

## Pemphigus Foliaceus Developing on Pre-existing Psoriasis: A Supposed Pathogenetic Linkage

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Sir,

The literature reports several cases of psoriasis associated with bullous diseases, the most frequent of which is bullous pemphigoid (1–3). By contrast, pemphigus-related disorders are less frequently reported in association with psoriasis. We report the case of a patient with long-standing psoriasis who developed pemphigus foliaceus and discuss the possible pathogenetic relationship between the two dermatoses.

### CASE REPORT

A 77-year-old woman developed diffuse erosive, scaling and crusted lesions 2 months before her first visit. She had suffered from psoriasis vulgaris for 7 years and diabetes mellitus type II for over 10 years. Her mother had suffered from the same diseases. At the time of admission, she was on insulin s.c. and used topical calcipotriol on her psoriatic plaques.

Clinically, the periorificial regions of the face, the trunk and the upper limbs showed multiple erosions studded with yellowish scales and crusts (Fig. 1a). Lesions differed in size, in the presence of an epithelial border or in the layer of the scales, some thin and some thick and tight. Furthermore, she had infiltrated erythematous plaques with thick white scales in the sacral region (Fig. 1b) and a mild pityriasis-like scaling on the scalp. Skin involvement was extensive, while oral and genital mucosal surfaces were spared.

Laboratory investigations were within normal limits, except for hyperglycaemia (repeatedly higher than 200 mg/dl) and HbA1c (8.8%). Indirect immunofluorescence (IIF) performed on monkey oesophagus revealed an intercellular deposit of IgG antibodies with a titre of 1:320 and major deposition in the subcorneal location. HLA typing demonstrated the following alleles: A2, B8, DR4 and DQ2.

Histologic examination of an erosion documented acantholysis of the upper epidermis, with moderate dermal infiltration of lymphocytes and eosinophils (Fig. 2a), while direct IF on perilesional tissue detected intercellular deposition of IgG and C3 (Fig. 2b). The ELISA test demonstrated circulating anti-desmoglein 1 (Dsg-1) autoantibodies. By contrast, histologic examination of an erythematous and scaly plaque of the back showed parakeratosis and Munro microabscess formation, elongation of rete ridges, dilated papillary blood vessels and a mixed mononuclear and neutrophil infiltrate in the dermis (not shown).

Once diagnosed as suffering from pemphigus foliaceus and psoriasis vulgaris, the patient was started on low dose of methylprednisolone (32 mg daily), in order to avoid hyperglycaemic effect of steroids and psoriasis

rebound expected after higher steroid doses. In the following 3 weeks a complete remission of erosive manifestations was observed, along with the persistence of minimal psoriatic stigmata on elbows and knees.

### DISCUSSION

To the best of our knowledge, only 5 cases have previously been described in the literature with coexistence



Fig. 1. Multiple erosions of the periorificial regions of the face (a). Erosions with yellowish scales and crusts and erythematous scaly plaques of the back (b).

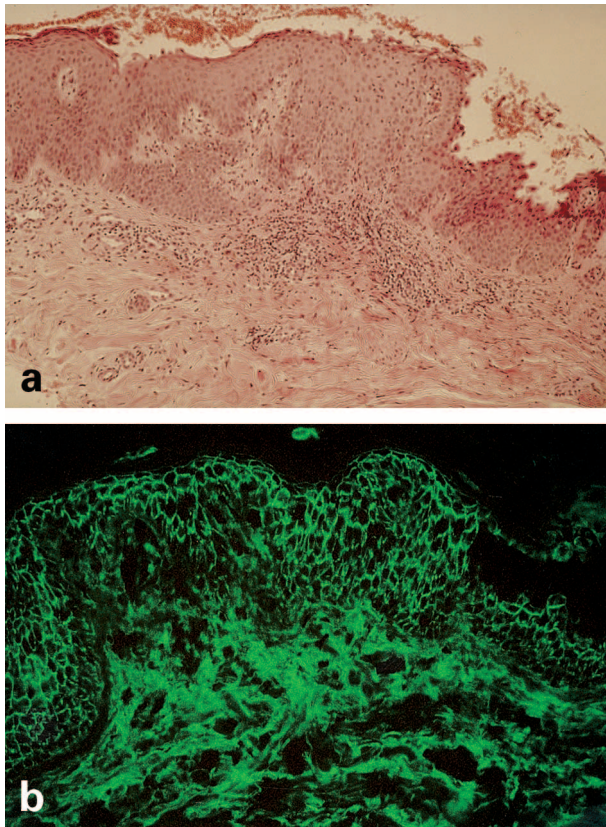


Fig. 2. Acantholysis of the upper epidermis, moderate dermal infiltration of lymphocytes and eosinophils from an erosive lesion (a). (Haematoxylin and eosin, 200 $\times$ ). Direct immunofluorescence on perilesional tissue showing intercellular IgG with major deposition in subcorneal location (b).

of psoriasis and pemphigus foliaceus (4–8) similar to that in our patient.

