Bullous pemphigoid triggered by radiotherapy for breast cancer

Pemphigoïde bulleuse déclenchée par une radiothérapie pour un cancer du sein

Bullous pemphigoid (BP) is the most common autoimmune subepidermal blistering disease of the skin and mucous membranes. It is characterized by autoantibodies against structural proteins of the dermal–epidermal junction and responsible for itch, localized or generalized bullous lesions followed by skin erosions. It is usually an idiopathic condition affecting mainly the elderly [1]. However, various exogenous factors have been implicated in the pathogenesis of the disease, such as medications, trauma, surgery, UV phototherapy [2] or percutaneous ionizing radiation (radiotherapy, RT) [3,4]. We report on a case of BP that was triggered within a month after RT for breast cancer.

Observation
A 68-year Finnish woman was referred for the management of a recent blistering disease. Her medical history was notable for a ductal adenocarcinoma of the right breast diagnosed in November 2015. The tumor was strictly localized to the right breast with no lymph node or metastatic dissemination. It was 10 mm, staged grade II, expressed estrogen receptor (100%), but was progesterone receptor and HER-2 negative. After tumor resection, she received postoperatively a percutaneous RT of 40.05 Gy in 2.67 fractions for three weeks from the end of December to the end of January. The hypofractionated regimen corresponded to 45 Gy in 2 Gy fractions with an α/β value of 3.5 Gy. Aromatase inhibitor (letrozol) was rapidly stopped because of side effects (fatigue, fever, heart rhythm issue). After RT, she developed an itchy rash mainly localized to the right breast before extending to the whole body that resolved with oral anti-histamines. Within less than a month after RT, itchy vesicles and blisters appeared on the right breast and led to larger hemorrhagic blisters and erosions (figure 1A). She then presented 2-3 weeks later similar lesions mainly on the extremities with a gloves and socks disposition (hands, wrists and soles, figure 1B). More discrete itchy papules were located on the thighs and elbows. The mucosae were intact. Histopathological analysis showed a subepidermal blister with an inflammatory infiltrate of lymphocytes, macrophages and eosinophils. Direct immunofluorescence microscopy showed linear deposits of C3, IgG, and some IgA along the dermal–epidermal junction. ELISA B180 NC16A antibodies (Abs) were positive at 100 U/mL (N < 9). Desmoglein 3 Abs were found at a low level of 13 (ELISA, N < 7). Hypereosinophilia was elevated at 980/mm³. Oral prednisolon at the dose of 40 mg/day (0.6 mg/kg/d) in association with superpotent corticosteroid ointment (clobetasol propionate) on the affected areas allowed a control of the disease. At one month of follow-up and at a prednisolone dosage of 20 mg daily, BP was in complete remission with no symptoms, or new blisters. The patients presented only fully healed non-infiltrated reddish lesions (figure 2). We plan to taper gradually the prednisolone dosage of 5 mg every 2 weeks over the next 2 months.

Figure 1
A. Well demarcated erythema with post-bullous erosions and crusts of the right breast previously treated with radiotherapy. B. Round and polycyclic post-bullous erosions of the hands and forearms


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During RT rechallenge [8]. Hormonal therapy has been some-
induced by radiation. Another hypothesis is that the patient
irradiated area may be explained by the local modifications
with unmasking antigens. The localization of the disease to the
formation of auto-Abs by the alteration of the basal membrane
expected that the tissue damages induced by the RT induce the
of side effects. The mechanisms remain unclear, but it is sus-
pected that the tissue damages induced by the RT induce the
formation of auto-Abs by the alteration of the basal membrane
with unmasking antigens. The localization of the disease to the
irradiated area may be explained by the local modifications
induced by radiation. Another hypothesis is that the patient
would be predisposed to develop BP (with pre-existing low
levels of Abs) and the RT would enhance the deposition of
Abs in damaged skin [4]. The diagnosis is based on histopatho-
diagnostic examination and direct immunofluorescence. The
management is similar to idiopathic BP and seems to achieve most
of the time proper control [4]. Therapeutic options include
application of local corticosteroid ointments, oral corticosteroids
and immunsuppressive treatments according to the extension of
these disease [1].

BP can occur early or lately after RT. This side effect should be
known by oncologists and radiotherapists to allow its rapid
identification and proper management.

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