



## No Increase of Toxicity in a Patient with Cutaneous Mastocytosis Treated with Radiotherapy for Breast Cancer: A Case Report

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### Abstract

Cutaneous mastocytosis is characterized by an increase in mast cells in the cutaneous tissues. There are four main forms, among them urticaria pigmentosa, which presents as red, yellow or brown macules, papules and patches. Radiotherapy is known to cause skin toxicity, hence synergistic toxicity could potentially occur. To the best of our knowledge, no literature exists on the possible interaction between cutaneous mastocytosis and radiotherapy. Here we report a 59-year-old female with cutaneous mastocytosis of the urticaria pigmentosa subtype. Clinical symptoms of cutaneous mastocytosis were reddish brown macules with occasional itching. Current treatment consisted of levocetirizine 5 mg, 1-2 tablets a day and famotidine 20 mg, 1-2 tablets a day. When complaints increased, she used talcum powder and topical chlorhexidine solution for an intertriginous component with generally good results.

She was diagnosed with a cT1bN0M0 invasive lobular carcinoma of the right breast. After a breast conserving resection, she was treated with adjuvant radiotherapy in 15 fractions of 2.67 Gy to the whole right breast. Prior to radiotherapy moderate skin lesions of the breast were present without complaints. During radiotherapy, complaints of itching, redness and papillae increased. Furthermore, she experience stabbing pains in her breast and a sore nipple, which was considered as radiation toxicity CTCAE grade 1. No excess acute radiation toxicity was observed. Three months after the radiotherapy the complaints that occurred during radiotherapy had almost completely subsided. Skin lesions were comparable prior to treatment. Two years after radiotherapy the patient reported a decrease in papules and itching of the skin of the right breast. We described a patient with cutaneous mastocytosis treated with adjuvant radiotherapy of the breast. No excess acute or late toxicity was observed.

**Keywords:** Cutaneous mastocytosis; Radiotherapy; Breast cancer; Toxicity

### Introduction

Mastocytosis is a rare disorder characterized by an increase in mast cells in one or more organ systems. The exact etiology of mastocytosis remains unclear. Systemic mastocytosis is defined by multifocal histological lesions in the bone marrow or other extra cutaneous organs together with cytological and biochemical signs of systemic disease [1]. Radiotherapy is known to cause skin toxicity, hence synergistic toxicity could potentially occur. There is scarce literature on the interaction between radiotherapy and cutaneous mastocytosis. Landy et al. [2] reported a case of a female patient with a history of systemic mastocytosis who received breast conservation therapy for breast cancer. In this patient grade 1 radiation dermatitis occurred. She developed no in-field dermatologic of systemic flare in her systemic mastocytosis symptoms during radiation therapy. Cutaneous mastocytosis is characterized by an increase in mast cells in the cutaneous tissues [3]. There are four main forms, among them urticaria pigmentosa, which presents as red, yellow or brown macules, papules and patches. To the best of our knowledge, no literature exist on the possible interaction between cutaneous mastocytosis and radiotherapy. Here we report a patient with cutaneous mastocytosis who was treated with postoperative radiation of the right breast.

### Case Presentation

A 59-year-old female was diagnosed with a biopsy confirmed cutaneous mastocytosis (urticaria pigmentosa) in 1988. Systemic mastocytosis was excluded. Signs were reddish brown macules

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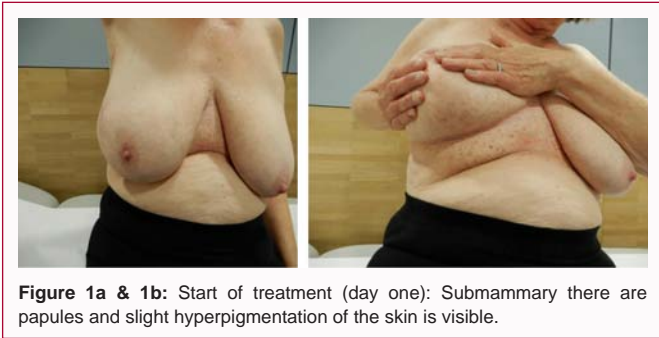
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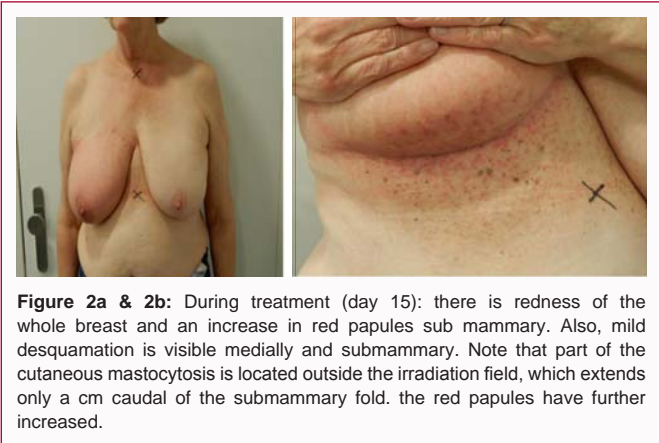
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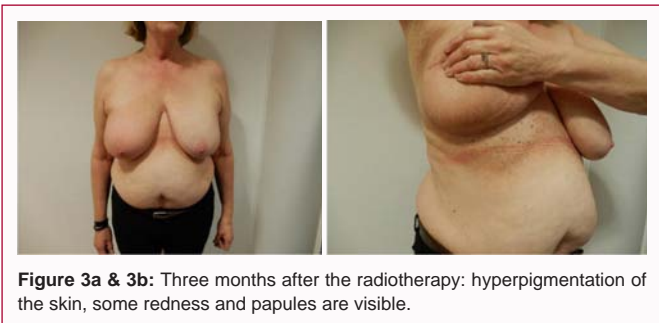
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**Figure 1a & 1b:** Start of treatment (day one): Submammary there are papules and slight hyperpigmentation of the skin is visible.

