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Distant metastasis of serous carcinoma ovary: A Rare case report

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Abstract

Introduction: Ovarian carcinoma is second most common gynaecologic cancer and the leading cause of death from gynaecologic malignancy. Serous carcinoma of the ovary with metastasis to cervical lymph nodes, breast and thyroid is a rare event. It is associated with poor prognosis.

Case Report: We present a case of 50 year old female with swelling neck thyroid region, cervical region and lump in breast reported as distant metastasis of serous carcinoma of the ovary.

Conclusion: Serous carcinoma of the ovary presenting as cervical lymphadenopathy, metastasis to breast and thyroid is uncommon. An accurate histological diagnosis is required as this has great impact on treatment outcome.

Keywords: Ovarian carcinoma, distension, lymphatic

Introduction

Ovarian carcinoma is second most common gynaecologic cancer and the leading cause of death from gynaecologic malignancy. The majority of women with ovarian cancer eventually develop bulky disease in the abdomen, causing abdominal pain, distension, ascitis, bowel obstruction and other gastrointestinal and genitourinary symptoms. Disease may spread through peritoneal, lymphatic and haematogenous routes. Frequent sites of distant metastasis include liver, lung, pericardium, bone and brain. The important prognostic factor besides the histologic type is the stage of cancers as more than 60% have already metastasized to other tissues at the time of diagnosis. Lymphatic metastasis is more common than vascular metastasis. Metastasis of serous carcinoma ovary to cervical lymph nodes, breast and thyroid is a rare event. Various studies show the incidence of metastasis to thyroid is 3-15%, to the breast arrays from 0.5-1.2% and metastasis to lymph nodes increases with stage III-IV disease. Most of the patients in whom metastatic deposits develop have a history of advanced stage ovarian carcinoma. Extra abdominal lymph nodes are rarely involved and their detection may represent a challenge for the oncologist ^[1].

Case Report: We present a case of a 50 year old female who presented in our institute with swelling in the neck (thyroid region), bilateral cervical region and lump in right breast. Patient gave a clinical history of pain and swelling of abdomen, loss of appetite and weight loss for about one month. CECT abdomen done showed bilateral enhancing solid ovarian masses. FNAC of bilateral cervical lymph nodes, thyroid and breast lump was done. Physical Examination.



Fig 1: Lump Right breast, upper outer quadrant, hard on palpation

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Results

FNAC breast lump was done and it yielded blood mixed aspirate. Cytological smears prepared showed atypical cells arranged in sheets, clusters and forming glands at places.

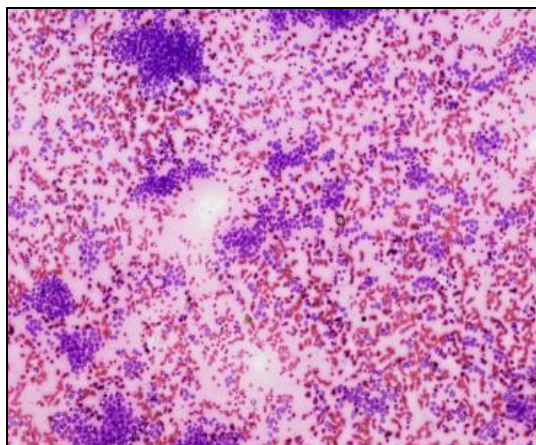


Fig 2a: FNAC breast lump shows metastatic deposits of adenocarcinoma (10x, Geimsa stain)

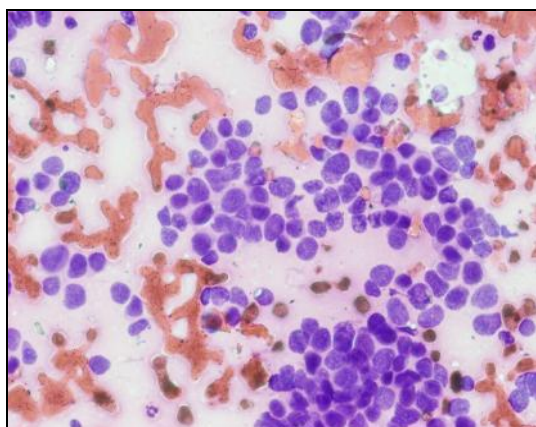


Fig 2b: FNAC breast lump shows metastatic deposits of adenocarcinoma (40x, Geimsa stain)

FNAC thyroid and bilateral cervical lymph nodes showed the similar picture.

