

Case Report-IV

Carcinoma Ovary with Isolated Metastases to Breast

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ABSTRACT

Isolated metastatic lesion in breast from primary ovarian cancer ovary is rare. Here we present a case of isolated breast metastases from carcinoma ovary. Patient presented with abdominal distension and breast lump. The diagnosis was confirmed with histopathology and immuno-histochemistry. The histopathology of breast lesion was similar to ovary and malignant cells in breast lesion and axillary lymph nodes were positive for CA-125 and negative for estrogen and progesterone receptors. Patient was diagnosed as a case of carcinoma ovary with breast metastases. She underwent surgery and was subsequently treated with Paclitaxel and Carboplatin. This article highlights the rarity of this condition and difficulty in making this diagnosis.

INTRODUCTION

Carcinoma ovary leading to isolated metastases to breast is rare. It may be difficult some time to differentiate metastatic lesion from primary in breast. Here, we present a case of carcinoma ovary with isolated breast metastases and the importance of histopathology and immunohistochemistry in confirming the diagnosis.

CASE: A 47- year old lady presented with progressive distension of abdomen for eight months chest pain for twenty days. On clinical evaluation there was left breast nodule 3x2 centimetres firm not adherent to underlying breast tissue or skin and without any skin changes or nipple discharge, also

there was left axillary lymphadenopathy 2.5 cm. firm and mobile. Patient had free fluid in the abdomen. Per vaginal and per rectal examination revealed adnexal growth adherent to uterus. Rest of the systemic examination was within normal limits.

Investigations revealed normal hemogram, biochemistry and echocardiography. Mammography showed ill-defined nodular opacity in left upper quadrant close to chest wall with left axillary lymphadenopathy. Right breast mammogram was normal. Scinti-mammography confirmed the mammogram finding of active lesion in left breast and axilla. CT Scan abdomen showed a large mass with solid and cystic components in the pelvis inseparable from uterus and ovaries along with moderate ascites (Fig-1). Liver gall bladder, pancreas, kidneys, spleen, are normal. No omental



Fig1:CT Scan abdomen showing a large mass with solid and cystic components in the pelvis inseparable from uterus and ovaries

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caking was observed. Upper GI and lower GI endoscopy were normal. Tumour markers showed CA-125 of 4957 u/ml (normal -5-35), CEA 1.0ng/ml (normal 0-5), CA 15.3 69.8 (normal <30). FNAC from breast lesion and axilla was adenocarcinoma. Ascitic fluid did not show malignant cells. She underwent laparotomy with left quadrantectomy and left axillary dissection was done. In pathology gross examination showed right ovary 6x4x2.5 cm. Surface of ovary showed bosselations and multiple papillary projections measuring 2x1x1 cm. Cut sections showed multiple cystic and solid areas with cyst wall showing papillary excrescences. Left ovary showed similar findings. Parametria showed tumour deposits. Deposits were also present over the small bowel. Lumpectomy specimen showed irregular firm grey area. Thirty axillary lymph nodes were identified. Microscopically- Bilateral ovaries had papillary serous cystadenocarcinoma with capsular infiltration and psammoma bodies with parametria showing metastatic deposits. Omentum, right and left paracolic gutter, right and left subdiaphragmatic area, small bowel and surface of rectum also showed metastatic deposits. Left breast lumpectomy specimen showed tumour emboli in lymph vascular spaces. Twenty seven of 30 lymph nodes showed metastatic deposits of adenopapillary carcinoma with peri nodal infiltration. Psammoma bodies were also noted. Immunohistochemistry showed axillary lymph node metastases positive for CA 125 (Fig-2)

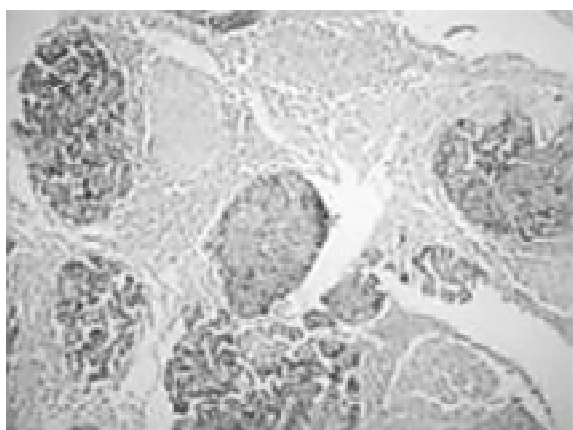


Fig-2:Immunohistochemistry showing axillary lymph node metastases positive for CA 125

and negative for ER and PR. Sections from the breast showed neoplastic cells positive for CA 125 (Fig-3) and ER, PR negative tumour cells present



Fig-3:Sections from the breast showing neoplastic cells positive for CA 125

within the spaces lined by CD 34 and factor VIII positive endothelial cells. On the basis of above findings she was diagnosed as a case of bilateral serous cystadenocarcinoma of ovaries with metastatic deposits at various sites as described before and lymph vascular emboli in the breast. Patient has been planned for chemotherapy (Paclitaxel 175 mg/m² and Carboplatin AUC 6 every 3 weekly) for six cycles.

