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# A Rare Association of Psoriasis Vulgaris with Bullous Pemphigoid

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## ABSTRACT

The concomitant occurrence of psoriasis vulgaris and bullous pemphigoid in a patient is a rarity. We describe a 45-year-old male with 8-year history of plaque-type psoriasis who presented with disseminated tense bullae and psoriatic erythroderma. Skin biopsies showed the typical histologic traits of bullous pemphigoid and direct immunofluorescence showed deposition of IgG and C3 in a linear pattern along the basement membrane zone confirming the diagnosis. The bullous eruption and erythroderma were successfully treated with intramuscular and oral methotrexate.

**Keywords:** Psoriasis vulgaris, bullous pemphigoid, psoriatic erythroderma, direct immunofluorescence, methotrexate

Psoriasis vulgaris and bullous pemphigoid represent two clinically well-characterized, chronic and inflammatory skin diseases. Seldom do they occur concomitantly in a patient and the pathogenic implications of this phenomenon are unknown. Here we report the appearance of disseminated tense bullae in a 45-year-old male with psoriatic erythroderma and its successful treatment with methotrexate.

## CASE REPORT

A 45-year-old male, who is a known case of psoriasis for 8 years, presented with extensive plaques involving most of the body surface area along with fluid filled lesions of 10 days duration over both the hands and thighs. The lesion had first appeared over the right thigh and then progressed to involve the left thigh and left arm. Prior to the appearance of lesion, he had applied homeopathic medication to bring psoriasis under control.

## EXAMINATION

The patient had multiple tense bullae along with a few erosions over anteromedial aspect of both thighs,

posteromedial aspect of upper one-third of both legs and medial aspect of left arm (Fig. 1).

He also had extensive erythematous, scaly, discoid plaques coalescing over the scalp, face, abdomen, back, bilateral arms and lower limbs covering more than 90% of body surface area. Islands of normal skin were seen over chest, scapular area, groin and lower one-third of both lower limbs along with sparing of both ears and infralabial area (Fig. 2).

## Investigations

Routine blood investigations were within normal limits except for raised erythrocyte sedimentation rate (ESR) of 35 mm at the end of 1st hour and neutrophilic leukocytosis seen in peripheral smear. Tzanck smear



**Figure 1.** Multiple tense bullae over the anteromedial aspect of right thigh.

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**Figure 2.** Multiple erythematous coalescing plaques.

from a fresh bullae revealed inflammatory cells. He was subjected to skin biopsies from 3 sites; first one from a psoriatic plaque on the right thigh, second, an intact bulla on the left thigh and the third one from normal skin over left thigh which was sent for direct immunofluorescence. Histopathologic findings of the first specimen confirmed psoriasis (Fig. 3), that of the second specimen was suggestive of bullous pemphigoid as it showed a blister at the subepidermal region containing few neutrophils, eosinophils, lymphocytes and fibrin along with mild inflammatory infiltrate in the dermis (Fig. 4). Direct immunofluorescence demonstrated deposits of immunoglobulin G (IgG) and C3 in a linear pattern along the basement membrane zone confirming the diagnosis of bullous pemphigoid.

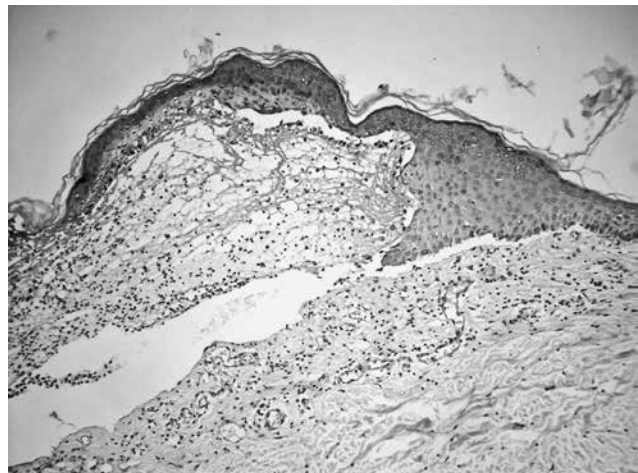
### Treatment

In view of erythrodermic psoriasis and normal hematologic, hepatic and renal profiles, he was administered intramuscular injection methotrexate 7.5 mg. Within 4 days, he showed considerable improvement in both the bullous and psoriatic lesions without exhibiting any signs of intolerance.

The following week, he was administered second dose of intramuscular injection methotrexate 7.5 mg. As there was a subsidence in his lesions, he was discharged with oral methotrexate 7.5 mg, once a week in three divided doses at 12-hourly interval along with folic acid supplement. His hematologic, hepatic and renal profiles were within normal limits on review after 2 weeks and after 4 weeks and we noticed near total resolution of his lesions.



**Figure 3.** Histopathologic section of the psoriatic plaque.



**Figure 4.** Histopathological section of the intact bulla showing subepidermal blister with infiltrates of neutrophils and eosinophils.

### DISCUSSION

Psoriasis is a chronic inflammatory skin disease, with a strong genetic basis, characterized by complex alterations in epidermal growth and differentiation and multiple biochemical, immunologic and vascular abnormalities. Clinically, psoriasis manifests in several ways but most commonly, the disease presents as chronic plaque psoriasis, characterized by symmetrical, erythematous, well-defined, scaly papules and plaques. The lesions are stable and remain unchanged for a long period but may become confluent and extensive resulting in psoriatic erythroderma, which is one of the indications of methotrexate therapy. There are several associations of psoriasis including arthritis, immunobullous disorders, vitiligo, metabolic syndrome and synovitis, acne, pustulosis, hyperostosis and osteitis (SAPHO) syndrome. Although incidence of

immunobullous disorders with psoriasis is not frequent, more than 50 cases have been reported in literature, with co-existing psoriasis and bullous pemphigoid. Bullous pemphigoid is an acquired nonscarring autoimmune blistering disease of the elderly age group characterized histologically by subepidermal bullae and immunopathologically by deposition of antibodies and complement along the epidermal basement membrane zone. The pathogenic relationship between psoriasis and bullous pemphigoid is unclear but it has been postulated that the autoimmune process responsible for bullous pemphigoid lesions may be induced by ultraviolet light therapy, topical corticosteroids and/or the inflammatory processes that occur in psoriasis.

Methotrexate is a folic acid analog which inhibits folate dependent enzyme aminoimidazolecarboxamide ribonucleotide formyltransferase (AICART), thus inhibiting hyperproliferation of epidermal cells but more importantly it inhibits the proliferation of lymphoid cells. It also has activity as a immunosuppressive agent, probably because of inhibition of DNA synthesis in immunologically competent cells. The drug can suppress primary and secondary antibody responses. Hence, it may have a beneficial role in curbing psoriasis as well as vesiculobullous eruptions.

#### LEARNING POINTS

- In the rare event of encountering vesiculobullous lesions in psoriasis, bullous pemphigoid should

be considered as the foremost differential diagnosis.

- Methotrexate, well known for its use in psoriasis, is also therapeutic in bullous pemphigoid.

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