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Case Series

Ovarian tumors: a case series from a tertiary care center

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ABSTRACT

Ovarian cancer is the third most common malignancy among women in India and accounts for approximately 6% of cancer-related deaths, with late-stage presentation being frequent due to vague and nonspecific symptoms. This case series describes twelve patients with ovarian neoplasms diagnosed over six months at a tertiary care center, highlighting the clinical diversity and age-related distribution of these tumors. Most cases were observed in postmenopausal women above 50 years of age, with histopathological types ranging from high-grade serous carcinoma and mucinous carcinoma to mucinous cystadenoma, granulosa cell tumor, dysgerminoma, and metastatic malignant melanoma. Clinical manifestations included abdominal pain, distension, ascites, respiratory difficulty, and in one case, incidental detection during infertility evaluation. Risk factors such as nulliparity, delayed childbearing, and family history were noted. Management strategies varied from surgical excision for benign lesions to cytoreductive surgery with adjuvant chemotherapy for malignant cases. This study underscores the heterogeneity of ovarian tumors and the critical importance of early recognition, accurate histopathological classification, and individualized treatment planning. Despite advances in surgical and chemotherapeutic modalities, prognosis in advanced disease remains poor, emphasizing the need for improved screening strategies, molecular research, and targeted therapies to enhance survival and quality of life.

Keywords: Ovarian tumors, Case series, High-grade serous carcinoma, Mucinous cystadenocarcinoma, Dysgerminoma

INTRODUCTION

Ovarian cancer ranks as the third most common gynecological malignancy in India, following cervical and breast cancers, and accounts for approximately 6% of cancer-related deaths in women.[1] It is often termed a "silent killer" due to vague, nonspecific symptoms, resulting in delayed presentation and advanced-stage diagnosis in most patients.[2] Risk factors include advancing age, nulliparity, delayed childbearing, and hereditary predispositions, particularly BRCA1/2 mutations.[3] Histologically, ovarian tumors are heterogeneous, comprising epithelial, germ cell, and sex cord-stromal tumors, with high-grade serous carcinoma being the most frequent malignant subtype.[4]

Despite improvements in imaging, tumor markers, cytoreductive surgery, and chemotherapy, prognosis in advanced ovarian cancer remains poor, with five-year survival rates under 40% for advanced stages.[5] Case series play an important role in describing real-world presentation and management outcomes, contributing to better understanding of disease heterogeneity and aiding early recognition.[6]

This case series reports twelve patients with ovarian neoplasms encountered at a tertiary care center, emphasizing their diverse clinical manifestations, histopathological findings, and management strategies.

CASE SERIES

Case 1

70-year-old female patient P4L4, who has been postmenopausal for 20 years. She presented with the

complaint of abdominal pain, abdominal distension, bloating, nausea and vomiting that initially occurred three months before admission.

On per abdominal examination, gross tense ascites was present, mass could not palpate.

On per vaginal examination, fullness was present in the posterior fornix.

She was evaluated; CA125 – 1947 was on the higher side.

Ultrasonography (USG) of the abdomen and pelvis was done suggested gross ascites with a mass of size approximately 9.4×7.8×8.2 cm from which bilateral adnexa could not be visualized separately.

USG-guided ascitic tapping was done, and the cytology report came out to be positive for epithelial ovarian malignancy.

Computed tomography of abdomen with pelvis was done showing solid cyst of size 9.8×7.4×9.2 cm in midline, both ovaries visualized with omental and mesenteric deposits.

After confirming the diagnosis as advanced stage ovarian carcinoma, the patient was started on adjuvant chemotherapy with carboplatin and Paclitaxel and completed six cycles.

After six cycles of chemotherapy, contrast-enhanced computed tomography (CECT) abdomen and pelvis was done showing a mass of 3.9×4.3×6.9cm in the left adnexa with no lymph node metastasis (Figure 1).

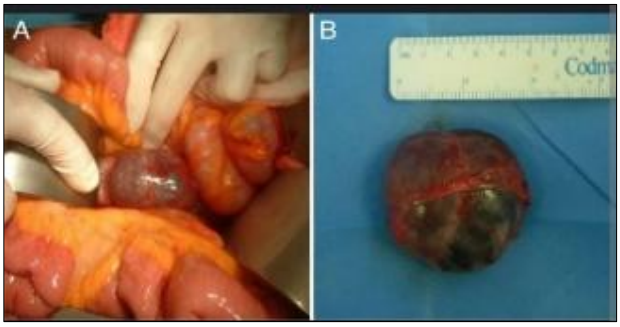

Figure 1: Intraoperative findings of case 1 showing solid-cystic adnexal mass with ascites and omental deposits.

