MATHEWS

Case Report

Mathews Journal of Cancer Science

Enigma of Recurrent Ovarian Cancer

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ABSTRACT

Recurrent cancer is phenomenon that happens when microscopic cancer cells remain in the body after initial treatment and grow back months or years later, either locally, or regional, or metastatic in a distant part of the body. The most common cancers in women with notable recurrence risks include ovarian cancer, breast, endometrial and cervical cancers.

Recurrence rates are high in ovarian cancers to the tune of approximately 70% of patients. Stage at initial diagnosis dictates risk ranging from ~10%) in stage I, going to up to 30% in Stage II, in Stage III (70%–90%), and Stage IV (90%–95%). Abdominal cavity is the most common location of recurrence. A longer Disease-Free Interval (DFI) meaning longer intervals between primary treatment and the first relapse correlate with better post-recurrence survival. Patients who were candidates for secondary cytoreductive or debulking surgery to completely remove visible recurrent tumours often experience significantly better survival rates. While recurrent ovarian cancer is rarely completely curable, it is often treated and managed long-term as a chronic condition using repeat platinum-based chemotherapy or targeted therapies.

Materials & Methods: This is a case report with patient's husbands' information with literature review. It all started as complaints of loss of appetite, abdominal discomfort in early April 2023, treated with anti-helminthics and anti-parasitic medication with temporary relief. During second episode of similar complaints after 3 months, an endoscopy & scanning showed nothing of concern in GI system, but a routine scanning of the pelvis & abdomen showed a hazy shadow in left ovary, and Fine Needle Aspiration Cytology (FNAC), confirmed ovarian cancer stage 3. She underwent salpingooopherectomy, followed by 9 sessions of chemotherapy, with combination of a platinum-based Carboplatin drug plus Paclitaxel a taxane medication administered intravenously (IV) every 3 weeks, and she was declared cancer free in June 2024, in USA, she was breathless and investigations led to identification of pleural effusion, and tapping of 1.5 litre of fluid for immediate relief was done. On return to India in July 2024, an oncologist found secondaries in chest and abdomen as pleural effusion and ascites respectively. After tapping of 0.5 litres pleural

Vol No: 11, Issue: 01

Received Date: October 26, 2026

Published Date: November 27, 2026

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Citation: Suresh K. (2026). Enigma of Recurrent Ovarian Cancer. Mathews J Cancer Sci. 11(1):55.

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effusion and 2 litres of abdominal fluid another course of 6 sessions of chemotherapy- PARP inhibitor - Olaparib, was given. Thereafter she was in and out of hospital for tapping pleural and abdominal fluids & detailed investigations led to diagnosis of gastric metastasis from ovarian cancer, unusual, 18 months after ovarian cancer's initial diagnosis. The literature review included search terms like ovarian cancer metastasis in stomach, "Reverse Krukenberg" tumour, in last decade. Gastric metastasis due to ovarian cancer primary were included and same with primaries in breast, lungs and melanomas were excluded.

Outcome: After recurrence leading to ascites in mid-2024, our case was back and forth to the hospital for abdominal paracentesis, inability of oral feeding leading to Ryles tube feeding, IV Antibody-drug conjugate. Finally, she succumbed in November 2025. This represents a typical case of ovarian cancer with recurrences, especially when diagnosed late.

Keywords: Ovarian Cancer, Metastasis, Disease-Free Interval, Fine Needle Aspiration Cytology

INTRODUCTION

Ovarian cancer represents approximately 3.44% of all cancer cases in India and stands as one of the leading causes of gynaecological cancer mortality, with roughly 62% of patients presenting at advanced stages (Stage III–IV). Even after successful primary treatment, high rates of recurrence are observed across advanced epithelial ovarian cancers. [1].

