Ovarian Adenocarcinoma Presenting as Axillary Lymphadenopathy

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Introduction

Ovarian adenocarcinoma is the fifth leading cause of death for women in the United States, with an estimated 15,520 deaths per year.[1] However, ovarian adenocarcinoma presenting as axillary lymphadenopathy is quite a rare occurrence. This case documents an ovarian adenocarcinoma presenting as axillary lymphadenopathy, with a focus on the importance of the surgeon differentiating the axillary mass from metastatic breast cancer.

Case Report

A 74-year-old female was referred for the evaluation of right axillary lymphadenopathy detected on a routine mammogram. She denied fever, fatigue, recent travel, axillary pain, or skin changes. Her age of menarche was 15, her first pregnancy was at the age of 23, and her age of menopause was 43. Her family history was significant for two sisters with breast cancer, one of whom was diagnosed in her forties and died within two years. Her other sister was diagnosed in her seventies and still living at that time. She also had multiple paternal aunts and cousins diagnosed with breast cancer. There was no family history of ovarian cancer.

The patient's past medical history included hypertension, ulcers, hyper-lipidemia, diverticulosis, hemorrhoids, and a myocardial infarction. Her past surgical history included removal of two benign growths from her left breast at the age of 28. Her last mammogram and breast exam performed one year previously were normal.

The physical exam at presentation revealed right axillary adenopathy with no observable primary mass. There was no erythema, pain with palpation, or swelling. Ultrasound of the axilla easily identified the enlarged nodes and was used to perform fine needle aspiration (FNA). FNA of the node revealed adenocarcinoma of undefined origin. A breast MRI did not reveal a primary mass. CT of the chest and a bone scan also were negative.

CT of the abdomen and pelvis revealed multiple lobulated peritoneal and omental masses, as well as intraabdominal masses in the region of the gall bladder and spleen, including a 16 X 41 mm mass in the right lower quadrant. Additionally, a complex cystic lesion was seen in the left adnexa. A core biopsy of right axillary lymph nodes, CA-125 level, and staining for estrogen, progesterone, HER2, Ki-67, and CA-125 were performed. Her CA-125 level was elevated to 900 ng/ml and the axillary core biopsy stained positive for CA-125 within the neoplastic cells. The positivity rate of the estrogen receptor was 1%, progesterone 90%, and HER2 2+, features which can be seen with ovarian or breast carcinoma. Ki-67 positivity was 90%, indicating a high

proliferative rate. The high CA-125 level along with the CT findings indicated metastatic ovarian cancer as the diagnosis.

A port-a-catheter was placed and the patient was started on six cycles of chemotherapy with paclitaxel and carboplatin. After completing her chemotherapy regimen, a diagnostic bilateral mammogram revealed improved right axillary adenopathy, while a sonogram of the right breast showed no abnormal lymphadenopathy. Her CA-125 levels normalized. At last follow-up, a CT of the abdomen and pelvis revealed no increase in number or size of nodes. The main post treatment side effect was grade three neuropathy.

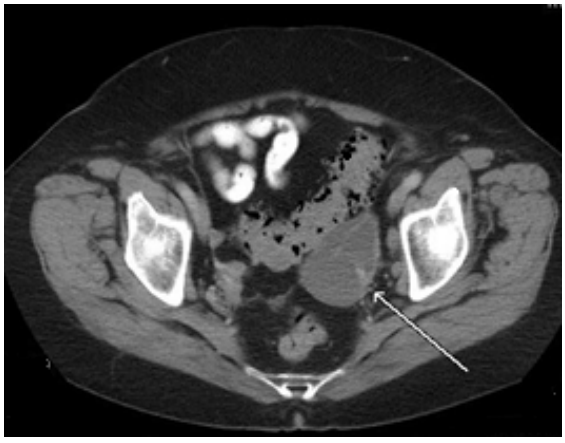

Figure 1. CT scan showing left ovarian mass.

