

RECURRENT BULLOUS ERUPTIONS ON THE LOWER LEGS

A. Björnberg and H. Mobacken

From the Department of Dermatology, Sahlgren's Hospital, Göteborg, Sweden

Abstract. In 15 patients with venous or arterial insufficiency of the legs, bullous eruptions were observed on the lower legs. The bullae were subepidermally situated. Circulating antibodies against the basement membrane zone were not demonstrated in 2 cases investigated. This eruption seems to represent a clinical entity of unknown etiology.

Key words: Bullous dermatosis; Circulatory insufficiency

Over the past 4 years, 15 patients with similar bullous eruptions on the lower legs have been seen at the Department of Dermatology, Sahlgrenska sjukhuset, Gothenburg, Sweden. These eruptions would seem to resemble those reported by Frain-Bell (1959) in 6 cases (5). Since we have been unable to find further information in the literature about this malady and since our observations differ to some extent from those of Frain-Bell, we deem it justified to sum up our findings briefly.

CASE REPORTS

Table I presents data on the 15 patients regarding age, sex, sites of bullae, concurrent eczematous or ulcerous lesions, signs of vascular insufficiency in the legs, information on relapses and on any other intercurrent disorder. Two typical cases will be described to exemplify the symptoms and course.

Case 1. A cardiosclerotic woman of 84 had for 30 years been troubled by venous ulcers and eczema. No information is available regarding any prior thrombotic episodes in the legs. During her latest admission to hospital the ulcerations and eczema on the lower legs were treated with compresses soaked in a 1% aqueous solution of aluminium subacetate. When the skin lesions had practically cleared up, there developed suddenly—within 24 hours—multiple, discrete bullae a centimetre or two in diameter in the skin surrounding the ulcerations (Fig. 1). There was no evidence of concurrent acute eczema in the form of papular or vesicular lesions. Smaller bullae were absorbed rapidly without rupturing; the larger ones burst, leaving a superficially eroded surface which epithelialized rapidly. Identical bullous eruptions recurred on several

occasions with long symptomless intervals over the next 2 years. The bullous eruptions invariably set in suddenly and for no apparent reason. They were always confined exclusively to the lower legs. The sites always corresponded to skin regions exhibiting pathological abnormalities with induration, hyperpigmentation and atrophy.

Case 2. A woman of 66 with obesity and arthrosis deformans of several joints has been having recurring leg ulcers for 30 years. Between 1944 and 1962 she was operated on three times for varicose veins. There is no history of thrombosis. A few 1–2 cm bullae have appeared on the lower legs on at least 20 occasions over the past 3 years. Onset was always sudden and the course similar on each occasion. After mild pain in the region for some 12 hours, the bullae appeared rapidly on grossly normal skin or on skin affected by chronic venous stasis. There were no papular or vesicular lesions suggestive of eczema. Fresh bullae had a clear, fluid content, while the older ones contained a slightly purulent liquid. Bullae also developed beneath tight bandages which excluded any possibility of self-inflicted lesions. Immediately after rupture of the bullae, the subjacent tissues exhibited a superficial erosion which soon deepened to highly painful ulcerations covering exactly the same area as the original bullae. Healing was exceedingly slow and sometimes necessitated admission to hospital. Neither antibiotics (penicillin and tetracyclines) nor corticosteroids (systemically or topically) have been able to prevent the development of new bullous eruptions.

Laboratory studies. Bacterial cultures from the contents of the bulla were made in 6 cases. Five proved negative but one exhibited slight growth of coliform bacteria. Cultures and direct tests for fungi were made on fluid and walls of the bullae from 8 patients, the results in all cases being negative. Virus cultures were attempted from the bullae on 7 patients. Herpes simplex virus was isolated from 3 of them (cases 2, 13, and 15). Tests for porphyria were carried out on one patient with negative results. With the aid of immunofluorescence techniques, 2 patients (cases 1 and 2) were tested for serum antibodies against epidermal intercellular substance and against basement membrane zone, with negative results.