Following FNAC, lumpectomy right breast was performed and was sent for histopathological examination.

Histopathological examination of breast lump revealed presence of malignant cells arranged in predominantly papillary architecture and further, confirmation on IHC with WT1 gene helped in establishing the diagnosis.

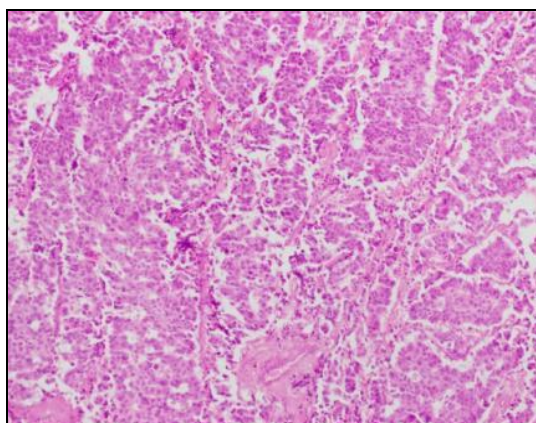


Fig 3a: H&E stained section shows branching papillary fronds, irregular nests of atypical cells. (10X, H&E)

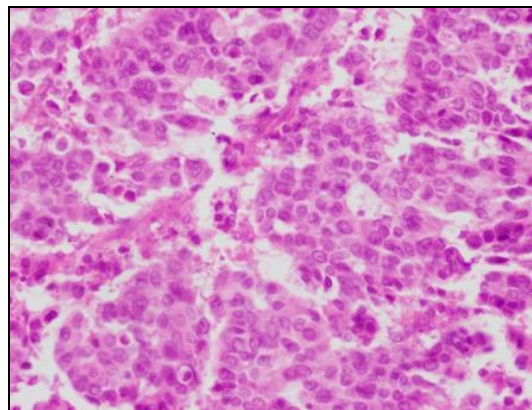


Fig 3b: H&E stained section showing branching papillary frond and nests of cells with moderate to marked nuclear pleomorphism, prominent nucleoli at places and eosinophilic cytoplasm. (40X, H&E) Immunohistochemistry-

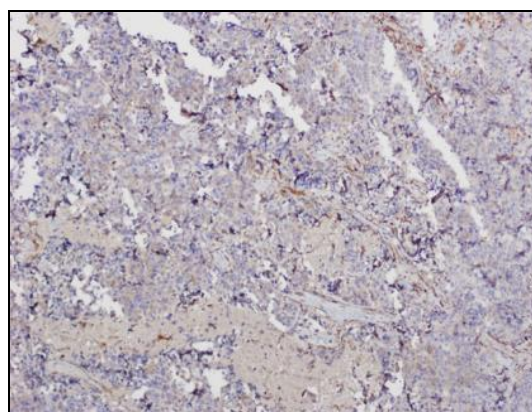


Fig 4a): Shows mild cytoplasmic WT1 positivity (10x)

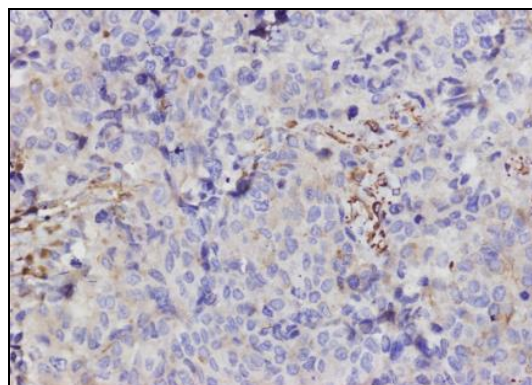


Fig 4b): Shows mild cytoplasmic WT1 positivity (40x)

Discussion

In this case study we have made an effort to differentiate the primary tumour from the distant metastatic sites as the distinction affects the treatment outcome. The mean age of patients with ovarian carcinoma is 45-55 years or 55-65 years. The case study was done on 50 years female presented in our institute.

