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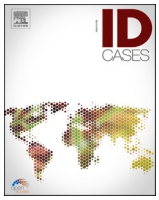

Case report

Breaking the Bubble: Bullous scabies – A case report

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ABSTRACT

The article describes a rare case of bullous scabies in a 30-year-old female. Scabies is a skin condition caused by the mite Sarcoptes scabiei and is typically transmitted through skin-to-skin contact. Bullous scabies is a rare presentation of scabies and is characterized by tense bullae and blisters that resemble bullous pemphigoid. The patient presented with pruritus, bullae on the hands and feet, and papules on various body parts. After a provisional diagnosis of scabies was made, microscopic examination confirmed the presence of mites and eggs. The patient was treated with Permethrin cream and antihistamines, and her symptoms regressed over the next two months. The husband and two other family members also reported improvement after treatment. While bullous scabies is an uncommon presentation of scabies, it is important to consider it in the differential diagnosis for patients presenting with bullae and pruritus. The exact pathophysiology of bullous scabies is yet to be determined, but theories include a staph aureus superinfection or production of autoantibodies in response to scabies lytic enzymes. Early recognition and appropriate treatment can lead to good outcomes in patients with bullous scabies.

Introduction

Scabies is a skin condition caused by the parasitic mite Sacroptes scabei. Transmitted primarily through skin-to-skin contact from one person to another, in some cases it can also be transmitted through fomites [1].

No gender or racial preference for scabies has been described. It does, however, affect certain social classes, with those with lower incomes carrying more of the disease burden [2]. Risk factors for scabies include crowded spaces, malnutrition, poor hygiene, migrant status, immune compromise, Alzheimer's and near contact [3,4].

Scabies cause a variety of presentations with described variants including typical scabies (most common), nodular scabies, Norwegian or crusted scabies, and bullous scabies [6]. Classically, it presents with excoriation, borrows, itching papules, and in some cases nodules [7]. Bullous scabies is the rarest presentation of scabies and differs from the classic form in that it mimics bullous pemphigoid and presents with tense bullae and blisters [8].

Globally, disease prevalence of scabies is about 200 million cases at one time [9]. However, less than 60 cases of bullous scabies have been described till this date throughout the world [10]. Reports of bullous scabies cases among young females are even rarer, making the case we are describing one of a kind.

Case presentation

Our case portrays a 30-year-old normotensive, normoglycemic female. The patient presented with a one-month history of pruritus, usually worse at night, affecting multiple parts of the body, but mainly hands, feet with a relative sparing of face and scalp. The patient was accompanied by her husband. The husband did not have any symptoms, nor was a history forthcoming of any such symptoms in close contact. On physical examination of the patient, there were tense bullae present on the dorsal aspect of the left hands, index and middle finger. Blisters were 0.5–0.7 cm in size.

Presence of a few papules on medial aspect of right foot, and dorsum of index and medial finger are shown below in Fig. 1:

Based on the physical examination which did not support a clear diagnosis, but under the suspicion of early onset bullous pemphigoid, a decision was made to give oral corticosteroid along with anti-histamine and to reexamine the patient after three weeks. Prednisone 50 mg once daily and antihistamine chlorpheniramine 4 mg once each night was

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prescribed.

On follow-up appointment of the patient twenty days after the initial one, worsening of the symptoms was observed. In spite of the medication being given and the patient being compliant with those, the tense bullae present on the hand had enlarged. Similar bullae had also appeared on the medial aspect of the right foot. The pruritic papules had increased in number and size. The patient was again accompanied by her husband. The husband on this occasion presented with symptoms and was also a diagnostic clue for our patient. He had a multitude of excoriations now, along with a number of papules on different body parts but predominately in the finger webs, inguinal, and axillary regions. Physical examination of the husband also shows linear borrows and lines typically seen with scabies. On further questioning, the patient gave a history of two other members of the family also suffering from similar symptoms as her husband. In view of this information, a provisional diagnosis of scabies was made. To confirm this, a microscopic evaluation was done. On the microscopic examination of the skin scrapping of the patient, Sarcoptes scabiei mite and eggs were observed. Similar observations were made in the husband.

The patient was prescribed Permethrin 5 % w/w Cream to be applied twice each week. Chlorpheniramine 4 mg once each night was continued. Diclofenac potassium 50 mg thrice daily was also initiated. Patient's husband was also prescribed Permethrin 5 % w/w Cream. The patient was followed up for the next two months. Patients skin lesions regressed and no new further lesions were observed. The patient's husband and two other family members also reported regression of the symptoms following treatment.

Discussion

Scabies as a disease is pretty common [2]. In most cases, however, it presents in a very typical fashion with burrows, papules, and inflammatory nodules that are intensely pruritic during the late hours of the day [3,4]. Bullous scabies, an atypical presentation of scabies is extremely rare by comparison. Bullous scabies presentation resembles more with Bullous pemphigoid than with the typical form of scabies.