Histopathology. Our policy regarding skin biopsies has been restrictive whenever bullae have occurred on lower legs with impaired circulation. A bulla the size of a pea was excised from case 1. It was subepidermally situated, and contained serous fluid and an abundance

Table I. Clinical data of 15 patients with recurrent bullous eruptions on the legs

Pat. no.	Sex	Age (y.)	Type of vascular insufficiency in the legs	Localiza-tion on lower legs	Concur-rent eczema	Concur-rent leg ulcer	Recur-rence of bullae	Concomitant diseases
1	♀	84	Venous	Both	+	+	+	Cardiosclerosis
2	♀	66	Venous	Both	(+)	+	+	Hypertension, benign+ Arthrosis deformans Alcoholismus chronicus
3	♂	68	Venous	Left	—	+	+	
4	♂	60	Venous	Left	—	+	+	
5	♂	70	Venous	Left	—	+	—	
6	♀	81	Venous	Left	—	+	—	Anaemia perniciosa+Cardio-sclerosis
7	♀	65	Venous	Right	+	+	+	Calcinosis cutis crur.+ Epilepsia
8	♀	78	Venous	Right	—	+	—	Diabetes mellitus+Lesio vascularis cerebri
9	♂	79	Arterial	Right	—	+	—	Diabetes mellitus+Cardio-sclerosis
10	♀	84	Venous	Right	+	+	—	Cardiosclerosis+Diabetes mellitus laevis
11	♀	58	Venous	Both	—	—	+	Rheumatoid arthritis
12	♂	68	Arterial	Right	—	+	—	Diabetes mellitus
13	♀	68	Arterial	Left	—	+	—	Hypothyroidism+Epilepsia
14	♀	50	Venous	Right	—	+	+	
15	♀	72	Arterial	Left	—	+	+	Diabetes mellitus+Cardio-sclerosis

of eosinophil leukocytes (Fig. 2). The superficial layers of the corium were oedematous. Numerous dilated small blood vessels were seen; their walls were thickened and showed a negative PAS-reaction. There were perivascular infiltrates composed chiefly of eosinophils, lymphocytes and histiocytes, and to a lesser extent neutrophils.

DISCUSSION

The clinical pictures were similar in all 15 patients. The bullae usually appeared on an abnormal skin in connection with vascular insufficiency, of venous type in 11 and arterial type in 4. The skin was not markedly atrophic, however. Blisters on normal skin did not show any peripheral erythema. They were only mildly painful. The bullae were sometimes located near the leg ulcers, often at a distance from them. Trauma did not precede the eruptions. Rapid healing was usual. Only in exceptional cases, as in case 2, were the bullae followed by slowly healing ulcerations. No scarring occurred. Bullae were not observed other than on the legs and mucosal lesions did not develop.

Herpes simplex virus was isolated in 3 of 7 patients. The clinical picture was not in accordance with that of herpes simplex, however. Contamination from the skin surface could not be excluded.



Fig. 1. Acute bullous eruption on the lower leg in a patient with stasis syndrome.

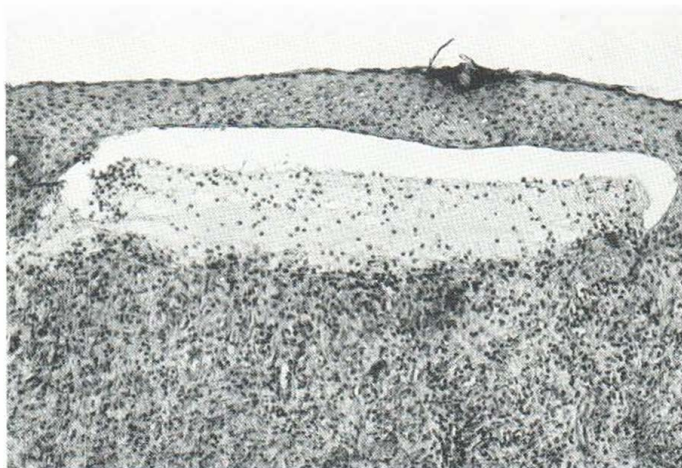


Fig. 2. Subepidermal bulla in a patient with acute bullous eruption on the lower legs with stasis syndrome.