After appropriate preoperative evaluation and clearance, she was scheduled for exploratory laparotomy with total abdominal hysterectomy with bilateral salpingo-oophorectomy Right side mass of approximately 4×5cm and complex in appearance. There was e/o sigmoid colon adhered to ovarian mass and to posterior wall of uterus, intra-op surgical assistance was taken adhesiolysis done. Histopathological examination suggested high grade serous carcinoma of ovary.

Case 2

A 32-year-old P2L2 female came with complaining of abdominal distension with pain in abdomen. Patient was having breathing difficulty because of gross ascites for 15-20 days. She had h/o loss of weight and appetite for 2 months. No bowel or bladder complaints.

On admission patient was not maintaining saturation (92-93% in RA) and was having breathing difficulty in lying down position. On per examination there was abdominal distension with gross ascites and nonmobile firm solid mass of 18-20 weeks of uterine size. On per-vaginal examination right forniceal fullness was present. No external superficial lymph node was palpable (Figure 2).

Figure 2: Intraoperative finding of case 2 showing large multiloculated ovarian mass.

Therapeutic ascitic tapping of 1l of clear ascitic fluid was done. Cytology of ascitic fluid was negative for malignancy. CECT pelvis suggested a right adnexal mass of 12×13×8 cm with papillary projections and septa with mesenteric deposits.

Patient underwent cytoreduction along with total abdominal hysterectomy with bilateral salpingo-ophorectomy with omentectomy.

Intra op 5l of blood stained ascitic fluid suctioned out, there was large solid- cystic masses arising from both ovaries around 5×6×5 cm.

On histopathological examination mucinous cystadenocarcinoma of both ovaries with tumor infiltration in omentum. Patient sent for chemotherapy after stabilisation. She received-total no of chemoradiation.

Case 3

63-year-old P1L1 came with complaining of abdominal pain 8 months back when she was evaluated for the same with CA 125- 2141 and CECT suggested solid cystic mass of 14×9×8cm with mesenteric, pelvic and lymph node involvement (Figure 3). USG guided biopsy taken and

histopathological examination suggested ovarian surface epithelial tumor.

Patient received 3 cycles of chemotherapy in a span of 3 months.

Figure 3: Showing a solid ovarian mass with adherent mesentery and bowel.

On follow up after 6 months CA125 reduced to 48, size of lesion reduced to 6.2×5.4×5.9 cm, no evidence of any external superficial lymph node involvement. Patient posted for cytoreductive surgery.

Intra op evidence of large tubo-ovarian mass in the left adnexa which is adhered to omentum. Total abdominal hysterectomy with bilateral salpingo-ophorectomy with omentectomy done.

Histopathological examination suggested serous cystadenocarcinoma of ovary. Patient was sent for adjuvant chemotherapy afterwards.

Case 4

A-48-years old female patient P2L2 came with complaints of acute abdominal pain and vomiting episodes 2-3 episodes per day for 2-3 days. Along with complaints of abdominal distension for 20-25 days gradually increasing in nature with no h/o fever, loose stools.

On examination tachycardia was present (pulse-120).

On per abdominal examination-mass of size approximately 20-22 weeks size, mobile, cystic in consistency with regular margins. Tenderness present, no guarding and no rigidity.

On per vaginal examination - anterior forniceal fullness were present and mass was felt separately from uterus .no external superficial lymph nodes were palpable.

USG abdomen + pelvis done – s/o benign neoplastic etiology abdominal with mass of size approximately 14.2×10×12 cm not separately visualized from right adnexa. CECT abdomen + pelvis done-s/o neoplastic aetiology from right adnexa 15×10×15 cm multiloculated, cystic in consistency (Figure 4).

Figure 4: Operative photograph of case 4 showing multiloculated right adnexal cyst (mucinous cystadenoma).

CA125 was normal (3.1 IU/ml).

Patient underwent exploratory laparotomy with right salpingo-ophorectomy. Intra-op- there was haemorrhagic cyst of around 15×12×14 cm.