DISCUSSION

Primary carcinoma of breast is a common tumour but metastatic involvement of breast is rare. Abrams et al in 1000 autopsies done on malignancies of epithelial origin showed 50 cases had metastasis to breast and only 0.2 % of them had primary ovarian carcinoma. So, ovarian carcinoma metastasising to breast is very rare.¹ Till date only 39 cases of carcinoma ovary metastasising to breast has been reported in English literature.² Clinical profile of these patients reveal that they present at a younger age. Median age at presentation is 46.28 years (range 16-70), in the present case also patient age was 47 years.² They usually develop metastasis after a short period of treatment of primary tumour (average duration 3 years). Metastasis can also present synchronously which is rarer as seen in the present case. Only

three cases of carcinoma ovary with synchronous breast metastasis have been reported. Usually these patients also have metastasis at the other sites (average 4.3 sites). Metastasis alone to breast is very rare. In literature review of 27 cases, all cases had metastasis to at least one organ. In this present case breast was the only site for metastasis.³ The histological subtype most commonly found in the metastatic lesion in the breast is papillary serous cystadenocarcinoma. 16 out of 32 cases for which histology has been mentioned in the literature were papillary serous cystadenocarcinoma. Other histologic subtypes were serous cystadenocarcinoma, lymphosarcoma, mucinous adenocarcinoma, granulosa cell tumour, choriocarcinoma, dysgerminoma, endometrioid carcinoma and carcinoid.² Metastatic lesion involving breasts as a rule are benign on appearance both clinically and in mammography finding. Clinically they are well-defined smooth, mobile, firm nodules with discrete border. Peau d orange, pagets disease and skin retraction is absent. In the present case clinically the lesion was not benign as axillary lymph node was palpable along with breast lump. There are more reports of exceptions to this rule, two cases have been reported to present with features of inflammatory carcinoma of breast, one case with induration only and two cases had ill defined lesion in breast.³

The most common radiographic feature is one or more round discrete nodules in breast, which is similar to benign nodules. Eccentric unusual location of discrete nodule in subcutaneous fat rather than in glandular tissue associated with extramammary cancer suggests strong possibility of metastatic lesion in breast.⁴ In a report more than 50 percent of the 51 patients who had breast surgery for non primary breast cancer had tumour located in subcutaneous breast tissue.⁵ Calcification is not observed in the metastatic lesion in breast. One author suggest that calcification in breast lesion almost rules out metastatic lesion in breast but four

cases of metastatic breast lesion with calcification has been reported and all of them are papillary serous cystadenocarcinoma.⁴

Histologically these metastatic lesions resemble their primary tumour. In patients of papillary serous cystadenocarcinoma with metastases to breast has breast lesion with pathology similar to primary tumour with psammoma bodies as seen the present case. Diagnosis is very difficult in a poorly differentiated carcinoma.⁶ Periductal and peri lobular distribution of malignant cells in the absence of intraductal or lobular carcinoma in situ in a patient with extramammary primary carcinoma is diagnostic.⁵ Immunohistochemistry stain using CA 125 can be useful.³ Fine needle aspiration cytology and frozen section cannot differentiate between primary tumour and metastatic lesion. Biopsy should be considered in all patients.⁵ In the present case FNAC was not able to confirm the metastatic nature of the lesion and histopathology showed malignant cells in lymph vascular space similar to primary disease in ovary. Immunohistochemistry confirmed the diagnosis, as malignant cells were positive for CA 125. The existence of CA125 positive and ER/PR negative tumour cells present in the vascular spaces bound by the CD34 and factor VIII positive endothelial cells indicated that indeed the tumour emboli originated from the primary in the ovary (similar immunohistochemistry pattern) and were not the tumour cells of infiltrating duct carcinoma. Besides this there was no infiltrating duct carcinoma in multiple sections studied from the breast. These patients should be managed as stage 4 ovarian cancer. Outcome of these patients are not very well studied. In a literature review average survival of these patients is less than one year. In this literature review 10 out of 15 patients died at the time of reporting. The 10 patients who died had average survival of 8.1 months. 5 patients who were surviving had average duration of 2 years. There is no obvious explanation for this difference.³

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