This is in accordance with the study of Lavinia Domenici *et al.* [2] who reported a case of 47 years old female with metastasis to breast and axillary lymph node due to ovarian serous carcinoma. Approximately 80% of epithelial ovarian carcinomas are discovered as stage III or IV. Frequent sites of distant metastasis include liver, lungs, bone, brain and pericardium.

The patient in our study presented with swelling in the neck (thyroid region), bilateral cervical region and lump in right

breast. Kayikcioglu *et al.* [3] who described the case of a patient that was initially stage IIC epithelial ovarian cancer. After two years, she presented with bilateral metastatic breast disease originated from the primary ovarian cancer.

A retrospective case study done by Recine *et al.* [4], reported that the interval time between ovarian cancer diagnosis and metastases to the breast/axillary lymph nodes was 20 months. Patel *et al.* [5] reported five patients with supradiaphragmatic spread from epithelial ovarian cancer. FNAC of breast lump was performed and metastatic deposits of adenocarcinoma was ruled out. Histopathology and IHC of breast lump confirmed the metastatic deposits of ovarian carcinoma.

It is important to discriminate metastasis from primary cancer due to significant differences in prognosis and treatment. Immunohistochemistry markers such WT-1 and GCDPF-15 aid in defining the origin of tumour in metastasis. WT-1 positivity which is recognised for ovarian cancers was positive in our study.

This is in accordance with the study of Yamamoto *et al.* [6] who analysed WT-1 immunoreactivity in 119 patients with OSC and disclosed that WT-1 positivity is positively linked with high grade, advanced stage and higher Ki-67 index, higher bcl-2 expression and poorer outcome in a study. It is important to reach on accurate diagnosis with the help of histology and IHC as it affects the treatment outcomes.

Lymph node metastases in the neck are considered to be distant metastases and are classified as International Federation of Gynecology and Obstetrics stage IV. Such cases have been rarely reported and usually have poor outcomes.

In this case report, Lymphadenopathy in the neck was present initially before making a diagnosis of an ovarian mass. FNAC of cervical lymph nodes was performed which indicated the presence of metastatic adenocarcinoma. This is in accordance with a case series of 20 patients with ovarian cancer with neck lymph node metastases which was reported by Chen *et al.* [7]. They concluded that a subgroup of patients with neck metastases who had presented with limited pelvic cancer had much better overall survival than those patients who had cancer spreading beyond the pelvic cavity or were diagnosed with neck lymph node metastases when the primary ovarian cancer had recurred. A case of a 72 year old woman reported by Gontier *et al.* [8], who had been treated with ovarian papillary serous adenocarcinoma presented with metastatic lesion in left cervical area 16 years later.

Metastasis from ovarian cancer to distant sites like breast, thyroid, lymph nodes are associated with poor prognosis with majority of patients dying in one year. The patient in our study presented with poor prognosis and died within one year.

This is in accordance with David H Moore *et al.* [9] who studied 10 patients with gynaecologic malignancies metastasising to breast, the most common gynaecologic malignancy found was ovarian cancer and majority of patients presenting with breast metastasis died within 1 year.

Limitation: We have reported this rare case report which presented to us in our medical college and we need a series of cases to further improve our understanding about early diagnosis of such patients. To reach the exact diagnosis we need panel of IHC rather than two markers which we used in our study.

Conclusion

Ovarian cancer is known to metastasize throughout the peritoneum, to the abdominal and pelvic organs. Ovarian cancer is one of the leading causes of death in western countries. The most common sites of distant metastases are pleura, liver, lung and lymph nodes, while eye, skin, breast, bones, CNS, heart, central airways, rare intra-abdominal tissues, placenta, and specific lymph nodes have also proven to be targets of ovarian peritoneal cancer cells. Serous carcinoma of the ovary presenting as cervical lymphadenopathy, metastasis to breast and thyroid is a rare event and is associated with poor prognosis.

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