

# Massive isolated breast carcinoma metastases to the skin. A case report

Masywne izolowane przerzuty raka piersi do skóry. Opis przypadku

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## Abstract

A 61-year-old patient with a history of left breast carcinoma, after mastectomy and pre- and post-surgical radiotherapy, presented to the Department of General Aesthetic Dermatology and Dermatotomy in Lodz with metastatic spread to the skin in the form of multiple nodules and tumours located on the trunk. Imaging diagnostics did not reveal metastases to other organs. The patient was subjected to five cycles of chemotherapy, an attempt at hormone therapy, and palliative surgical removal of the most bothersome cutaneous lesions. Despite applying various methods of treatment, disease progression was not inhibited. The patient died within 6 months of the appearance of massive lesions on the skin of the trunk.

**Key words:** breast carcinoma, skin metastases, skin invasion.

## Streszczenie

Do Kliniki Dermatologii Ogólnej, Estetycznej i Dermatologii zgłosiła się 61-letnia chora na raka piersi lewej po amputacji piersi oraz chemioterapii przedoperacyjnej, pooperacyjnej i radioterapii z powodu rozsiaanych przerzutów do skóry o typie guzków i guzów umiejscowionych na tułowiu. W badaniach obrazowych nie stwierdzono przerzutów do innych narządów. U chorej zastosowano trzy linie chemioterapii, próbę hormonoterapii oraz paliatywne wycięcie najbardziej uciążliwych zmian skórnych. Mimo zastosowania różnych metod leczenia, nie spowodowały one zatrzymanie progresji choroby. Chora zmarła 6 mies. od czasu pojawienia się pierwszych zmian skórnych na tułowiu.

**Słowa kluczowe:** rak piersi, przerzuty do skóry, zajęcie skóry.

## Introduction

Breast carcinoma is the most frequent malignancy in females in Poland and other countries all over the world. A higher prevalence of this neoplasm has been observed since the beginning of the 1960s [1].

Metastatic breast carcinoma can spread to lymphatic nodes (via lymphatics), as well as to distant organs (via blood circulation) [2]. Metastases from breast carcinoma most frequently develop in the lungs, the central nervous system, the liver and bones. This disease can also spread to the skin, although this concerns only a small percentage of cases (approx. 5%) [3]. Usually, metastases to the skin are accompanied by the involvement of internal organs [4, 5]. We present a case of a patient with multiple isolated breast carcinoma metastases to the skin, in whom rapid

disease progression occurred in spite of the treatment applied.

## Case report

In 2004, a 60-year-old woman with a negative family history of neoplastic diseases presented to the Surgical Oncology Department at the Medical University of Lodz with a painless tumour (4 cm in diameter) of the left breast (Figure 1). Numerous movable lymphatic nodes of the left armpit were found. A fine needle aspiration biopsy of the tumour and the lymph nodes revealed the presence of cancerous cells. No metastases were found in the chest X-ray examination or the ultrasound of the abdominal cavity. The patient received neoadjuvant

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**Fig. 1.** Early skin lesions in the appearance of breast carcinoma metastases to the skin of the trunk (February, 2008)

chemotherapy including 4 cycles of Taxotere and Adriblastine. A partial remission of the tumour size and lymph nodes was achieved. The patient was qualified for mastectomy. A modified radical mastectomy of the left breast was carried out according to the Madden method. Postoperative healing was uneventful. The histopathological examination of the postoperative material showed the presence of G-III infiltrative ductal carcinoma in situ with a partial micropapillary component. In 11 of 17 lymph nodes carcinoma metastases of 1.6 cm in diameter were detected. The extent of cancer spread according to the TNM staging system was estimated as pT1cN3. The degree of oestrogen and progesterone receptor expression was negative (ER-0, PR = 0), but HER-2 receptor expression was high (+2). The patient was subjected to postoperative radiotherapy (50 Gy to the chest region + 50 Gy to lymph node areas for 5 weeks), as well as adjuvant chemotherapy according to the FAC scheme; 4 cycles were applied. In May 2005, a relapse was diagnosed in the vicinity of the scar after mammectomy. Following the surgical removal of lesions, second-line chemotherapy, including 4 cycles of Navelbine 40 mg + FU 800 mg, was provided. One year later, a subsequent carcinoma relapse in the scar in the form of multiple nodules and tumours in the region of the chest was detected, and a surgical biopsy confirmed the diagnosis. Third-line chemotherapy (3 cycles of mitoxantrone in monotherapy, 20 mg each) was applied. In April 2006, metastatic breast carcinoma involved the chest skin; fourth-line chemotherapy, i.e. cisplatin in monotherapy, 3 × 50 mg for 3 days, was implemented. The treatment was carried out for 6 cycles until lesion stabilization was achieved. The treatment of skin lesions continued with subsequent fifth-line chemotherapy with methotrexate at the dose of 50 mg in monotherapy for 7 days (6 cycles). Next, oral methotrexate (5 mg 60 tablets, 10 mg 100 tablets, 2.5 mg 250 tablets) was administered. In May 2007, due to progression of cutaneous lesions, the patient received