Histopathological examination revealed mucinous cystadenoma of right ovary.

Case 5

A 42 year nulligravida presented with complaints of swelling in the labial region for two and a half months, associated with severe itching, was reported. She also had complaints of white discharge PV for 2 months, which was nonfoul smelling and not blood-stained.

On examination, her abdomen was soft and non-tender, local examination found 2×3 cm growth arising from labia minora, irregular surface, and hyperpigmented lesion with white patches and ulcerated surface. Left inguinal lymph nodes were palpable. Per speculum examination revealed pigmented lesions over the anterior vaginal wall, anterior and posterior lip of cervix (Figure 5).

On ultrasonography there was 2.4×2.5 cm heterogenous mass with internal vascularity from anterior vaginal wall, no other abnormality detected. Vaginal biopsy taken, on histopathological examination suggested malignant melanoma.

Patient received 1 cycle of chemotherapy (paclitaxel + carboplatin). After 1 month of chemotherapy patient diagnosed with influenza virus infection and her general condition deteriorated. She was managed in intensive care unit with ventilatory support for 5 days. Post extubation she was evaluated for not maintaining saturation and pancytopenia, diagnosed with moderate pleural effusion and ascites. Pleural tapping done, supportive treatment given including blood transfusion. CECT of pelvis was

done which suggested 9.7×8.3×7 cm irregular solid cystic mass arising from right ovary. CA 125-2263, Pleural fluid cytology and fine needle aspiration cytology from ovarian mass suggested metastatic malignant melanoma. Patient resumed with chemotherapy as her general condition was improved.

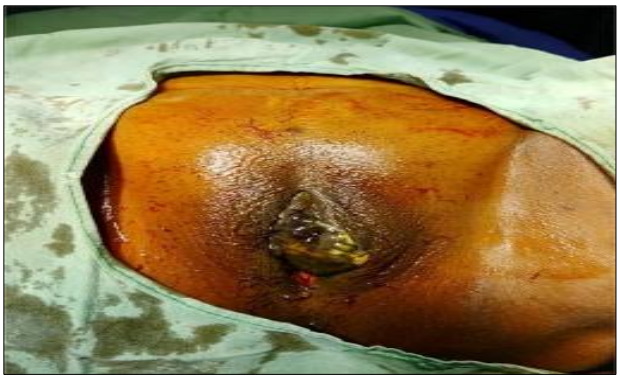

Figure 5: Clinical image of case 5 showing vulvar lesion consistent with malignant melanoma.

Case 6

A 76-year-old P5L4D1, post-menopausal (for 20 years) came with complaining of post-menopausal bleeding for 15 days associated with abdominal distension for 20-25 days. No history of white discharge, anorexia or weight loss.

On per abdominal examination there was a mobile solid to cystic mass of 18-week size, on per speculum examination suggested normal cervix and vagina, on per vaginal examination right forniceal fullness present (Figure 6).

Figure 6: Specimen of case 6 showing large solid mass.

CA125 was normal (6.5 IU/ml).

CT scan suggestive of neoplastic etiology of right ovary with cyst of 14×10×6 cm with multiple thick septa.

Patient underwent exploratory laparotomy. Intra op evidence of large ovarian cyst of 14×10×10 cm from right ovary with normal uterus, left ovary normal. Total abdominal hysterectomy with bilateral salpingo-oophorectomy done. Post op patient was stable.

Histopathological examination suggested mucinous cystadenocarcinoma of right ovary. Patient sent for adjuvant chemotherapy after post op care.

Case 7

A 69-year-old P2L2, post-menopausal (20 years) came with complaining of pain in abdomen along with abdominal distension since 2-3 months. Abdominal pain was dull aching in nature, not associated with any aggregating or relieving factors. patient had history of progressive weakness and tiredness along with loss of appetite and weight loss during the same duration.

On general examination patient was cachexic. On per abdominal examination there was mass of around 16-18-week firm to hard mass with restricted mobility was present in the left adnexa. Per vaginal examination suggested a left forniceal fullness, rest was normal (Figure 7).

Figure 7: Per-operative photograph of case 9 showing bilateral ovarian masses with omental deposits.

