CASE REPORTS

ERYTHEMA ELEVATUM DIUTINUM WITH A PROLONGED BULLOUS PHASE

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A seventy-year-old man developed chronic, persistent papulo-nodular and plaque lesions overlying the skin of joints and extensors with clinico-pathological features of erythema elevatum diutinum. A distinctive finding was the preceding phase of a bullous eruption of an unusually long duration. Skin test of SK/SD was highly reactive, neutrophilic chemotaxis was abnormal and response to dapsone was dramatic.

Key words : Erythema elevatum diutinum, Leukocytoclastic vasculitis, Immune complexes, Bullous disorders, Paraproteinemia.

Erythema elevatum diutinum is a rare chronic disease, at times encompassed with leukocytoclastic vasculitis.[1] Slowly progressive erythematous, purple and yellowish papules, nodules and elevated plaques appear symmetrically over the extensor aspect of the hands, forearms, elbows, knees, legs, Achilles tendon and buttocks. There is a striking predilection for the skin overlying the joints. Early, soft and tender lesions become hard as fibrosis ensues. Vary rarely, vesiculo-bullous lesions co-existing with other lesions have been reported,[2] but a frank, long-lasting bullous phase preceding the characteristic lesions has not been documented. The purpose of this paper is to record such an unusual presentation.

Case Report

A seventy-year-old male was first seen in May 1983 with two years history of recurrent vesiculo-bullous lesions over the gluteal region and the joints. Bullae were tense, haemorrhagic and appeared on normal skin. These were followed soon afterwards by painful and necrotic ulcers. Episodic bullous eruptions lasted for one year and were accompanied by painful oral ulcerations. A diagnosis of leukocytoclastic vasculitis was made and the patient received numerous courses of corticosteroids and antibiotics which were not particularly useful. Later, in June 1984 he returned with several painful, pruritic, and slowly developing raised lesions over the same sites. These lesions ulcerated. progressed relentlessly and did not heal. The patient was a known case of essential hypertension. Past history otherwise was unremarkable. Physical examination was normal except a blood pressure of 160/100 mm of mercury, and a quiescent ventricular septal defect. Cutaneous examination revealed erythematous, purple, papulo-nodules and raised plaques measuring 1-6 cm on the buttocks, dorsum of fingers, extensor aspects of elbows, knees and Achilles tendon (Fig. 1).) Plaques showed central, necrotic, crusted ulcers and surrounding grouped haemorrhagic vesicles. Isolated petechial and purpuric lesions were present on the buttocks and legs. Larger lesions were firm, non-tender and freely mobile over the underlying tissues. Skin biopsy confirmed the diagnosis of erythema elevatum diutinum and the patient was administered dapsone in a dose of 100 mg twice daily.

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Fig. 1. Erythematous, purple-coloured papules, nodules and plaques.

The response was dramatic with arrest of fresh crops of vesicles and necrotic ulcers within a few days. During subsequent months, the large lesions flattened and the smaller ones cleared without scarring. After eight months of therapy, the patient was in complete remission.

Investigations such as haemogram, stools, urinalysis, serum proteins, blood urea, creatinine, sugar, liver function tests, antinuclear antibody, VDRL, serum electrophoresis, rheumatoid factor, ECG and skiagram were negative or normal. Patient had a markedly positive 4 and 24 hours skin tests with SK/SD, 24 hour reading of the test recorded an indurated swelling of 3 × 4 cm with a central necrotic reaction. Skin tests with candidin, aspergillin and histoplasmin were negative. Assessment of neutrophilic chemotaxis showed abnormally decreased readings. Random and directional chemotaxis were 2.4μ and 27.3 μ respectively (Normal values : random 10-15 μ, directed 50-70 μ). Nitroblue tetrazolium test demonstrated marked spontaneous reduction. Unstimulated NBT reduction was 95 percent and stimulated reduction was 90 percent. Skin bippsy from the bullous lesion revealed a large unilocular subepidermal cleft with multiple early foci of leukocytoclastic vasculitis. Biopsy of the nodule showed focal ulcerated points in the epidermis. Most upper and mid-dermal vessels had endothelial swelling and myriads of neutrophils, with karyorrhexis, occasional lymphocytes and eosinophils in and around their walls (Fig. 2 inset). Fibrinoid necrosis of the vessel wall, the so called toxic hyalin was seen. Older lesions demonstrated extensive fibrotic replacement of the dermal collagen along with focal capillary proliferation (Fig. 2).

