

Bilateral metastatic breast cancer as the first manifestation of ovarian cancer: Case report

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Summary

Background: Breast metastasis from primary ovarian cancer is extremely rare. The rarity of this finding may be the reason for its common misinterpretation as primary breast carcinoma.

Design: Case report.

Setting: A university hospital.

Results: A case of a patient with primary ovarian papillary serous cystadenocarcinoma who initially presented with a solitary bilateral breast mass and abdominal distention is reported.

Conclusions: Blood-borne metastasis from the ovary to the breast can show a varied clinical picture that should be differentiated from that of primary breast carcinoma.

Key words: Bilateral; Breast cancer; Metastatic; Ovarian cancer.

Introduction

Primary malignant tumors of the breast are common and account for an estimated 29% of all new cancers [1]. In the literature 37 cases of primary ovarian carcinoma metastatic to the breast have been reported [2-8]. Of these 21 cases had papillary serous cystadenocarcinoma, seven had serous cystadenocarcinoma, two had endometrioid carcinoma, one had lymphosarcoma, adenocarcinoma, mucinous adenocarcinoma, granulosa cell carcinoma, choriocarcinoma for each, and four had ovarian carcinoma with unknown histology. Ovarian papillary serous cystadenocarcinoma diagnosed by simultaneous bilateral breast metastases without any other organ parenchyma involvement has not been previously reported according to our knowledge.

A rare case with serous epithelial ovarian cancer diagnosed by fine needle aspiration biopsy from bilateral mammary metastasis is presented.

Case

A 68-year-old woman, nulligravida, presenting with a bilateral mammary mass along with axillary lymph node enlargement and abdominal distention was admitted to the Marmara University Emergency Department. Her medical, surgical and family history revealed only type II diabetes mellitus for ten years controlled by oral antidiabetics. At the time of presentation abdominopelvic computed tomography (CT) revealed peritonitis carcinomatosa accompanied by a solid-cystic mass measuring 4.5 x 3.5 x 2 cm located in the Douglas pouch, bilateral effusion and enlarged paraaortic lymph nodes. In the physical examination a 2 x 3 cm solid and fixed lesion in the upper right quadrant of the left breast and a 1 x 1 cm solid mass in the parenchyma of the right breast were palpated. Bilateral axillary

lymph nodes were 1 x 1.5 cm each. Tumor markers CA125 and CA15-3 at the first evaluation were 17,952 mIU/ml and 308.49 mIU/ml, respectively. She was admitted to the Internal Medicine Department, consulted by an oncologist, and treated with eight courses of taxol and carboplatin chemotherapy for seven months. Simultaneous mammary fine needle aspiration biopsy revealed bilateral metastases of serous papillary adenocarcinoma on microscopic examination (Figure 1). Abdominopelvic CT was performed and showed the presence of minimal abdominal ascites and a left adnexal mass measuring 2 x 3.5 cm and 5 x 3 cm lesion in the pouch of Douglas. CA125 and CA15-3 were 1,585 mIU/ml and 76.08 mIU/ml, respectively. The patient was then consulted by a gynecologic oncologist and decided to undergo surgery. During the operation, 7.5 l of ascites collected from the peritoneal cavity was examined and confirmed the previous pathology report as serous adenocarcinoma. Tumor implants were noted all over the peritoneal surfaces, intestinal mesentery and liver capsule. The sigmoid colon was adherent to the uterine fundus, left tuba and ovary. Total abdominal hysterectomy and bilateral salpingo-oophorectomy and total omentectomy were performed. The final pathology of the specimen showed ovarian papillary serous cystadenocarcinoma (Figure 2).

Discussion

A patient with a mammary mass should be evaluated carefully in all aspects. Primarily, the presence of abdominal or pelvic metastases as well as abdominal primary foci for mammary metastases should be considered. Unless a primary malignancy is exposed by biopsy, any gastrointestinal obstruction, irregular menses/postmenopausal bleeding or mammary mass accompanied by a pelvic mass should be evaluated by a gastrointestinal system radiographic series, colonoscopy, endocervical curettage or mammogram before exploratory laparotomy because the ovaries are current sites of metastasis for colonic, gastric, and other gynecologic and mammary

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Fig. 1

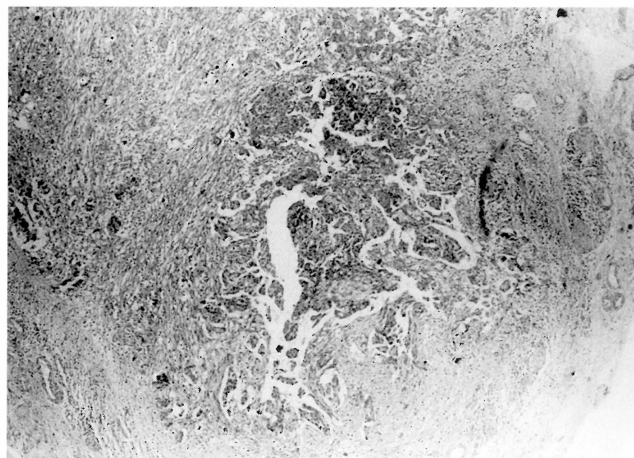


Figure 1. — Fine needle aspiration of the breast showing a malignant tumor with prominent papillary structures (Papanicolaou x 100).
Figure 2. — Serous papillary adenocarcinoma of the ovary (H&E x 100).

