Original Research Paper

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HIGH-GRADE SEROUS CARCINOMA OF LIKELY OVARIAN/PERITONEAL ORIGIN: A CASE REPORT

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ABSTRACT High-grade serous carcinoma (HGSC) is the most common and aggressive histologic subtype of ovarian cancer, often presenting at an advanced stage with poor prognosis. We report a rare case of a 33-year-old multiparous woman presenting with an abdominopelvic mass and pain. Radiological and histopathological evaluation suggested a diagnosis of high-grade serous carcinoma, likely ovarian or peritoneal in origin. The case highlights the importance of early suspicion, imaging, and histopathological confirmation for optimal management.

KEYWORDS :

INTRODUCTION

Epithelial ovarian cancers are the leading cause of gynecological cancer-related mortality worldwide. Among them, high-grade serous carcinoma (HGSC) accounts for approximately 70% of cases and is typically diagnosed at advanced stages (FIGO III–IV). Despite aggressive multimodal treatment involving cytoreductive surgery and platinum-based chemotherapy, recurrence is common. Early recognition and staging are crucial for best outcomes. This case report describes the clinical presentation, diagnostic work-up, and management considerations in a young female patient diagnosed with HGSC.

Case Report

A 33-year-old female presented with a large abdominopelvic mass associated with dull aching pain. The mass rapidly progressed to size of a football over a short duration of just 3 months. There were no bowel or bladder complaints, no c/o blood in stool, weight loss, or significant comorbidities. There was no history of fever, cough with hemoptysis or hematemesis or malena. No history of shortness of breath or any leg swelling.

Menstrual History: she had regular mernstruial cycle of 3-4 days/ 28 days with abverage blood flow.

Obstetric history : P3L3, with last childbirth 1 year ago, currently breastfeeding.

Past history was not significant, no h/o tuberculosis or any significant surgical history.

There was no history of ovarian, breast, colon, endometrial malignancy or tuberculosis in family.

Examination:

General Physical Examination- Patient was mild anemic and vitals were stable. No ascites or lymphadenopathy were clinically detected.

On Per Abdomen Examination-

A large predominantly solid, irregular abdominopelvic mass (~90×90 mm) with restricted mobility was noted. It occupied both the iliac fossa, umbilical region and extended irregularity in lower half of right hypochondrial region. Lower limit could not be reached.

On Per Speculum Examination- Cervix and vagina seemed healthy with no bleeding or discharge.

Bimanual Pelvic Examination- Fullness was present in all fornices. An irregular, predominantly solid non tender mass of size- 10x9cm felt in anterior and left fornices with restricted mobility. Cervix high up. Uterus could not be felt separate from the mass.

No nodularity felt in pouch of Douglas.

Parametrium free on per rectal examination.

Chest and cardiovascular system was normal.

No other abnormality was detected in other systemic examination and breast examination.

Investigations

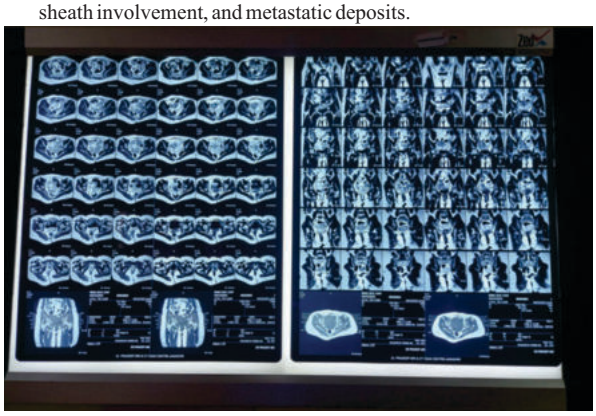
Routine investigations were within normal limits.

Tumor Markers- CA-125 was increased (513); other tumor markers like AFP, LDH, BETA- HCG, CA 19-9, CEA were found to be normal.

RMI: >200, s/o need for referral to gynaecological oncology center and staging CT scan

Radiological Investigations:

- Ultrasound revealed a mixed echogenic mass encasing the uterus, with a left ovarian cystic lesion (39×35 mm).
- MRI abdomen and pelvis suggested a large heterogeneous pelvic mass with suspicion of ovarian malignancy, peritoneal/rectus sheath involvement, and metastatic deposits.



As MRI suggested metastatic deposits, exploratory laparotomy was done and tissue biopsy taken and sent for HPE.

- Histopathology demonstrated features consistent with high-grade serous carcinoma, showing tumor cells arranged in nests and micropapillary patterns, nuclear pleomorphism, psammoma bodies, and necrosis.

Provisional Diagnosis: High-grade serous carcinoma, likely ovarian or peritoneal in origin, with metastatic spread.

DISCUSSION

High-grade serous carcinoma is characterized by aggressive clinical behavior and poor prognosis due to its late presentation. The pathogenesis often involves TP53 mutations and BRCA1/2 dysfunction. Histologically, HGSC shows papillary, glandular, or solid growth patterns, marked nuclear atypia, and high mitotic activity.

New FIGO Staging Classifies this as Stage IIIC

The present case is unusual as the patient was only 33 years old, much younger than the typical age group (50–70 years). Radiological findings suggested advanced disease, with peritoneal involvement and

possible metastases. The histopathological diagnosis was supported by psammoma bodies and high-grade nuclear features. Immunohistochemistry (WT1, PAX8, p53, Ki-67) would further confirm the diagnosis.

Management generally includes neoadjuvant platinum-based chemotherapy (Carboplatin + Paclitaxel), followed by interval cytoreductive surgery. Targeted therapy with bevacizumab or PARP inhibitors may be considered depending on BRCA/HRD status. Despite treatment advances, survival outcomes remain modest, underscoring the need for early detection strategies and genetic counseling in younger patients.

CONCLUSION

This case emphasizes the diagnostic challenges and aggressive nature of high-grade serous carcinoma. Early suspicion, detailed imaging, histopathology, and molecular testing are essential for accurate diagnosis and treatment planning. Young age at presentation, as in this case, warrants genetic testing and family counseling. Multidisciplinary management with chemotherapy, cytoreductive surgery, and targeted agents remains the cornerstone of therapy.

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