Husain & Sommerville (6), using a fluorescent antibody technique, demonstrated herpes simplex virus in eczema in 36% and in other skin diseases in 15%.

Frain-Bell thought that his patients had a bullous eczema (5). They had also eczema on arms and trunk and the bullae were more pronounced when the eczematous lesions were at their worst. The histological picture was either one of eczema or of bullous pemphigoid. In the present series only 4 patients also had, besides the bullae, eczematous lesions on the legs but not on other parts of the body. Patients with stasis dermatitis are notoriously predisposed to contact sensitization to topicals (8), but in our patients bullae appeared and disappeared without any changes in topical treatment. They seemed in their distribution also to be quite distinct from the eczema lesions in these 4 patients, who suffered primarily from eczematous lesions on their legs. Microscopic examination did not reveal spongiosis typical of eczematous dermatitis. There is therefore no evidence that the lesions represented a bullous eczema.

Pemphigoid may initially be confined to smaller areas before generalization (7). None of our patients had any blisters apart from those on the legs during observation periods of 1-4 years. Fluorescent antibodies against the basement membrane zone (4) could not be demonstrated in the two cases investigated. The diagnosis of pemphigoid therefore seems unlikely, as also is porphyria (laboratory investigated in one case) and bullous drug eruptions

(no correlation between drug therapy and bullous eruptions).

Blisters may develop following repeated slight traumatization of the skin by friction. Our patients denied any trauma preceding the eruptions. The histopathology of traumatic bullae seems to be characteristic (2). It differs from that observed in our patient no. 1.

Five of the 15 patients had manifest diabetes mellitus. Vascular complications of diabetes mellitus may appear in such patients even before their normal glucose tolerance has become impaired. However, the localization of the bullae and the histology in the present series is not in agreement with the criteria for *bullosis diabeticorum* (3).

The age distribution, with elderly people dominating the present series, may be affected by selection factors, as the observations were made on patients when treated as in-patients. These often have internal diseases and this may explain why diabetes and cardiosclerosis was a relatively frequent finding.

REFERENCES

1. Allen, G. E. & Hadden, D. R.: Bullous lesions of the skin in diabetes (*bullosis diabeticorum*). *Br J Dermatol* 82: 216, 1970.
2. Brehmer-Andersson, E. & Göransson, K.: Friction blisters as a manifestation of pathomimia. *Acta Dermatovener (Stockholm)* 55: 65, 1975.
3. Cantwell Jr, A. R. & Martz, W.: Idiopathic bullae in diabetics. *Bullosis diabeticorum*. *Arch Dermatol* 96: 42, 1967.

4. Chorzelski, T. P., Jablonska, S., Blaszczyk, M. & Jarzabek, M.: Autoantibodies in pemphigoid. *Dermatologica* 136: 325, 1968.
5. Frain-Bell, W.: Bullous dermatitis and bullous pemphigoid. *Br J Dermatol* 71: 241, 1959.
6. Husain, M. H. & Sommerville, R. G.: Presence of herpes-simplex virus on eczematous skin. *Lancet* II: 391, 1964.
7. Rook, A. & Waddington, E.: Pemphigus and pemphigoid. *Br J Dermatol* 65: 425, 1953.
8. Stoltze, R.: Dermatitis medicamentosa in eczema of the leg. *Acta Dermatovener (Stockholm)* 46: 54, 1966.

Received September 16, 1975

H. Mobacken, M.D.
Department of Dermatology
Sahlgren's Hospital
S-413 45 Göteborg
Sweden