With the exception of a single observation in which the 2 dermatoses arose simultaneously (4), in all reports pemphigus was developing on pre-existing untreated psoriasis. In fact, in treating psoriasis there are many drugs, as well as PUVA therapy, that can damage the dermo-epidermal junction or evoke the production of autoantibodies, thereby inducing autoimmune bullous diseases such as pemphigus vulgaris or bullous pemphigoid (3).

Moreover, all patients showed both scaly plaques and bullae, distributed on the predilection sites of the two disorders, with an immunopathological profile consistent with the diagnosis of pemphigus. Histological pattern was dependent on the type of lesion chosen for biopsy, featuring either parakeratosis with elongation and oedema of the papillae or acantholysis. Only one of the reports (7) showed a “mixed” histological pattern, with an intraepidermal bulla containing acantholytic keratinocytes and neutrophils, but overlying acanthosis, spongiform pustules of Kogoj and hypogranulosis. The clinical picture on the biopsy site was not described.

Not many data are available regarding the genetic

background of the affected patients, because in only one case (5) was HLA typing performed, disclosing the following haplotype: DR1, DR4 (present in our case, too), DQw5 and DQw7. It is well known that DR4 allele is strongly associated with pemphigus vulgaris (95%) (9).

Although psoriasis is so common that a chance combination with pemphigus foliaceus cannot be excluded, the rarity of this association suggests that these cases are not merely coincidental.

Furthermore, even if psoriasis is not considered universally as an autoimmune disorder, immunological mechanisms are known to participate as psoriasis improves on immunosuppressive therapy. Concerning a possible pathogenic relationship between the 2 dermatoses, it has also been shown that plasminogen activation plays an important role in acantholysis and plasminogen activator is increased in psoriatic lesions. Alternatively, the inflammatory dermatosis could be considered a local triggering factor, which may facilitate blistering in patients with autoantibodies through an epitope-spreading mechanism.

Finally, according to Tomasini et al. (7), it is assumed that in psoriatic patients the chronic or acute antigenic stimulation, induced either by beta-haemolytic Streptococci or by other microbial superantigens, could induce high levels of IgG against surface antigenic determinants on keratinocytes leading to the development of bullous disorders.

#### REFERENCES

1. Pasic A, Ljubojevic S, Lipozencic J, Marinovic B, Loncaric D. Coexistence of psoriasis vulgaris, bullous pemphigoid and vitiligo: a case report. *J Eur Acad Dermatol Venereol* 2002; 16: 426–427.
2. Denli YG, Uslular C, Acar MA, Boga H, Uzun S, Memisoglu HR, et al. Bullous pemphigoid in a psoriatic patient. *J Eur Acad Dermatol Venereol* 2000; 14: 316–317.
3. Kirtschig G, Chow ET, Venning VA, Woinarowska FT. Acquired subepidermal bullous diseases associated with psoriasis: a clinical, immunopathological and immunogenetic study. *Br J Dermatol* 1996; 135: 738–745.
4. Lee CW, Ro YS, Kim JH. Concurrent development of pemphigus foliaceus and psoriasis. *Int J Dermatol* 1985; 24: 316–317.
5. Perez GL, Agger WA, Abellera RM, Dahlberg P. Pemphigus foliaceus coexisting with IgA nephropathy in a patient with psoriasis vulgaris. *Int J Dermatol* 1995; 34: 794–795.
6. Lee CW, Ro YS. Pemphigus developed on pre-existing dermatoses. *J Dermatol* 1994; 21: 213–215.
7. Tomasini D, Cerri A, Cozzani E, Berti E. Development of pemphigus foliaceus in a patient with psoriasis: a simple coincidence? *Eur J Dermatol* 2000; 8: 56–59.
8. Yokoo M, Oka D, Ueki H. Coexistence of psoriasis vulgaris and pemphigus foliaceus. *Dermatologica* 1989; 179: 222–223.
9. Scharf SJ, Friedmann A, Brautbar C, Szafer F, Steinman L, Horn G, et al. HLA class II allelic variation and susceptibility to pemphigus vulgaris. *Proc Natl Acad Sci USA* 1988; 85: 3504–3508.