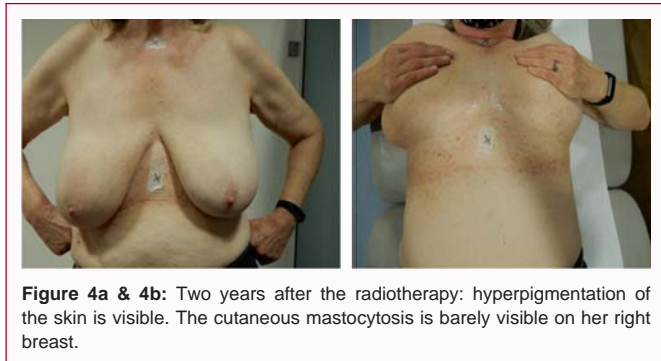


**Figure 2a & 2b:** During treatment (day 15): there is redness of the whole breast and an increase in red papules sub mammary. Also, mild desquamation is visible medially and submammary. Note that part of the cutaneous mastocytosis is located outside the irradiation field, which extends only a cm caudal of the submammary fold. the red papules have further increased.



**Figure 3a & 3b:** Three months after the radiotherapy: hyperpigmentation of the skin, some redness and papules are visible.

with occasional itching. Sometimes the skin of her torso was red and swollen and showed erosions. Current treatment consisted of levocetirizine 5 mg, 1-2 tablets a day and famotidine 20 mg, 1-2 tablets a day. When complaints increased, she used talcum powder and topical chlorhexidine solution for an intertriginous component with generally good results. Her complaints had been stable for the past years, with the exception of some flares during hot weather. In 2018 she was diagnosed with a cT1bN0M0 invasive lobular carcinoma of the right breast. She was treated with breast conserving resection and referred to our institute for adjuvant radiotherapy. In the absence of evidence to refrain from radiotherapy, she was treated with adjuvant radiotherapy of the whole breast with a total of 15 fractions of 2.67 Gy in accordance to national guidelines. Opposing tangential fields



**Figure 4a & 4b:** Two years after the radiotherapy: hyperpigmentation of the skin is visible. The cutaneous mastocytosis is barely visible on her right breast.

of 6MV were used without skin bolus. At that time moderate skin lesions of the breast were present without complaints (Figure 1a, 1b). After the sixth fraction (16.02 Gy), complaints of itching, redness and papillae increased. Furthermore she experience stabbing pains in her breast and a sore nipple (Figure 2a, 2b). The levocetirizine was increased to one tablet of 5 mg, twice a day. This resulted in less itching complaints. She also treated her skin with chlorhexidine solution and talcum powder. Two weeks after the treatment her skin complaints had reduced to a level comparable to those halfway the treatment. Three months after the radiotherapy the complaints that occurred during radiotherapy, had almost completely subsided. Skin lesions were comparable to before treatment (Figure 3a, 3b). In warm weather, edema developed in the skin of her breast. Dosage of levocetirizine and famotidine was returned to prior levels. One year after the radiotherapy slight hyperpigmentation was observed which was considered as late radiation toxicity grade 1. Two years after the radiotherapy the patient reported a decrease in papillae and itching of the skin of right breast (Figure 4a, 4b).

**Conclusion**

Here we report a 59-year old female with cutaneous mastocytosis safely undergoing radiotherapy for breast cancer treatment. During treatment, a mild increase in complaints occurred related to cutaneous mastocytosis. Two years after the radiotherapy the patient reported a decrease in papules and itching of the skin of the right breast. No increase in acute or late radiation toxicity was observed.

**References**

1. Valent P, Li CY, Schwartz LB, Marone G, Nuñez R, Akin C, et al. Diagnostic criteria and classification of mastocytosis: A consensus proposal. *Leuk Res.* 2001;25(7):603-25.
2. Landy RE, Stross WC, May JM, Kaleem TA, Malouff TD, Waddle MR, et al. Idiopathic mast cell activation syndrome and radiation therapy: A case study, literature review, and discussion of mast cell disorders and radiotherapy. *Radiat Oncol.* 2019;14(1):222.
3. Wolff K, Komar M, Petzelbauer P. Clinical and histopathological aspects of cutaneous mastocytosis. *Leuk Res.* 2001;25(7):519-28.