time of suspected drug allergy. Examination of her skin revealed disseminated and partial confluent erythematous exanthema on the trunk, back, upper limbs and on the inner site of her thighs (Fig. 1). Marked hyperkeratosis with fissures covered both sides of her hands (Fig. 2). Enzyme-linked immunosorbent assay (ELISA) for measuring levels of antibodies against hydrochlorothiazide and lacipil proved negative. Histological examination of the punch biopsy showed inflammatory cells in the upper dermis and disclosed parasites and faeces in epidermis burrows (Fig. 3). Direct microscopy of material scraped from hyperkeratotic

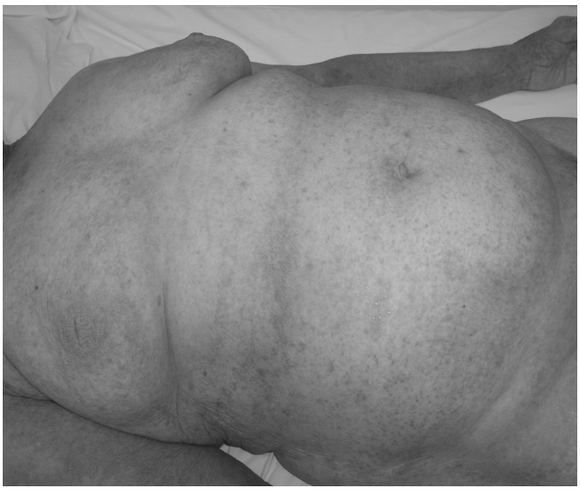

Fig. 1. Norwegian scabies affects an immunosuppressed patient. Disseminated partially confluent erythematous exantema was localized on the trunk, back, abdomen and on the inner site of upper limbs and things

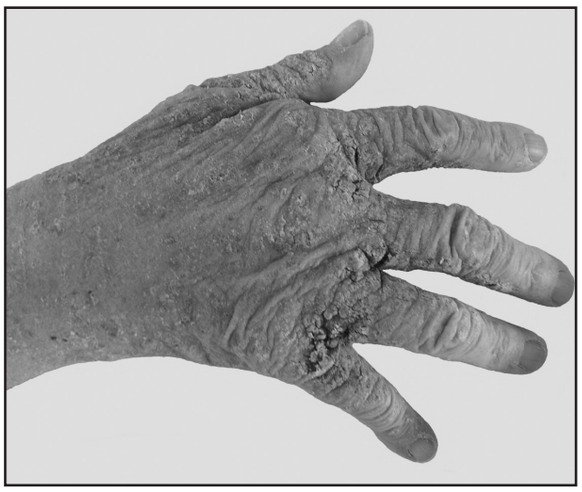

Fig. 2. Hyperkeratotic-crusted lesions were localised on the dorsal aspects of the hands and between the fingers.

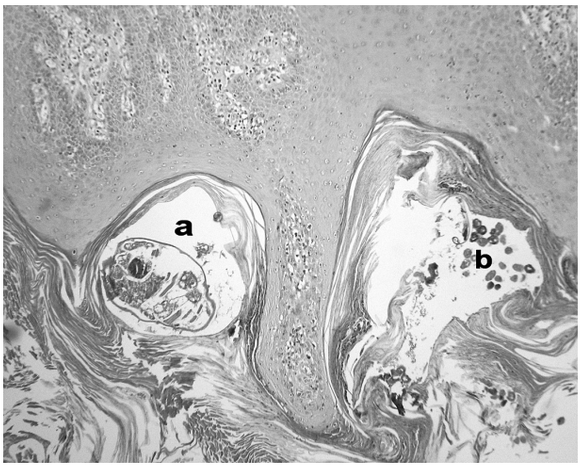

Fig. 3. Skin biopsy from the affected area with burrows in the corneum containing the mite body (a) and faeces (b) of Norwegian scabies. The epidermis is hyperplastic with acanthosis and non-specific mixed inflammatory reaction in the upper dermis. Hematoxylin and eosin, 200x

lesions on hand revealed numerous parasites of the *Sarcoptes scabies* type.

An occlusive dressing with 10% salicylic acid in Vaseline was applied on the hyperkeratotic plaques and this was following application of precipitated sulphur (10% in Vaseline, one a day for 6 days) over the entire body. The rash resolved gradually. She continued with the drugs previously used for concomitant disorders without adverse effects.

Discussion

Norwegian scabies can present atypically and mimic a range of other dermatoses. Presented case has been receiving immunosuppressive therapy for bullous pemphigoid and has been suffering from the scabies infestation resembling an adverse drug reaction. In an immunosuppressed host the scabies were reported resembling Darier's disease [1], contact dermatitis [2], generalized urticaria [3], dermatitis herpetiformis [4], bullous pemphigoid [5] and psoriasis [6]. Scabies infestation could have serious consequences – not only from the epidemiological point of view, but also from the likelihood of secondary bacterial infection that can give rise to threating complication- if the diagnosis is missed or delayed. Management of the crusted scabies may cause serious therapeutic problem. Ivermectin is increasingly used to treat scabies with hyperinfestation as in the Norwegian scabies. With adequate treatment there is excellent clinical response [5]. Ivermectin, as a human drug is not registered in lot of European countries and therefore its administration is not possible. Additive treatment includes keratolytic agents that could be added in attempt to reduce crusts and hyperkeratotic plaques as the condition could be resistant to traditional scabicides. Our patient was successfully treated first with keratolytics continuing with a traditional topical scabicides treatment, but the treatment took two times longer as in general. Scabies infection can have serious consequences if the diagnosis is missed or delayed not only from the epidemiological point of view, but also from the possibility of secondary bacterial infection that can give rise to threatening complication. In case of immunosuppressed patient suffering from pruritus the diagnosis of scabies should be always considered.

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