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CASE REPORT

Bullous Scabies Responding to Ivermectin Therapy

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KEYWORDS
Bullous scabies;
Bullous pemphigoid;
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Abstract
Bullous scabies is a rare disease that is usually diagnosed in elderly patients. The clinical, histological, and immunological findings are identical to those of bullous pemphigoid. In a review of the literature, we found reports of 24 cases. We present a new case of bullous scabies in a 72-year-old man. The lesions responded to treatment with oral ivermectin.

PALABRAS CLAVE
Sarna ampollosa;
Penfigoide ampolloso;
Ivermectina

Sarna ampollosa con respuesta terapéutica a la ivermectina

Resumen
La sarna ampollosa es una enfermedad infrecuente que se suele diagnosticar en ancianos. Los hallazgos clínicos, histológicos e inmunológicos son idénticos al penfigoide ampolloso. En una búsqueda bibliográfica hemos encontrado 24 casos descritos. Aportamos un nuevo caso de sarna ampollosa en un paciente de 72 años que respondió al tratamiento con ivermectina oral y revisamos la literatura médica.

Introduction

Scabies is the disease caused by infestation of the skin by the parasite *Sarcoptes scabiei*. While it can affect individuals of all ages, it is most common in children and in the elderly. The elderly are likely to present extensive and somewhat atypical lesions in the form of wheals, eczema-like plaques, or blisters. We review the literature on bullous scabies and describe the case of an elderly man whose disease responded to treatment with ivermectin.

Case Report

The patient was a 72-year-old man with a history of type 2 diabetes mellitus, hypertension, and chronic renal failure; on treatment with metformin, thiazides, and enalapril. He consulted for pruritic lesions that had appeared 4 months earlier and that did not respond well to therapy with prednisone (5 mg/d) and hydroxyzine.

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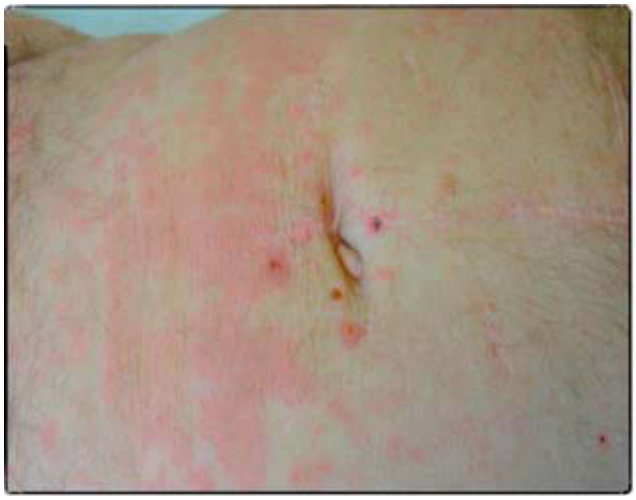
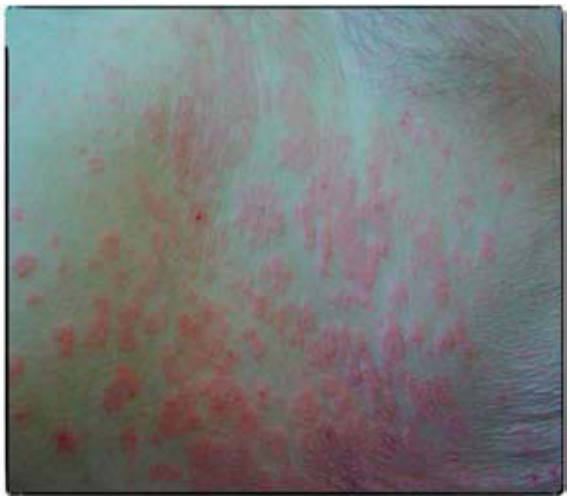

Figures 1 and 2 Scaly erythematous plaques with scratching lesions on the trunk.