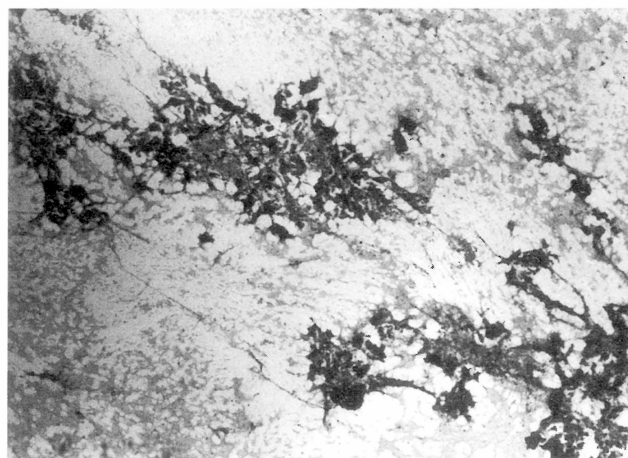


Fig. 2

primary malignancies [9]. Moreover non-malignant pelvic lesions, primary mammary carcinoma metastatic to the ovaries and neoplastic colonic lesions may simulate primary ovarian cancer [9]. Non-primary ovarian tumors develop via four possible pathways of spread which include direct continuity, surface papillation, lymphatic metastasis and hematogenous spread [10]. The rare finding of clusters of tumor cells limited to the lymphatics in the medulla of the ovary in cases of breast carcinoma confirms that this was the pathway of spread to the ovary [10].

The most common mode of metastasis of ovarian cancer is by transperitoneal dissemination of cells shed from the surface of the primary tumor [11], usually to the peritoneum, omentum, and bowel surfaces. Metastasis via the lymphatics to the retroperitoneal lymph nodes is also frequent [2]. Distant metastasis occurring presumably by hematogenous spread, is found in the liver, lung, pleura, kidney, bone, adrenal gland, urinary bladder and spleen, in order of decreasing frequency [11, 12].

Apart from the fact that primary breast cancer is the most common malignancy in women and should be the first consideration in a patient with a mammary mass, axillary lymph node enlargement, abdominopelvic mass, peritoneal carcinomatosa, elevated CA125 and CA-15-3 levels, which all were manifested in the present case, the breast could also be seen as a potential site for metastasis of primary ovarian carcinoma [4]. Metastasis of breast cancer in the ovaries is frequent, representing 25-30% of all ovarian metastases [1]. These lesions are found at autopsy in 10-20% of patients treated for breast cancer [1]. Compared with primary lesions, extra-mammary malignancies metastatic to the breast are extremely rare [4] with a clinically observed rate of 0.5-1.3%. Breast metastases may generally become evident several months later [5] or may be present at the first presentation, as in the present case. Bilateral breast cancer has a cumulative incidence of 7% to 20% in patients with primary operable breast cancer, and the majority of these lesions are

metachronous [13]. The incidence of synchronous bilateral breast cancer is approximately 1% to 2% and that of metachronous cancer 5% to 6% [14]. Krishnan *et al.* [6] reported bilateral inflammatory breast metastases from a primary ovarian malignancy, and Ozsaran *et al.* [8] reported a case of bilateral metastatic carcinoma of the breast from primary ovarian cancer. Similarly Ozguroglu *et al.* [7] presented a case of bilateral inflammatory breast metastases from a primary ovarian malignancy, but in those cases the breast metastases were either inflammatory or were detected several months later than the initial diagnosis with systemic involvement. In the presented case simultaneous bilateral breast metastases from the ovarian primary malignancy at the time of initial diagnosis is unique.

The majority of patients with ovarian cancer present to an internist or family physician with advanced disease and nonspecific gastrointestinal symptoms due to the presence of ascites, omental metastases, or bowel metastases. Clinical signs and symptoms are often nonspecific in most epithelial ovarian malignancies. A high index of suspicion for ovarian cancer is warranted by family physicians and internists in all women with a pelvic mass, unilateral or bilateral mammary mass in the presence of persistent gastrointestinal symptoms that cannot be diagnosed.

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