CASE REPORT

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Unusual Presentation of Ovarian Serous Cystadenocarcinoma

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Abstract

Ovarian epithelial cancers usually come to attention because of abdominal bloating or distension, pelvic pain, ascites, or an adnexal mass. It is very unusual for them to present first with blood-related abnormalities. Bone marrow involvement in ovarian carcinoma is rare, but can lead to pancytopenia and a leukoerythroblastic picture on peripheral smear, which may initially make the condition look like a primary haematological disorder.

We present a case of a 28-year-old woman who presented with pancytopenia secondary to metastatic adenocarcinoma infiltrating the marrow. This case highlights a rare and unusual presentation of ovarian serous Cystadenocarcinoma, where bone marrow infiltration led to pancytopenia and further affirms the need to consider an occult solid organ carcinoma in patients presenting with Pancytopenia due to Myelophthisis.

Key words: Ovarian Serous Cystadenocarcinoma, pancytopenia, myelophthisis.

Introduction

Ovarian cystadenocarcinoma is a common, highly malignant epithelial cancer of the ovary, comprising over 60% of ovarian cancers. It presents as large, complex, frequently bilateral cysts with solid, and vascular components, often causing abdominal pain and swelling. These tumours usually spread within the peritoneal cavity by transcoelomic spread where tumour cells detach and travel through peritoneal fluid, settling on the peritoneum, omentum, and abdominal organs or can grow by direct extension into the into adjacent organs such as the fallopian tubes, uterus, bladder, and rectum, while spread through the bloodstream is rare. We present a case of a 28-year-old woman who presented with Myelophthisis secondary to metastatic adenocarcinoma infiltrating the marrow.

Case Presentation

A 28-year-old woman presented with complaints of fatigue, loss of appetite, and generalised body ache for the past three months. For the last three days, she had also been experiencing low grade fever and had noticed petechial spots over her body. There was no history of significant weight loss, bleeding from any site, jaundice, pain abdomen, abdominal fullness, bony pains or any previous blood transfusion. She did report intermittent episodes of fever over the past one year. Her past surgical history was significant for cholecystectomy. She had regular menses with normal flow around 4 - 5 days with one living child of around 3 and half year (P1L1) born by NVD.

On examination, she was found to have marked pallor. There was no lymphadenopathy or organomegaly, and the rest of the systemic examination was essentially normal. Initial investigations showed pancytopenia, with haemoglobin 7.1 g/dL, total leukocyte count 2500 cells/µL, and platelet count 5000/µL. Her liver and renal function tests, as well as serum electrolytes, were within normal limits. Because she had history of fever along with cytopenias, an extensive infectious workup was carried out including dengue NS1 antigen, malaria antigen, Widal test, scrub typhus serology, leptospira testing, and blood cultures but all of these were negative. Peripheral smear showed a leukoerythroblastic blood picture, which raised suspicion of haematological malignancy or bone marrow infiltration. Patient had severe thrombocytopenia but despite this she was not suspected to have DIC because of her non-toxic presentation, no history of haematemesis, malena, epistaxis or any other bleeding manifestation, and no history of trauma/burns, Placental abruption/RPOC/ Pre-eclampsia/HEELP or any other obstetric emergency, no sign and symptoms of ALF, and no history of major transfusion in the past.

Bone marrow aspiration and biopsy was performed and it revealed atypical epithelial cells arranged in clusters and papillary patterns, suggestive of metastatic adenocarcinoma involving the marrow (Fig. 1). Following this a comprehensive work up was performed to identify the primary origin. Contrast-enhanced CT scan of the abdomen showed a complex cystic-solid lesion in the right ovary, raising the suspicion of primary ovarian malignancy, while

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the left ovary appeared bulky (~3.1*1.8 cm) with cystic changes and right ovary (~4.6*2.8) (Fig. 2). A small fibrotic subpleural lung nodule was also seen.

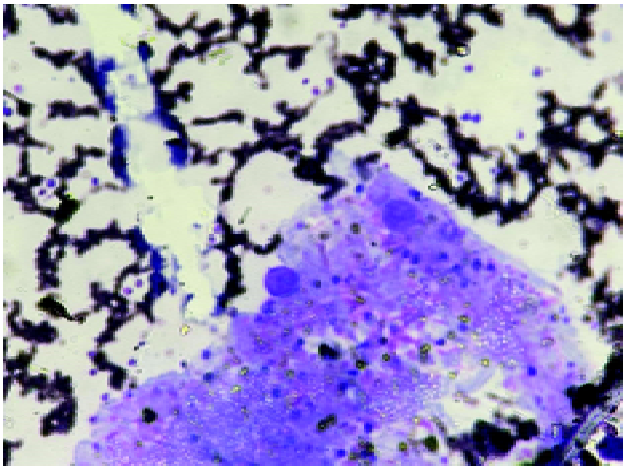


Fig. 1: *Bone marrow aspiration and biopsy revealed atypical epithelial cells arranged in clusters and papillary patterns, suggestive of metastatic adenocarcinoma involving the marrow.*

Tumour markers, including CA-125 and carcinoembryonic antigen, were within normal limits. There was no significant ascites or lymphadenopathy. Taking the marrow findings together with the imaging features, the diagnosis of ovarian serous cystadenocarcinoma with bone marrow metastasis was made. Possibility of krukenberg tumour was less likely as tumour was multiloculated with cystic solid morphology with enhancing walls/septa which shows specks of