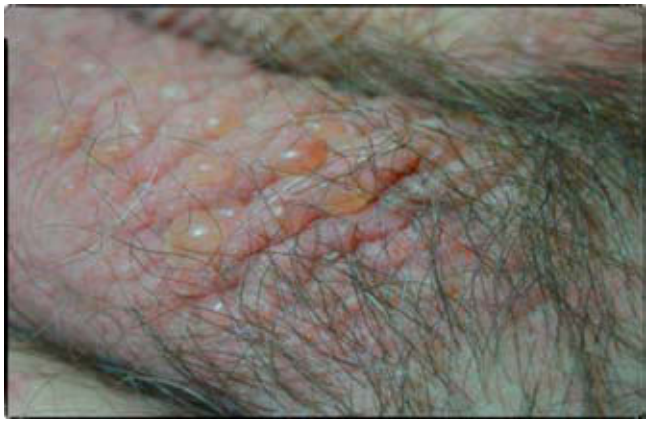

Figure 3 Tense blisters on the scrotum

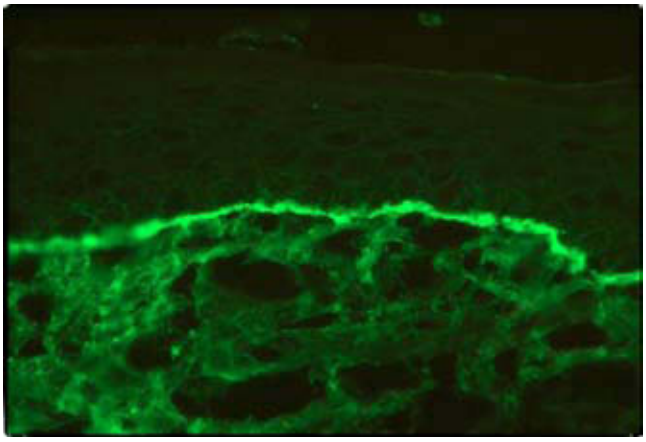

Figure 4 Positive immunofluorescence with linear deposits of IgG on the basement membrane.

Physical examination revealed scaly erythematous papules that coalesced to form generalized plaques and that had first appeared on the trunk (Figures 1 and 2). Pruritus was so severe that it interfered with activities of daily living and with sleep. A diagnosis of scabies was established and treatment was started with topical 5% permethrin. The pruritus did not improve, however, and 7 days later, tense blisters filled with clear fluid and measuring 1 to 5 cm began to appear on erythematous skin on the genitals (Figure 3) and in the inguinal folds. Nikolsky sign was negative and the scaly erythematous plaques took on the appearance of urticaria. There was no involvement of the palms, soles, mucosas, or face. A blood test showed normocytic anemia; 14 570 leukocytes/mL (82% polymorphonuclear cells, 11% lymphocytes, and 7% eosinophils); creatinine 2.5 mg/mL; normal protein electrophoresis; and normal antitransglutaminase antibodies. The chest radiograph was also normal. One of the blisters was examined using conventional histology and direct immunofluorescence. A perivascular infiltrate with eosinophils in the papillary

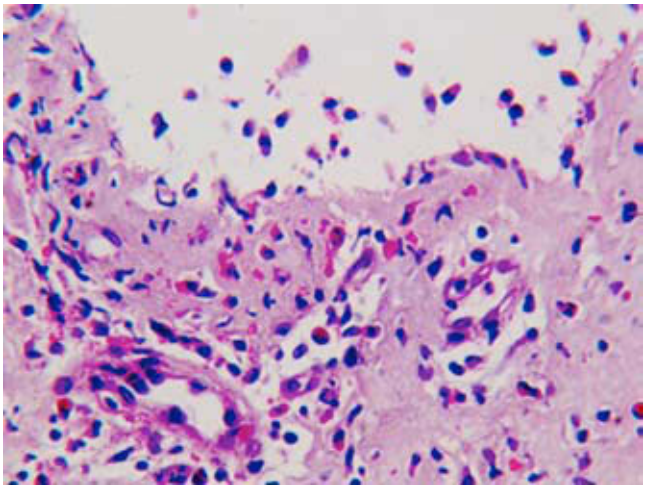

Figure 5 Hematoxylin-eosin stain of one of the blisters on the scrotum, in which a superficial perivascular infiltrate with abundant eosinophils can be seen. Note the total absence of epidermis.

dermis, an absence of epidermis, and linear IgG and C3 deposits on the basement membrane (Figures 4 and 5) were observed. Indirect immunofluorescence was negative. We diagnosed bullous pemphigoid and began treatment with prednisone at a dose of 1 mg/kg/d. However, the patient presented a clinical deterioration, with the appearance of new lesions and palmar-plantar hyperkeratosis. This clinical progression and the occurrence of new cases of the disease in the patient's family environment led us finally to establish a diagnosis of bullous scabies. The administration of 2 doses of ivermectin (200 µg/kg [17 mg]) 10 days apart and of a topical preparation made up of 10% urea, 5% permethrin, 0.1% triamcinolone acetonide, and 0.1% gentamicin, achieved resolution of all the lesions and the pruritus. The oral corticosteroids were withdrawn over the course of the following 3 weeks, and at 6 months' follow-up the patient remained asymptomatic with no new lesions.