Patient was evaluated, CA 125 was 343, moderate anaemia was present (corrected with blood). CECT abdomen + pelvis suggested a solid cystic mass of 10×8×8 cm arising from the left adnexa from which ovary could not separately visualised. Evidence of peritoneal, mesenteric tumor deposits was present with pelvic lymph node involvement. USG guided biopsy was taken from the lesion, histopathology report came to be high grade serous cystadenoma carcinoma of left ovary. Patient was directly sent for chemotherapy as her general condition was not favourable for debulking surgery.

Case 8

A 56-year-old P3L3, post-menopausal (for 10 years) came with complaining of abdominal pain along with abdominal distension for 8-10 days, which was gradual in onset and progressive in nature. Patient also had history of loss of appetite with weight loss for 1-2 months.

On per abdominal examination there was a 20-week uterine size mass with restricted mobility and firm in consistency present in the left adnexa along with gross ascites. On per vaginal examination revealed left forniceal fullness (Figure 8).

Figure 8: Image of case 11 showing giant ovarian cyst occupying entire abdominal cavity.

Patient was evaluated, therapeutic and diagnostic ascitic and pleural tapping done. Cytology report suggestive positive for malignant cells.

CA125 was-324.

CECT abdomen + pelvis suggested solid cystic lesion of 9×8.6×9.1 cm with non-enhancing necrotic area within arising from left adnexa from which left ovary could not be separately visualised. A similar lesion of size 3×3.6×3.4 cm in the right adnexa with enhancing solid components. Multiple serosal deposits along the lest adnexa, peritoneal deposits, and lymph node involvement of pre, para-aortic, mesenteric and right iliac nodes.

USG guided FNAC taken from the lesion in left adnexa after tapping of ascitic fluid which suggested mucinous cystadeno-carcinoma of both ovaries.

Patient started with chemo- radiation (paclitaxel + carboplatin) along with palliative care.

Case 9

A 35-year-old nulligravida came with complaining of abdominal distension for 1 month, breathing difficulty for 2-3 days. She was known case of schizophrenia, accompanied by a care taker from mental asylum. There were no history of abdominal pain or any associated complaints. On per abdominal examination there was tense ascites, due to which mass was not palpable. USG abdomen with pelvis was done which suggested neoplastic etiology of right adnexa with gross ascites. Therapeutic ascites tapping was done, after which patient symptoms was relieved.

CECT pelvis done which suggested solid cystic lesion of size 10×5.9×6.8 cm in pelvic cavity from which bilateral ovaries could not visualised separately, omental deposits present.

CA 125 was 401.

Patient taken for cytoreductive surgery, intra op evidence of gross ascites (3l), exuberant growth in bilateral ovaries. Sigmoid colon adhered to posterior wall of the mass. Adhesiolysis done, total abdominal hysterectomy with ovaries with ovarian mass removed, partial omentectomy done.

Histopathology suggested serous cystadeno-carcinoma of bilateral ovaries with omental metastasis.

Case 10

A 24-year-old G3P2L1D1 with 8 months of gestation came with abdominal USG finding of multiloculated lesion of size 10.8×16.7×13.5 cm arising from left adnexa extending in to epigastric region likely suggestive of malignant neoplastic etiology of left ovary with moderate ascites. 4 years back during her second pregnancy she had similar mass in the left ovary, during LSCS cystectomy done, on histopathological examination suggested malignant germ cell tumor (dysgerminoma).

Patient was asymptomatic except mild epigastric pain and fullness of abdomen. On examination uterus was 30-32 week of gestation, with cystic mass felt in the left lumbar region of size 10×10 cm extending up to epigastric region. Moderate ascites was present.

On further evaluation CA 125-37.5, AFP-138, and CEA-1.1. MRI pelvis confirmed recurrence of dysgerminoma of left ovary.

Considering recurrence of malignancy and potential risk of peritoneal metastasis, at 37 weeks of gestation patient was taken for elective LSCS with obstetric hysterectomy with bilateral salpingo-oophorectomy and omentectomy after taking written and informed consent.

Histopathological examination came out recurrent dysgerminoma of left ovary with no omental metastasis.

Case 11

A 49-year-old P2L2 came with complaints of abdominal distension with breathlessness for 7 months. It was associated with progressive anorexia and weakness. On per abdominal examination there was tense ascites with mass of around 20×5×20 cm with restricted mobility. Ultrasonography suggested large ill-defined solid cystic mass extending whole of abdomen and pelvis of size 17×20×25 cm with gross ascites. bilateral mild to moderate pleural effusion was seen. CA 125 was 423, CECT abdomen with pelvis 26×22×32 cm with solid component of 7.7×4.8×6.4 cm with thinning of anterior

abdominal wall, mass encasing the ureter causing mild upstream hydroureteronephrosis.