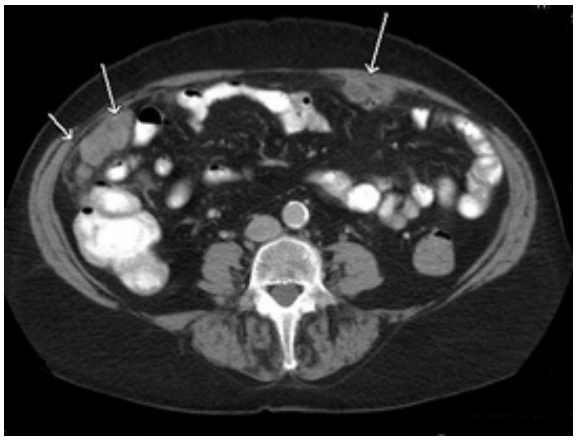

Figure 2. CT scan showing peritoneal metastases.

Discussion

Most ovarian cancers are epithelial in origin and result from malignant transformation of the ovarian epithelium, which is contiguous with the peritoneum.[2] At the time of staging, approximately 85% of ovarian cancer remains confined to the peritoneal cavity. Distant metastases at the time of presentation occurred in 8% of patients in one study and were most common in the liver, pleura, and lung.[3]

Ovarian cancer presenting as axillary lymphadenopathy is quite rare. The largest study to date on the topic of ovarian cancer presenting as extra-abdominal lymph-adenopathy involved a twenty-year review of cases.[4] In this twenty-year period, 35 extra-abdominal lymphadenopathic present-ations of ovarian, fallopian tube, or peritoneal carcinoma were found. Only two cases of peritoneal disease presented as axillary lymphadenopathy. A case presentation similar to that described here was reported in 1997 after a patient was erroneously treated for metastatic breast cancer.[5]

Breast cancer is a logical consideration in a patient with axillary lymphadenopathy, but alternative diagnoses must be entertained. Skin infections, cat-scratch disease, tularemia, sporotrichiosis, sarcoid-osis, syphilis, leprosy, brucellosis, melanoma, lymphoma and Kaposi's sarcoma can result in axillary lympha-denopathy.[6,7] Key aspects of the history include the presence of constitutional symptoms, recent travel, or high risk behaviors. Careful examination of other nodal sites also is required.

This patient's history of breast surgery for the removal of tumors coupled with a fine needle aspiration of adenocarcinoma suggested breast cancer, but the imaging studies, an MRI and CT, revealed no obvious site of a primary breast cancer. Breast MRI is highly sensitive in the

detection of occult breast cancer in patients with axillary lymphadenopathy.[8] Evidence of abdominal and adnexal masses are more convincing of a primary ovarian neoplasm.

The CA-125 level at presentation was 900 ng/ml and supported the diagnosis of metastatic ovarian adenocarcinoma. Although elevated CA-125 levels can be associated with other benign and malignant conditions, at levels above 320 ng/ml, there is a higher sensitivity and specificity for ovarian cancer (71% sensitivity, 84% specificity).[9] Additionally, above levels of 510 ng/ml, there is increased sensitivity and specificity for peritoneal implants outside of the pelvis as well as lymph node metastasis (67% sensitive, 80% specific).

Although a biopsy of the ovarian mass is usually required for complete confirmation of ovarian cancer, it was not performed in this case. The chemotherapy regimen would not have been altered by this diagnosis and the patient was already responding to chemotherapy. In addition, the patient's age and cardiac history raised concerns that she may not tolerate such a large operation. The CT image of an adnexal mass, a CA-125 level of 900 ng/ml, as well as the axillary node staining positive with CA-125, was sufficient for a diagnosis of primary ovarian cancer with axillary metastasis. The decrease of the CA-125 level to within normal limits after treatment with paclitaxel and carboplatin supported the diagnosis.

Axillary lymphadenopathy as an initial presentation of ovarian cancer is quite rare. Based on previous reports, our patient was the only one that did not receive surgical resection, only chemotherapy, and at last follow-up was performing well. For breast surgeons and referring providers, axillary lymphadenopathy in a female of older age, especially in the absence of an obvious breast lesion, potentially could represent metastasis from primary ovarian carcinoma. Recognition of this differential diagnosis could prevent unnecessary lumpectomy or mastectomy and lead to better outcomes with the appropriate treatment of the true primary cancer.

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