



Case Reports

BREAST CANCER AFTER IRRADIATION FOR HODGKIN'S DISEASE

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ABSTRACT

We present clinical courses of three patients with breast cancers after irradiation for Hodgkin's disease and respectively different approach to their treatment. The patients received similar dose of mental-field irradiation for Hodgkin's disease and developed breast cancer after more than 18 years. One of the patients had bilateral breast cancer. The histology revealed one and the same type namely infiltrating lobular carcinoma in the three cases. Two of them had metastases in the lymph nodes so they had mastectomy and one had metastases in the bones so she had tumorectomy and palliative radiotherapy. Postoperatively they all received chemotherapy and hormonotherapy.

Key words: Breast cancer, Hodgkin's disease, Radiation-induced cancer.

INTRODUCTION

Successfully treated children and adolescents of early stage Hodgkin's disease with radiation or chemotherapy or with both (treated with radiotherapy, chemotherapy, or combined modality therapy for HD) have a substantial risk for the development of subsequent neoplasms [2,4,6,9,11,12]. Breast cancer is the most common solid second malignant neoplasm [1,2,4,7]. Most breast cancers arise within or at the margin of the irradiation field and are ductal infiltrating carcinomas [8,10]. Age at irradiation, time since treatment, dose received as well as chemotherapy strongly influence the risk [3,5,10,12].

CASE REPORTS

CASE 1

A 33 - year - old woman was admitted to the National Oncology Centre in Sofia in September 1997 for evaluation of a mass in the right breast. At the age of 15 she was diagnosed and treated for Hodgkin's disease: 36Gy mental field irradiation and MOPP

chemotherapy. No recurrences of HD were identified.

Physical examination: A mass 2.0/1.5 cm in the inferior median quadrant of the right breast next to the areolar mammalian complex and an ipsilateral axillary lymph node was palpable.

Mammography and FNB revealed cancer of the right breast.

On chest X ray, bone scintigraphy and echography of the abdomen no distant metastases were found.

No skin or subcutaneous changes betraying prior irradiation were detectable.

The patient had no constitutional symptoms or weight loss

Treatment: Right modified mastectomy a modo Patey was performed. After the operation the patient was treated with adjuvant chemotherapy using FEC regime and hormonotherapy with Zoladex^R.

Pathological evaluation revealed infiltrating lobular carcinoma; stage G 3, with perivasal and perineural tumor emboli and massive metastatic invasion in the axillar lymph nodes. Eleven of nineteen nodes from the three levels contained metastases.

Immunocytochemical study of the aspirate of bone marrow taken during the operation showed complexes of atypical cells (Fig.1).

The patient was followed up every 6 months; blood tests, Ca 15-3, chest X-ray,

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echography of abdomen, bone scintigraphy and gynecological examination.

Scintigraphic data for metastases in the ribs and two lumbar vertebrae were found 20 months after the treatment (Fig.2)

Thirty month after the mastectomy the patient had an accident. Acid was splash in her face. The injury and the stress were big. She had to undergo series of operations for skin reconstruction. After the accident the main disease progressed rapidly and in five months the patient died.

The patient had a successful completed pregnancy at the age of 24 with a healthy child. She has not taken estrogens.

CASE 2

A 28 - year - old woman was admitted to the National Oncology Centre in Sofia in February 1999 for evaluation of a mass in the right breast. At the age of 10 she was diagnosed and treated for Hodgkin's disease: 45Gy mental field irradiation and MOPP chemotherapy.

No recurrences of HD were identified.

Physical examination: A mass 1/1 cm in the lower medial quadrant of the right breast was palpable. The axillary lymph nodes were clinically negative. On bone scintigraphy were found metastases (Fig. 3a). Full staging work-up was negative for other metastatic localization.

The patient had no constitutional symptoms or weight loss.

Treatment: Simple tumorectomy was carried out because of bone metastases.

The patient was given twelve cycles of chemotherapy (i.v. pamidronate 90 mg monthly) and palliative radiotherapy to the largest bone metastases. After one year the bone scintigraphy showed significantly decrease to normalized tracer uptake in the hot spot comparing to the preoperational one (Fig. 3b).

Pathological evaluation of the primary tumor revealed infiltrating lobular carcinoma stage G 3. The tumor was positive for estrogen and progesterone receptors.

The patient is followed up every 6 months.

CASE 3

A 43 year - old woman was admitted to the National Oncology Centre in Sofia in June 2002 for evaluation of painful masses in both breasts. At the age of 22 she was diagnosed and treated for Hodgkin's disease: 37 Gy mental field irradiation and MOPP chemotherapy.

No recurrences of HD were identified.

Physical examination: A mass 2/1/1 cm in the inferior median quadrant of the left breast and a mass of 0.5/1/1 cm symmetrically localized in the inferior median quadrant of the right breast were palpable. The right axillary lymph nodes were clinically negative. A soft and movable lymph node was found in the left axilla.

Mammography and FNB revealed cancers of both breasts next to sulcus mammilaris.

Full staging work-up was negative for other metastases.

The patient had no constitutional symptoms or weight loss.

Treatment: Bilateral mastectomy and total axillar dissection was performed. The patient was treated with adjuvant chemotherapy using FEC regime and hormonotherapy with Tamoxifen after the operation.

Pathological evaluation revealed infiltrating lobular infiltrating lobular carcinoma stage G 3 (Fig 4). Metastatic carcinoma was found in one of the 14 axillar lymph nodes on the right and none of the 16 axillar lymph nodes on the left.

Immunohistochemical study for micrometastases was negative bilaterally.

The patient is followed up every 6 months; blood tests, Ca 15-3, chest X-ray, echography of abdomen, bone scintigraphy and gynecological examination.

