Case Report: Bullous Scabies in Two Children below 10 Years

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Abstract. Bullous scabies is an infrequent and atypical presentation of scabies, with predilection for elderly and males. Its median age of presentation is 70 years. We report two male cases of bullous scabies who were 7 years and 6 months old. Both patients had excellent response to sulfur 10% ointment alone and have had no recurrence in more than 3 months of follow-up.

INTRODUCTION

Bullous scabies (BS) is an infrequent and atypical presentation of scabies, presenting as blister formation with or without typical burrows, pruritic papules, and nodules of scabies. To our knowledge, less than 50 cases of BS have been reported^{1,2} since its first description by Bean in 1974.³ Among them, only four were found to be below than 10 years.^{2–5} Herein, we added another two cases with this rare condition who were younger than 10 years.

CASE REPORTS

Case 1. A 7-year-old boy presented with 2 months history of generalized and pruritic papules with nocturnal exacerbation over his whole body except the face and scalp and with multiple tense blisters on both hands. The lesions were increasing in numbers since its occurrence and had poor response to both topical dexamethasone cream and mometasone furoate as well as systemic antihistamines given previously. His elder brother had similar itching papules before the symptoms of the index case without association of blisters. Cutaneous examination showed discrete multiple papules involving his trunk, wrists and webs of fingers, and nodules on penis and scrotum. Excoriations and tense blisters, 0.5 to 1.0 cm in size and with clear fluid inside, were also noted on fingers and palms (Figure 1A and B). Nikolsky sign was negative for the blisters. His face and scalp were free from lesions. Based on the finding of scabietic mite by microscopic examination of a skin scraping, the patient was diagnosed with BS and was treated with topical sulfur 10% ointment alone, twice daily for 3 days, leading to rapid improvement in the lesions and itching, after treatment of two cycles. In 3 months of follow-up, no recurrence as well as any other kind of lesions occurred. His elder brother was also diagnosed with scabies and cured by sulfur 10% ointment.

Case 2. A 6-month-old boy was referred because of increasing numbers of papules and nodules over the whole body with predominance on trunk and hands. The lesions had moderate

response to topical mometasone furoate initially, but afterward, they failed to respond, thus associated with increasing lesions. His mother had pruritic papules on her wrists and hands, without the association of blisters, and the pruritus was worse at night. Physical examination revealed multiple discrete papules, papulovesicles, and nodules over his whole body except the scalp, with acro-predilection. Intact tense blisters about 0.5–0.8 cm in size were also noted on the fingers and wrists (Figure 2), with negative Nikolsky sign over the lesions. Scraping the papular lesions on the hand revealed scabietic mites. The patient was diagnosed with BS, and was treated with topical sulfur 10% ointment alone, twice daily for 3 days, leading to rapid healing of the lesions including the bullae. His mother was diagnosed with scabies and cured by the same ointment. In 3 months of follow-up, no relapse or any other associations occurred.

DISCUSSION

Although well-defined diagnostic criteria for BS do not exist at present, based on our prior described practical approach for diagnosis of BS,¹ and the excellent response to medication, the bullous lesions in both patients can be considered to be caused by scabies and can be diagnosed as BS rather than any other bullous diseases such as bullous impetigo. The previous review demonstrated that BS commonly afflicts the elderly with a median age of 70 years with a male predilection,¹ and only four were younger than 10 years.^{2–5} However, Boralevi et al.⁶ reported that 6.2% patients of scabies (12 out of 193) below 15 years presented blisters, implying that BS might not be so rare in children. Interestingly, the present two cases were boys with of age 7 years as well as 6 months and were diagnosed by our groups within only 2 years, suggesting that BS in children may be more common than our anticipation indeed. The rarity of the report of BS in children may be because it is not properly diagnosed or neglected as a disease by the doctors when the child was referred for consultation. As five cases of BS,^{1,7,8} including the present two, have been diagnosed by the present author's group in less than 8 years, we support the opinions that BS may have been largely misdiagnosed or neglected in China.¹

The mechanisms of bullous formation remain unknown, although deposition of complement three or various immunoglobulins alone or in various combinations, or circulating IgG were detected in some of the cases.¹ The possible pathogenesis for BS is considered including autoeczematization, superinfection, the direct injury or secretion of lytic enzymes by the scabies mites, and cross-reactivity of scabies protein

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FIGURE 1. (A) Discrete multiple papules and tense blisters with clear fluid (the white arrow) distributed on the left hand (the insert is the magnification of the blister) and (B) excoriations on palm. This figure appears in color at www.ajtmh.org.

with basement membrane zone antigens.¹ The previous studies reported that BS showed poor response to immunosuppressants but excellent response to antiscabietics, suggesting that immunological reaction has not played a key role in the pathogenesis of BS.¹ We cannot exclude the possibility that the insufficient connection of epidermis and dermis in the early age and late age might be a trigger factor for the formation of the blisters. As both vesiculobullous and papular lesions of the present cases disappeared after being treated with antiscabietics alone as in the previous reports, thus supporting the mechanism that bullous lesions in scabies may be only a scabies-induced immune response.^{1,8} As the elder brother of case 1 and the mother of cases 2 had scabies before the index cases of BS, this suggests that the relatives were the sources of infection, respectively. However, both relatives had no associations of bulla formation, indicating that scabies-induced bullae might be only related to the patient individuals but not to scabies itself indeed.

Because the lesions of some bullous disorders, such as pemphigus, bullous pemphigoid (BP), insect bite reaction, bullous impetigo, acquired epidermolysis bullosa, etc., mimic that of BS, it is important for the doctors to distinguish these diseases. As BP shares similar clinical and pathological features with BS, it is difficult to distinguish them sometimes.^{1,9} We

FIGURE 2. Discrete papules and intact tense blisters about 0.5 to 0.8 cm in size on the hand. This figure appears in color at www.ajtmh.org.

support the prior opinions that the suggestive history, itching papules with contagiosity and good response to antiscabietics are important clues for the diagnosis of BS.¹ Of course, the dermatologists should be aware of the possibility that scabies may accompany other bullous disorders, such as the concomitance of scabies and BP, BP subsequent to BS, and even recurrent BS.^{1,7,9} In such conditions, presumptive treatment may be tried to confirm the diagnosis of BS. Positive circulating antibodies against either BP180 or BP180 and BP230 may be beneficial for ruling out the diagnosis of BS.¹

The therapies of BS mimic those of classical scabies including both systemic and topical treatments.¹ The systemic therapies for common scabies include oral ivermectin and permethrin, which are effective in eradicating scabies and remain the treatment of choice. Oral ivermectin has not been tested on infants, and is not recommended for children below 6 years of age. The topical agents include permethrin, ivermectin, lindane, benzyl benzoate, crotamiton, malathion, and sulfur preparations. Permethrin is considered the topical treatment of choice for many forms of scabies, irrespective of age, and the 5% preparation is approved for the treatment of scabies for infants 3 months and older.¹⁰ Lindane is effective, but has potential neurotoxicity, and resulted in limited use in children. Sulfur preparation or benzyl benzoate are often used in the developing world because their low costs.¹⁰ Generally, doctors always select drugs based on their personal predilection, local availability, and the cost.¹ The results of the present study confirmed that topical agents are optional.

In conclusion, the dermatologists should be aware of the possibility that BS may occur in children presenting with blisters along with itching papules which are contagious, although it is rarely reported in young people.

CONSENT

Written informed consents were obtained from the guardians of both patients for publication of these case reports and any accompanying images, respectively.

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