Patient was taken for cytoreductive surgery, intra op evidence of large ovarian cyst 25×30×25 cm extending all over the abdomen, upper extend could not be visualised as mass is adherent to anterior abdominal wall arising from right ovary, left ovary and uterus normal. Cyst punctured 7l haemorrhagic fluid suctioned out, cyst wall excised marsupialisation done. Biopsy taken from solid areas and sent for histopathological examination. Left oophorectomy done.

Histopathological examination suggested high grade serous cystadenocarcinoma.

Case 12

A 28-year-old nulligravida female came as a case of primary infertility of 3 years. On per abdominal examination was with in normal limits, per vaginal examination suggested normal sized uterus with left adnexal mass of around 5×5 cm, cystic in consistency. Ultrasonography suggested left ovarian complex cyst of size 7×7×6 cm, CA 125–14. Patient was taken for diagnostic hystero-laparoscopy with ovarian cyst excision. There was intra op evidence of left ovarian cyst of size 7×6×6 cm with mucoid tissue inside, right ovary and uterus was normal. Cyst excision done, on histopathological examination showed granulosa cell tumor.

DISCUSSION

Ovarian cancer continues to represent a major challenge in gynecological oncology due to its aggressive nature and late presentation. Globally, over 300,000 new cases are diagnosed annually, ranking it as the eighth leading cause of cancer death among women.[1] In India, its incidence is rising, especially in urban populations.[8]

In this case series, most patients were postmenopausal, aligning with the well-established higher risk of ovarian malignancy in women over 50 years.[3] Nulliparity was observed as a recurring risk factor, consistent with the hypothesis that uninterrupted ovulation increases lifetime risk.[9] The most common clinical manifestations were abdominal pain, distension, ascites, and weight loss, similar to findings from previous reports.[10]

Histopathologically, high-grade serous carcinoma was the predominant subtype, followed by mucinous carcinoma, dysgerminoma, granulosa cell tumor, and metastatic melanoma. This distribution is consistent with international data, with serous carcinomas known for their peritoneal spread and poor prognosis.[4] Benign lesions such as mucinous cystadenoma were also observed, underscoring the spectrum of ovarian neoplasms encountered in clinical practice.

Management strategies in this series included cytoreductive surgery and adjuvant chemotherapy (carboplatin and paclitaxel), which remain the standard of care.[12] Where primary surgery was not feasible due to poor performance status, neoadjuvant chemotherapy was used, consistent with EORTC and CHORUS trial evidence.[13] Germ cell tumors such as dysgerminoma were treated surgically, achieving good outcomes, in agreement with established guidelines.[14]

CA-125 was elevated in most malignant cases, reinforcing its utility as a diagnostic and follow-up biomarker, though its limited specificity necessitates correlation with imaging and histopathology.[15] Advances in molecular diagnostics, such as BRCA mutation testing and homologous recombination deficiency assessment, now guide targeted therapy with PARP inhibitors and hold promise for improved survival.[16]

This case series highlights the heterogeneity of ovarian tumors and the need for multidisciplinary management. Early recognition, risk stratification, and individualized treatment are essential to improve survival outcomes. Future research should focus on development of sensitive screening modalities, molecular profiling, and novel targeted therapeutics to address poor survival rates in advanced disease.

CONCLUSION

Ovarian neoplasms present with diverse clinical features and histopathological subtypes, often leading to diagnostic and therapeutic challenges. In this case series, most malignant tumors were observed in postmenopausal women, with high-grade serous carcinoma emerging as the predominant subtype, while benign and rare variants such as mucinous cystadenoma, dysgerminoma, granulosa cell tumor, and metastatic melanoma were also encountered. Cytoreductive surgery followed by adjuvant chemotherapy remained the cornerstone of management in advanced disease, whereas benign lesions were effectively managed with surgical excision alone. The findings emphasize the importance of early recognition, accurate histopathological classification, and individualized treatment planning to improve outcomes. Despite therapeutic advances, the prognosis in advanced ovarian cancer remains poor, underscoring the urgent need for improved screening tools, biomarker discovery, and molecular research to facilitate early detection and targeted therapies.

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