Discussion

Bullous lesions are an atypical manifestation of scabies that is most commonly seen in the elderly. The condition resembles bullous pemphigoid both clinically and histologically,[1] and for this reason has traditionally been called bullous pemphigoid-like eruption.[2] The 2 entities can be indistinguishable, especially when skin scraping shows neither the parasite nor mite feces. Bean[3] described the first case in 1974 and 24 cases have been described in the literature since then.[4]

It has been suggested that the mechanism of blister formation in this condition might involve the persistence of *S scabiei* in the skin for an extended period of time. This may trigger a specific immune response that activates T helper 2 cells, thereby elevating levels of interleukin 5 and, consecutively, of eosinophils with the secretion of proteolytic enzymes near the basement membrane, leading finally to the formation of blisters.[5]

There has been some debate as to whether these blisters are features of true scabies or rather of bullous pemphigoid triggered by the parasite.[6] In order to distinguish between the 2 entities, Nakamura et al[7] reviewed the cases of bullous scabies reported in the literature and compared them with those of patients who had been diagnosed with both bullous pemphigoid and scabies. They found positive immunofluorescence with granular or linear deposits of IgG or C3 in 73% of cases of bullous scabies. Indirect immunofluorescence, however, was negative in most cases, with only 1 case positive for IgG, albeit with low values. In patients with both bullous pemphigoid and scabies, on the other hand, linear deposits of IgG and C3 were found. Indirect immunofluorescence was also positive, with high IgG values. In conclusion, indirect immunofluorescence

Table Cases of Bullous Scabies Reported in the Literature

Patient (year)	Author	Age	Sex	DIF	IIF	Treatment
1 (1974)	Bean[3]	1	M	ND	ND	1% GBH
2/3 (1981)	Ponze-Navarez	9/13	W/W	ND/ND	ND/ND	10%Benzyl benzoate
4 (1989)	Viraben	34	W	--	-	10%Benzyl benzoate
5/6 (1991)	Brawan et al[2]	67/76	M/M	Granular IgG/ linear IgG and C3	-/ND	1% GBH
7 (1991)	Brawan et al	76	M	Linear IgG and C3	-	1% GBH
8 (1992)	Kurosawa et al	76	W	ND	ND	1% GBH
9 (1993)	Ostlere et al	36	W	Linear C3	IgG anti-BGM ×10	1% Malathion
10 (1993)	Said et al	74	M	-	ND	1% GBH, 1% lindane
11 (1993)	Parodi et al	69	M	Linear IgM and C3	-	1% GBH
12 (1995)	Veraldi et al	66	W	Granular C3	-	25% Benzyl benzoate
13 (1995)	Haustein et al[8]	73	M	Granular C3-	-	5% Permethrin
14 (1996)	Slawsky et al	76	M	Linear IgG and C3	-	5% Permethrin, 1% GBH, 6% sulfur
15/16 (1997)	Clyti et al	73/89	M/W	-/-	ND/ND	25% Benzyl benzoate
17/18 (2000)	Bosch-Garcia et al[10]	70/72	W/M	-/-	ND/ND	5% Permethrin/Oral ivermectin
19/20 (2001)	Bornhovd et al[5]	76/89	M/M	Granular IgG, C3 and C4 /linear IgG and C3	-/IgG 1:160	1% GBH
21 (2003)	Brar et al	52	M	-	-	5% Permethrin
22 (2003)	Shahab[1]	4	M	ND	ND	5% Permethrin
23 (2003)	Nakumura et al[7]	71	M	Linear IgG and C3	-	Oral ivermectin
24 (2006)	Ansarin et al[4]	42	M	-	ND	1% Lindane
25 (2006)	Galvany et al	72	M	Linear IgG and C3	-	Oral ivermectin

Abbreviations: anti-GBM, anti-glomerular basement membrane antibody; DIF, direct immunofluorescence; GBH, gamma benzene hexachloride; Ig, immunoglobin; IIF, indirect immunofluorescence; M, man; ND, not done; W, woman.

that is either negative or that shows low values supports a diagnosis of bullous scabies.[6] The Table summarizes the cases of bullous scabies described in the literature.

Good responses (with resolution of the blisters) have been reported to topical therapy with 5% permethrin administered on days 1, 8, and 15,[8,9] 1% lindane,[2] 1% gamma benzene hexachloride, and 1% malathion. In cases where palmar-plantar hyperkeratosis is present, a keratolytic agent such as urea or salicylic acid should be added so that the active ingredient penetrates the skin.[7] Of the cases reviewed, only 2 were treated with oral ivermectin (12 mg in 2 doses administered 10 days apart), with no improvement in pruritus until a month and a half after therapy. In our patient, there was complete remission of both the pruritus and the blisters 15 days after treatment with ivermectin at a dose of 200 μg/kg in 2 doses (on days 0 and 10); at 6 months' follow-up, the patient remained asymptomatic and no new blisters had appeared. While the authors of a recent evidence-based study concluded that 5% permethrin is more effective than oral ivermectin for the treatment of scabies,[11] they made no specific reference to bullous scabies. In our case, however, we reached the opposite conclusion, as the patient did respond to oral ivermectin. A possible explanation for this difference might be that, due to his age, our patient was unable to apply the permethrin correctly.

We report a new case of bullous scabies in an elderly patient with positive direct and negative indirect immunofluorescence that showed a good therapeutic response to oral ivermectin.

Conflict of Interest

The authors declare no conflicts of interest.

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