Gastric metastasis of ovarian cancer is clinically uncommon because ovarian cancer spreads predominantly through peritoneal seeding rather than hematogenous pathways. As ovarian cancer cells shed directly from the surface of the ovary into the peritoneal fluid, circulating throughout the pelvic and abdominal cavities and implanting on nearby peritoneal surfaces, like omentum, or pelvic organs rather than traveling through blood vessels to the stomach. True distant spread to internal organs *via* the bloodstream is comparatively rare (2-3%) in ovarian cancer. While the stomach has a rich blood supply, specific cellular and molecular adhesion mechanisms—such as the way tumour cells interact with gastric tissue and vascular barriers make the gastric wall an unusual site for ovarian cell colonization are the anatomical and microenvironmental factors for the rarity. Being a rare entity this case report makes it worth reporting. This article addresses the knowledge and practice gaps of managing gastric metastasis of ovarian cancer, and inevitable outcome.

According to World Cancer Research Fund data, there are approximately 324,603 new ovarian cancer cases and 206,956 deaths worldwide each year. Across general oncology and autopsy studies, secondary tumours of any origin in the stomach are rare, occurring in roughly 0.2% to 1.7% of all cancer patients and roughly 0.3% to 6.7% of female gastric cancer patients. Breast cancer, lung cancer, and malignant melanoma account for most of gastric cancer cases. Systematic reviews of medical literature highlight the scarcity of ovarian-to-gastric spread, with fewer than 25 to 30 well-documented cases published globally over several decades [2,3].

In India, no dedicated national registry tracks the exact subset of ovarian cancer patients who develop stomach metastases, as the phenomenon is limited to isolated hospital case reports. Despite India carrying one of the highest absolute burdens of ovarian cancer globally, with roughly 45,500 to 47,300 new diagnoses & 28,700 to 33,000 deaths annually. Approximately 70% of Indian women with ovarian cancer are diagnosed after the disease has already spread beyond the ovary, with 29% presenting with distant metastases at initial diagnosis. Despite this high volume of advanced-stage ovarian cancer in India, gastric metastasis remains confined to rare single-patient reports in journals. Indian clinical practice, diagnostic challenges often arise in distinguishing whether a patient has primary ovarian cancer spreading to the stomach, a primary gastric tumour spreading to the ovaries, or two synchronous primary cancers [2,4]

Recurrent ovarian cancer has a median overall survival time of roughly 16 to 23 months after the first relapse is diagnosed, though individual outlooks vary widely based on how the cancer responds to subsequent therapies. If the cancer returns 6 months or more after finishing initial platinum-based chemotherapy, the outlook is generally more favourable because platinum drugs (like carboplatin) can often be used again. If the cancer returns in less than 6 months or progresses during treatment, the prognosis is poorer, requiring non-platinum second-line drugs [3].

A longer Disease-Free Interval (DFI) meaning longer intervals between primary treatment and the first relapse correlate with better post-recurrence survival. Patients who were candidates for secondary cytoreductive or debulking

surgery to completely remove visible recurrent tumours often experience significantly better survival rates. The presence of specific mutations, such as BRCA1 or BRCA2, can improve response rates to targeted maintenance therapies like PARP inhibitors. Localized or retroperitoneal relapses generally carry a better prognosis than widespread peritoneal carcinomatosis or distant spread [3,4].

Recurrent ovarian cancer has a much higher relapse rate around 70%-80% of advanced cases compared to primary breast cancer, benefits from routine mammograms & self-exams, catching tumours before they spread. Ovarian cancer lacks such effective early-screening tools and is therefore, usually diagnosed at an advanced stage [3].

Why Recurrence is High in Ovarian Cancer:

1) Late-Stage detection: Most ovarian cancers are found after the disease has spread through the abdomen, making microscopic removal difficult.
2) High relapse rate: Up to 80% of women with advanced epithelial ovarian cancer experience a recurrence after initial treatment with surgery and chemotherapy.
3) Chemoresistance: Surviving cancer cells often become resistant to subsequent lines of chemotherapy over time [1,4].

This article is based on a case report of trials and tribulation of a close friends' wife and literature review to alert women, families and general practitioners, the importance of early suspicion four main symptoms of ovarian cancer namely: i) abdominal pain, ii) Persistent bloating, iii) Feeling full, iv) Needing to pee more frequently.

CASE REPORT

Come mid-November 2026, we observe first anniversary of Ms Prabha (name changed) a close friend's wife, who died of ovarian cancer in 2026.