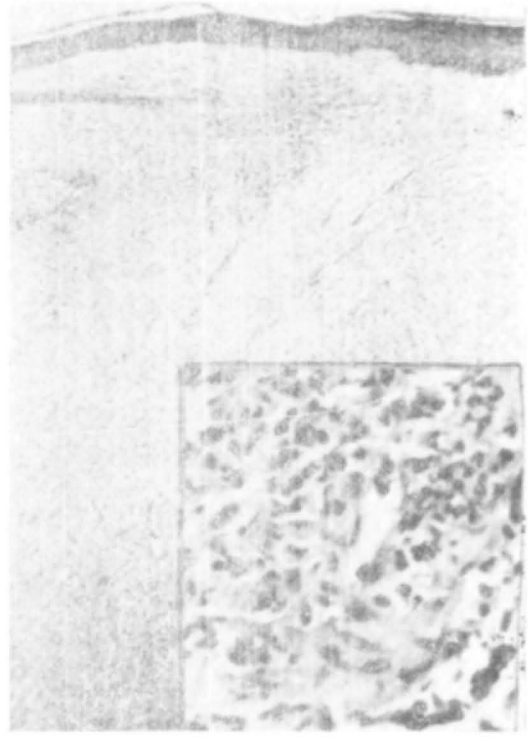

Fig. 2. Extensive fibrotic reaction throughout the dermis with foci of capillary proliferation and inflammatory infiltrate (H & E 13.2X). (Inset) : Endothelial swelling, toxic hyalin, angiocentric aggregates of neutrophils and cellular dust (H & E 13,2X).

Comments

The original description of the disease by Hutchinson and Bury was given without histopathological characterisation.[3] In 1894, Crockar and Williams[3] reviewed the cases described by Hutchinson and Bury and suggested the des-

criptive term of erythema elevatum diutinum literally meaning red, raised and persistent. The disease connotes a specific entity, combining a striking clinical picture and a remarkable histopathology, even though it is in danger of loosing its identity among conditions labelled as leukocy to clasticvasculitis.[1] Essentially, it is a chronic, benign type of immune complex mediated vasculitis which has a predilection for certain sites where it recurs and is followed by a marked fibrotic change. The finding of C1q binding activity in sera, exacerbation after streptococcal infection, Arthus-like histopathology and a positive 4-hour SK/SD skin test suggest an immune complex etiology.[4,5] Skin test was positive in our patient pointing to the underlying pathomechanism. Katz et al[5] demonstrated defective neutrophilic chemotaxis in 2 patients as also seen in our patient supporting the earlier observations. Wolf et al[6] detected IgG, C_3 and fibrinogen in the blood vessel walls of the skin lesions in an immunoelectron microscopic study. Unlike our patient, several of these patients have been reported to have associated cryoglobulinemia and paraproteinemia of IgG and IgA types or even IgA myelomas which may be more than a chance factor.[4,5]

Volium,[2] Lugt[7] and Schweig[8] reported isolated cases with vesiculobullous lesions appearing along the margin or on the normal skin in between the plaques, but no case has so far been reported with a distinct and long-lasting bullous phase. The case under report had only bullous lesions for three years, the period when he defied the correct diagnosis. Therefore, we feel that this diagnostic possibility should also be considered with bullous disorders. Rao et al[9] reported a patient from India who had only firm nodules and plaques. Bullous lesions in our patient could have resulted from exaggeration of the usual pathogenetic factors. Greater amount of immune complex deposition, their slower clearance, more intense chemo-attraction of polymorphonuclear cells and the resultant severe inflammatory response due to greater release of vasoactive amines, proteolytic enzymes and other mediators, ultimately causing destruction of vascular and perivascular tissues and exudation of fluid could lead to bulla formation.

Dapsone, niacinamide and tetracycline have been found to be useful remedies.[2,4,5,10] Dapsone has a dramatic response, but is suppressive rather than curative.[10] Fresh crops of lesions may appear within a few days of cessation of therapy. The mechanism of action of dapsone is not clear. It may act by blocking the neutrophilic accumulation as suggested by its role in the control of other neutrophil amplified diseases.[10] Interference with complement deposition and activation of its alternate pathway, restoration of a postulated chemotactic factor inhibitor activity and inhibition of the neutrophil myeloperoxidase—H_2O_2 halide mediated cytotoxic system could be the other possible mechanisms of action of dapsone.[10]

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