Past medical history: For all presented cases family and social history was unremarkable. Unusual exposure to known environmental carcinogens could not be identified.

DISCUSSION

One of the most common second malignant neoplasms after treatment for Hodgkin's disease in childhood and adolescence is the breast cancer [2, 4, 6, 11]. There are a lot of risk factors associated with breast cancer development. We present three cases of postirradiated breast cancers. They were at great risk because of the age at the time of radiation 15, 10 and 22, respectively [1,2,3,8,9,12], more than 15 years after therapy [1,2,8,12] and combination with chemotherapy [8,12].

Case 1 and case 3 had cancer metastases in the lymph nodes. The second case had high hormonal dependence and distant bone metastases, while the first and the third one had none of them at the time of the operation. Despite of the aggressive type of the cancer after the mastectomy the first patient returned to her routines. She was working till the day

of the accident. In our opinion potential sequelae of stress on the clinical course of the main disease should be considered. The second patient despite of the bone metastases is still on chemotherapy in complete control according to recent. Patients with bilateral breast carcinoma are not very rare. Tardivon et al. found 6 women with bilateral breast carcinoma out of 26 [10]. Case 3 had bilateral breast cancer and after the treatment is stabilized.

Women treated with mantle-field irradiation before age of 20 years had a greater than forty-fold increased risk of breast cancer (12). More attention should be paid to the clinical course of other illnesses or factors on the background of the main malignancy. Because of the received dose of radiation and side effects of chemotherapy alternative diagnostic tools to mammography, especially that not involving radiation, should be applied when following the women at high risk for postirradiated breast cancer.

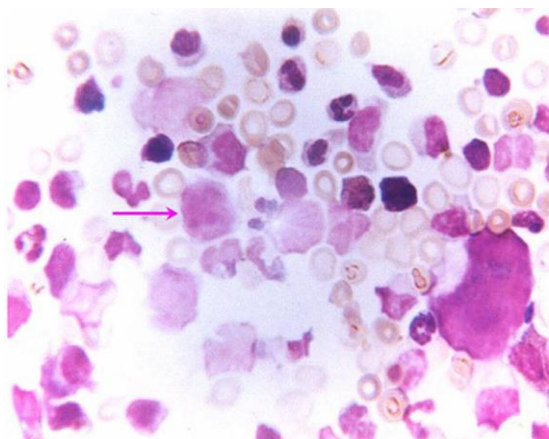


Figure 1. Atypical cells of the aspirate of bone marrow (Case 1).

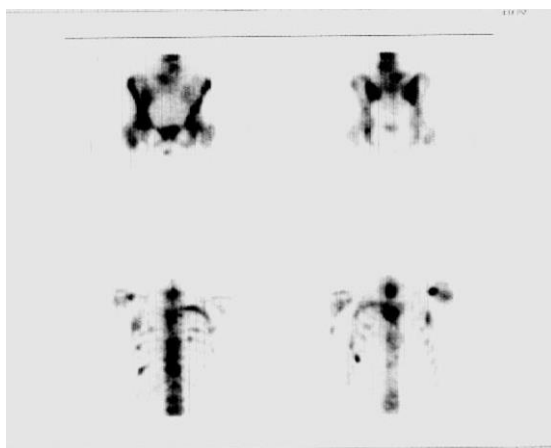


Figure 2. Metastases in the ribs and two lumbar vertebrae on scintigraphy (Case 1).

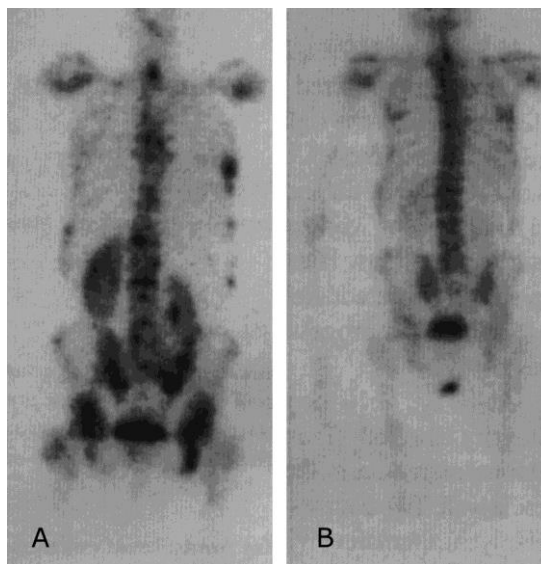


Figure 3. Bone metastases on scintigraphy: A. Before the operation. B. One year after the operation (Case 2).

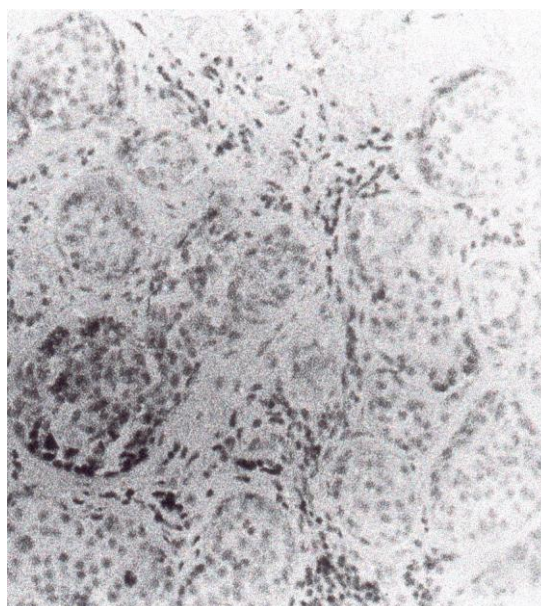


Figure 4. Histology of infiltrating lobular carcinoma stage G 3 (Case 4).

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