Ms Prabha as 65-year-old lady started complaints of lack of appetite, abdominal discomfort and back in early in April 2023. After routine check-up in a private hospital and treatment with anti-helminthics and anti-parasitic (amoebic and Giardiasis) and a course of antibiotics over a period of 4 weeks, that gave an 80% relief but recurred similar symptoms in next 2 weeks. This time a gastro-electrologist was consulted and an endoscopy & scanning showed nothing of concern GI system. A scanning of the Pelvis & abdomen showed a hazy shadow in left ovary, and Fine Needle Aspiration Cytology (FNAC), confirmed ovarian cancer stage 3.

The diagnosis led to a Total Abdominal Hysterectomy with Bilateral Salpingo-Oophorectomy (TAH-BSO). A salpingo-oophorectomy is a surgical procedure to remove one or both ovaries and fallopian tubes. The biopsy confirmed it to be High-Grade Serous Carcinoma grade iii. No BRCA or HRD Biomarkers were done. TAH_BSO was done to prevent cancer in high-risk patients with BRCA mutations. Surgery was followed by 6 sessions of chemotherapy, with a combination of a platinum-based Carboplatin drug plus Paclitaxel a taxane medication administered intravenously (IV) every 3 weeks. After 6 sessions, based on an assessment additional 3 sessions of chemotherapy were done, and she was declared cancer free! Combination of Carboplatin & Paclitaxel showed better response and toleration with no adverse reactions.

At the first diagnosis stage her CA 125 was at 200 U/ml units as against normal baseline is <35 U/mL, which lowered to 70 U/ml after 6 rounds of chemotherapy and 25 U/ml after 9 rounds of chemotherapy when declared cancer free. In September 2023 the couple went to USA to be with their daughters. However, in June 2024, just a month before their return she was breathless for few days and was taken for an emergency consultation, which led to identification of Pleural effusion, and tapping of 1.5 litre of fluid for immediate relief was done. On return in July 2024, they consulted their regular oncologist and found not only pleural effusion but also ascites. This time half a litre of pleural effusion and 2 litres of abdominal fluid (Ascites) were tapped and another course of 6 sessions of chemotherapy- PARP inhibitor - Olaparib, was given that she tolerated well. Her CA 125 was 800 U/mL, strongly correlating with a greater tumour burden and peritoneal spread.

After 3 more months in September 2024, she needed another abdominal paracentesis to withdraw 1 litre of fluid. Thereafter, she was comfortable just for a month until November 2024 with improved appetite and general weakness and was going for regular walks.

In December they went for a temples pilgrimage trip and during the trip one fine morning she had epigastric pain, nausea, vomiting, melena (black coloured stool) and fainted in toilet. After an emergency first aid and primary care she was rushed to Bengaluru and was admitted an intensive care

unit and managed with blood transfusion and IV fluids and recovered in 5 days. Detailed investigations led to diagnosis of Gastric metastasis High-Grade Serous Carcinoma grade iii with CA 125 in the range of 750U/ml. from ovarian cancer, which is unusual, 18 months after Ovarian cancer's initial diagnosis. In third week of February 2025, she collapsed due to low BP and fell. Another stint of hospitalization, ended in recouping of BP and lead anormal stable life in a week's time and was in and out of hospital. Even at home she was on Ryles tube feeding. She pulled on for another 6 months with periodical hospitalization, Targeted cancer therapy and ultimately died in mid-November 2025. As it was an advanced or unresectable metastatic gastric cancer, systemic treatment options of chemotherapy, targeted therapy, or immunotherapy were opted.

Before choosing targeted drugs, doctors tested tumour tissue for specific markers such as HER2, PD-L1 (CPS score), Claudin 18.2, or mismatch repair deficiency (dMMR/MSI). She was positive for HER 2. Trastuzumab was given as chemotherapy regimen. The initial Loading Dose was 250 g {@ 8 mg/kg body weight 35kg) administered as a 90-minute intravenous (IV) infusion in week 1. Then a maintenance dose of 200mg (6 mg/kg body weight) administered as an IV infusion (over 30 to 90 minutes) every 3 weeks. Treatment was continued for 3 months, by then she succumbed to the disease. Trastuzumab was combined with cisplatin plus capecitabine or 5-fluorouracil a platinum and fluoropyrimidine-based chemotherapy regimen.