hormone therapy, in spite of a negative receptor state. She was given tamoxifen at a dose of 20 mg 1 × 1 for 6 weeks. Due to lack of improvement and the patient's malaise, the treatment was discontinued. In February 2008, the patient reported to the Department of General Aesthetic Dermatology and Dermatocurgery in Lodz with massive spread of the cancerous process in the form of multiple nodules located on the skin of the trunk. The clinical examination revealed nodules and tumours covered with erosions and ulcerations located within dark brown extensive spots. Some of the erosions were covered with bloody purulent crusts. These lesions were not painful, but the patient experienced strong itching. Rapid enlargement of the tumours and the affected area prevented her from being fully active. The patient was qualified for palliative surgical treatment. The seven most bothersome tumours (the largest size – 12 × 6 cm) were removed. Within a month after the surgery, nodules and tumours reappeared, enlarged rapidly, and underwent decomposition (Figure 2). The patient's imaging examination (chest X-ray, abdominal USG, bone scintigraphy) did not reveal the presence of breast carcinoma metastases. The patient died in June 2008 due to circulatory and respiratory insufficiency with symptoms of pulmonary embolism (autopsy was not performed at the request of the family).

## Discussion

Breast carcinoma metastasizes mainly to the lungs, bones, central nervous system, and liver [1]. In a retrospective study of 4020 patients with metastatic disease, Lookingbill DP, Spangler N and Helm KF reported that cutaneous metastatic breast carcinoma accounted for 5% of cases. In the available literature, we have not found any case report with massive metastases from breast carcinoma to the skin unaccompanied by metastatic spread to other organs symptomatically or visible in diagnostic imaging examination. Therefore, in our opinion we present the first case with such an atypical course of the disease.

French *et al.* described a case of a 39-year-old woman with extensive metastatic breast carcinoma spreading to the upper extremity with the signs and symptoms of lymphoedema, and to the bones [6]. The patient had been earlier treated at other institutions because of recurrent invasive ductal adenocarcinoma manifested by skin lesions. She had undergone neoadjuvant chemotherapy followed by a modified radical mastectomy, radiotherapy, and adjuvant chemotherapy. At the time of presentation she had extensive necrosis and lymphoedema of the upper limb caused by lymphatic obstruction secondary to cancer cell invasion, and underwent shoulder disarticulation for palliation with chemotherapy. The survival time for the patient from admission to the department was 18 months.



**Fig. 2.** Advanced neoplastic dissemination to the skin (June, 2008)

Furthermore, Daneshbod *et al.* presented a case of cutaneous manifestation of breast carcinoma metastases in a 47-year-old patient [7]. Cutaneous lesions were initially observed in the scar after mastectomy and later they disseminated to the whole upper extremity, resulting in its intensive oedema and erythema. The skin of the limb was thickened, with distinctly marked affected posterior areas resembling cellulitis, and intensive infiltration of fluid from the lesions. Radical excision of the left breast had been performed 15 years earlier due to infiltrating ductal carcinoma. A biopsy from the skin lesions confirmed the presence of the disease. The levels of oestrogen and progesterone receptors as well as Her2 receptors and p53 were negative, which the authors associated with multiple cancer cell obstruction in lymphatic vessels.

The median survival rate for patients with cutaneous metastatic breast carcinoma is approximately 6 months [8, 9]. However, our patient's survival was 3 years from the first relapse of the disease in the scar following mastectomy and 6 months from the patient's presentation to our department with massive metastases to the skin. All this confirms the observation of poor prognosis of breast carcinoma metastases to the skin [10].

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