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LETTERS TO THE EDITOR

Localized Bullous Pemphigoid after Radiation Therapy: Two Cases

Sir,

Localized bullous pemphigoid (LBP) after radiation therapy was first reported by Ernst & Marsch (1) in 1982. Since then, some well-documented cases have been reported (2–4). Additionally, we describe 2 women with breast cancer who developed LBP after a partial mastectomy and radiation therapy. One of them had autoantibodies to the 230 kD bullous pemphigoid (BP) antigen.

CASE REPORTS

Case 1

A 65-year-old woman with a history of pulmonary tuberculosis developed itchy bullous skin lesions on her left breast 5 months after radiation therapy of 45 Gy, following a partial mastectomy for cancer in her left breast in January, 1990 (T1a NO MO, Stage I). Histopathological examination revealed a subepidermal blister containing a few eosinophils. Direct immunofluorescence showed linear deposits of IgA, IgM and C3 along the basement membrane zone (BMZ); however, results of the indirect immunofluorescence were negative. The patient was diagnosed with LBP. Topical corticosteroid cleared the skin lesions within 1 year and resulted in an almost complete remission of the LBP, without any recurrence of breast cancer.

Case 2

A 76-year-old woman received a partial mastectomy in May, 1994, for cancer in her left breast (T1a N1a MO, Stage II) and was prescribed oral tamoxifen citrate. She developed itchy bullous skin lesions on her left breast 16 months after radiation therapy of 50 Gy, following the operation. Histopathological examination revealed a subepidermal blister with a few eosinophils. Direct immunofluorescence showed linear deposits of IgG and C3 along the BMZ, and indirect immunofluorescence demonstrated anti-BMZ antibodies of IgG class at a titre of 1:320. Immunoblotting of EDTA-separated epidermal extracts confirmed the weak reactivity of the patient's serum with the 230 kD BP antigen (BP230) but not with the 180 kD BP antigen (BP180). Although we also examined the reactivity of the patient's serum with BP180 non-collagenous (NC) 16a domain, no reactivity occurred. The patient was diagnosed with LBP. Topical corticosteroid cleared the eruption in 4 months and resulted in an almost complete remission of the LBP, without any recurrence of breast cancer.

DISCUSSION

In our investigation of the 4 well-documented LBP cases, limited strictly to irradiated areas (1–4), as well as our two cases, we found that radiation therapy was performed for breast cancer in 5 cases and for inguinal lymph node metastasis in one case. Simply stated, all 6 patients received superficial radiotherapy. All the cases except for the patient described by Duschet et al. (2), who developed bullae over the entire body surface 1 week after the occurrence of LBP, developed blisters 3 weeks to 16 months after radiation therapy. Four of the 6 cases were controlled only by topical corticosteroids, and the other 2 patients were cured by taking oral corticosteroids for 1 year and by tetracycline and niacinamide, respectively. Compared to generalized bullous pemphigoid (GBP), which often requires long-term systemic corticosteroids, LBP is more curable.

Immunoblot analysis was performed only in our Case 2 and the case of Delaporte et al. (3). In both cases, sera reacted with the BP230 but not with the BP180, which is considered more pathogenic than BP230. Additionally, we examined the reactivity of the serum of Case 2 with BP180 NC16a domain, which was reported to be the most immunogenic site of the BP180 and plays an initiatory role in subepidermal blister formation in BP (5), but no reactivity was shown. These results reflect the higher curability of LBP.

The induction of LBP after radiation therapy may be due to an alteration of normal BMZ structures that increases immunogenic properties and induces autoantibody production, or to an increase in the deposits of specific circulating antibodies at the BMZ on the irradiated area (1–4). As to the latter, Remy et al. (6) proved that X-ray irradiation applied to human skin biopsy specimens increased binding of anti-BMZ antibodies. However, more processes may contribute to the development of LBP, since most of the reported cases developed LBP more than 3 weeks after radiation therapy.

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