While a handful of cases of Bullous scabies have been described, no definitive explanation of its pathophysiology has yet been established. A number of theories have been put forward in an effort to explain it. One of these was a Staph Aureus superinfection on previously existing scabies lesion [11]. Staph Aureus has indeed been cultured from scrapings of the lesions; in some instances; culture was negative on other occasions. Another theory put forward is the production of autoantibodies in response to the damage of the basement membrane by scabies lytic enzymes [12]. Immunofluorescence has shown deposition of C3 and IgG in basement membranes in a number of described bullous scabies cases. Also, BS cases have been described as immune deficient individuals and immune suppressing agents like steroids instead of curing diagnosed BS cases, seem to have no affect and on occasions actually worsen it [9,13]. In some described cases of BS, further work-up revealed presence of eosinophilia. This led to the formulation of the hypothesis that BS was a result of th2 immune response with secretion of interleukin 5 leading to development of bullae [14].

In the absence of definitive laboratory criteria, a clinical diagnosis is usually made for bullous scabies. A case is labeled as that of BS if there is a high index of suspicion and the following observations are made: bullae are present that are pruritic, treatment by steroids and other immune suppressing agents does cure it and anti-scabies medications cure the bullae. Scrapings and pathological findings are not a must, as mites and eggs of scabies can only be demonstrated in about half of the described cases. As the clinical presentation of bullous scabies and bullous pemphigoid are pretty similar, there remains a risk that some cases of BS are falsely labeled as those of BP.[5] It is recommended that proper follow-through of the patients be done to observe treatment response to anti scabies medication and to rule out development of subsequent bullae as a result of Bullous pemphigoid. Indeed, cases of development of bullae due to BP after treatment of bullous scabies have been described in the literature [15]. Thus, a diagnosis of bullous scabies is made only when bullous pemphigoid is ruled out through negative laboratory findings or negative treatment response to immune modulatory medication. Response subsequently to anti scabies medication, even in the absence of definitive histopathological finding, confirms the diagnosis of bullous scabies.

No particular age or gender predilection has been established for scabies. The limited numbers of BS cases described however, paint a curious picture. The majority of described cases show that BS is more common in elderly and males. Indeed, to our knowledge, only four cases of Bullous scabies have been described in females under the age of 35. This makes the case we are reporting only the fifth such instance.

Conclusion

The article reports a rare case of bullous scabies in a 30-year-old female patient. The patient presented with pruritus, bullae on the hands and feet, and papules on various body parts. Microscopic examination confirmed the presence of mites and eggs, and the patient was

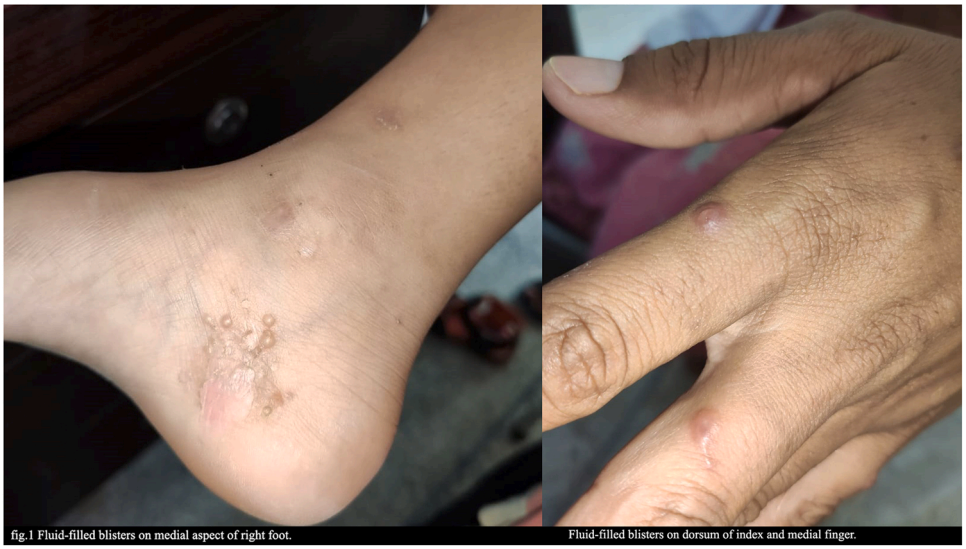

Fig. 1. Fluid-filled blisters on medical aspect of right foot. Fluid-filled blisters on dorsum of index and medical finger.

treated with Permethrin cream and antihistamines. Bullous scabies is a rare presentation of scabies, which is usually characterized by tense bullae and blisters. Further research is needed to better understand the exact pathophysiology of bullous scabies and determine why it is a rare presentation of scabies. Understanding the underlying mechanisms of bullous scabies could lead to improved diagnostic and therapeutic strategies for patients affected by this condition. Additionally, research is needed to determine the best way to prevent and control the spread of scabies, particularly in high-risk populations.

Ethical approval

Not required as we have acquired consent from the patient.

Source of funding

None.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

CRediT authorship contribution statement

All authors contributed towards data analysis, drafting and revising the paper, gave final approval of the version to be published and agree to be accountable for all aspects of the work.

Conflicts of Interest

None.

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