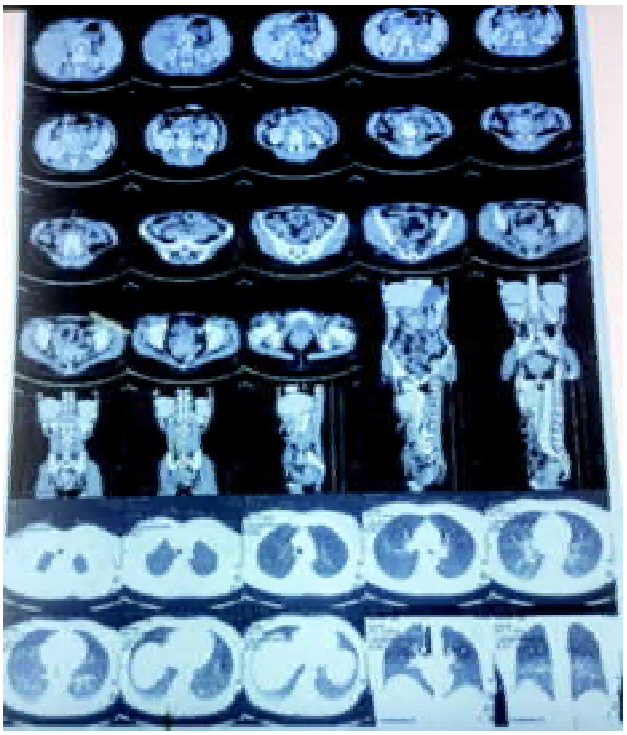




Fig. 2: *CECT scan of abdomen and chest demonstrating complex cystic-solid lesion in the right ovary and bulky left ovary with cystic changes and a small fibrotic subpleural lung nodule.*

calcification. No primary tumour was identified elsewhere with normal GI tract and no ascites on CT. Although bilateral involvement may favour krukenberg tumour, but cystic nature with calcification predominantly favours serous origin. Serous cystadenocarcinomas have peritoneal (Transcoelomic Spread) which make this case unique and interesting. During her hospital stay, she was managed supportively with packed red cell transfusions, platelet transfusions, and empirical antibiotics. She was later referred to gynaecology and oncology services for further management. Patient was planned for biopsy form tumor and PET-CT but in due course of time, patient developed LRTI (Lower Respiratory Tract Infection) leading to ARDS and patient eventually died.

Discussion

Ovarian cystadenocarcinoma is a common, highly malignant epithelial cancer of the ovary, comprising over 60% of ovarian cancers. It presents as large, complex, frequently bilateral cysts with solid, vascular components, often causing abdominal pain and swelling. These tumours usually spread within the peritoneal cavity by transcoelomic spread where tumour cells detach and travel through peritoneal fluid, settling on the peritoneum, omentum, and abdominal organs or can grow by direct extension into the into adjacent organs such as the fallopian tubes, uterus, bladder, and rectum, while spread

through the bloodstream is rare.

While ovarian cancer commonly spreads within the peritoneum; bone marrow metastasis (BMM) is estimated to occur in only 0.1 - 1% of cases, often presenting with severe anaemia and other haematological abnormalities[1,2]. The typical picture is of myelophthisis or myelophthisic anaemia, a severe form of bone marrow failure that occurs when normal marrow space is replaced by abnormal tissue, such as metastatic cancer. Metastatic cells from the ovary invade the bone marrow, destroying the haematopoietic tissue responsible for producing blood cells. This destruction leads to a "leukoerythroblastic picture" in the blood due to immature myeloid cells and nucleated red blood cells being released into the bloodstream prematurely. Patients often present with severe anaemia, fatigue, weakness, and potential thrombocytopenia .Ovarian cystadenocarcinoma, when metastasize to the bone marrow, is associated with a very poor prognosis, rapid progression, and high mortality. The survival after bone metastases of primary ovarian cancer is 33%, 15%, and 8% for 1, 3, and 5 years, respectively, with a median survival of 7.5 months (range 6 - 39 months)[3]. Dauplat *et al*[4] reported that bone metastases occurred only in 1.6% from primary ovarian cancer, hence confirming that bone involvement is rare in ovarian cancer. A leukoerythroblastic blood picture is an important clue to marrow involvement and should alert clinicians to the possibility of marrow infiltration in patients presenting with otherwise unexplained cytopenias. What makes this case interesting is that the patient presented atypically without any symptom suggestive of ovarian pathology or abdominal complaints.

CA-125 is a primary tumour marker used to monitor and help diagnose ovarian cystadenocarcinoma, with high levels commonly indicating advanced cancer. Levels are generally elevated above 35u/ML in 75 - 90% of stage III/IV cases, but it is not a conclusive diagnostic tool on its own and it can also be raised by benign conditions. For this reason, normal tumour markers as were found in our case should not lead to false reassurance when radiological and pathological findings are otherwise suggestive of malignancy[5]. Tumour markers such as PAX8, WT1, CK7, p53, and ER can be particularly useful in supporting a Müllerian high-grade serous origin and in helping to exclude a metastatic gastrointestinal primary[6].

This case is clinically relevant as it shows a rare and unusual presentation of suspected Ovarian Serous Cystadenocarcinoma. Such an atypical presentation can easily resemble infectious or primary haematological disorders which may delay the diagnosis. Further normal tumor markers may further puzzle the clinician and careful correlation of haematological investigations, imaging studies, and histopathology should be done to arrive at a logical conclusion.

Conclusion

Bone marrow metastasis in ovarian cancer is very uncommon and generally indicates advanced disease. When it does occur, patients may present with myelophthisis or myelophthisic anaemia, a leukoerythroblastic blood picture, or even disseminated intravascular coagulation. Because these findings are unusual for a gynaecological malignancy, the clinician should be aware of atypical and unusual manifestations of common malignancies. Further normal tumour markers should not lead to false reassurance when radiological and pathological findings are otherwise suggestive of malignancy and careful correlation of haematological investigations, imaging studies, and histopathology should be done to arrive at a logical conclusion.

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