Immune checkpoint inhibitors -Pembrolizumab, was integrated with chemotherapy as the tumour showed high PD-L1 expression (CPS ≥ 18).

In her last 3 months of 3 episodes of hospitalization multidisciplinary management team including a medical oncologist and surgical team evaluated and localized interventions were considered beneficial. Palliative and supportive care-managing nausea, pain, maintaining nutrition *via* enteral support were central to preserving quality of life in the last 3 months.

This was a typical case of ovarian cancer with recurrences especially when diagnosed late.

DISCUSSIONS

Recurrent cancer is phenomenon that happens when microscopic cancer cells remain in the body after initial treatment and grow back months or years later, either in local, regional, or metastatic in a distant part of the body. The most common cancers in women with notable recurrence risks include ovarian cancer, breast cancer, uterine (Endometrial) or cervical cancer in that order of chances of recurrence.

Ovarian Cancer

Recurrence rates are high- approximately 70% of patients experience a recurrence. Stage at initial diagnosis strongly dictates risk- Stage I (~10%), Stage II (~30%), Stage III (70%–90%), and Stage IV (90%–95%). Most commonly it recurs within the abdominal cavity. While recurrent ovarian cancer is rarely completely curable, it is often treated and managed long-term as a chronic condition using repeat platinum-based chemotherapy or targeted therapies [1,4].

The main connection between ovarian cancer and breast cancer is an inherited genetic link, primarily through mutations in the BRCA genes. People who have inherited BRCA gene faults have a significantly increased risk of developing both diseases. A personal or family history of one cancer often prompts genetic testing and screening for the other [6].

Epidemiology of Gastric Metastasis from Ovarian Cancers

Recurrent gastric metastasis from ovarian cancer also called "reverse Krukenberg" tumour—is exceptionally rare. Most available data come from isolated case reports and small literature reviews rather than large population studies. Ovarian cancer usually spreads along the peritoneum, pelvic organs, and lymph nodes; spread to the stomach is uncommon. Share of secondary stomach tumours due to Ovarian carcinoma accounts for only about 13 to 160 per 100,000 of all metastatic tumours found in the stomach [3].

Most secondary gastric tumours originate from breast cancer (around 3.6% incidence), melanoma, or lung cancer (around 1.3% incidence). Systematic reviews and literature summaries have documented only small numbers of cases worldwide. Even the most recent review was a decade ago for example, a 2016 review identified 18 cases, with sporadic case reports continuing to appear. This review reported a mean age at diagnosis of gastric metastasis from ovarian cancer was 59 years, with a mean interval of 32 months after the primary ovarian cancer diagnosis [3].

Lesions most commonly appear as submucosal lesions (61% of cases), which can mimic gastrointestinal stromal tumours (GISTs) on imaging or endoscopy. Roughly 61% of patients present with dyspeptic symptoms as was in our case. Some others may show bleeding, anaemia, vomiting, or perforation. Gastric involvement typically reflects advanced or recurrent disease and carries a poor prognosis.

Epithelial ovarian cancer, especially serous subtypes make up most reported cases as was our case. In about 70% to 80% of patients with advanced ovarian cancer experience disease relapse in about 14 to 84 months (mean timing of 32 months) after initial treatment,

Shared symptoms to look out for: The four main symptoms of ovarian cancer are: i) abdominal pain, ii) Persistent bloating, iii) Feeling full, iv) Needing to pee more frequently.

Gastrointestinal involvement in advanced ovarian cancer is usually superficial and is limited to the seromuscular layer, primarily of the small and large bowel and its mesentery. The mechanism of involvement has been attributed to lymphatic spread or direct tumour invasion [3,4}. The mechanisms underlying gastric metastasis have not been clearly elucidated. But owing to the rich vascularity of the stomach, the most common pathway that may be involved in the metastatic spread to the stomach is the hematogenous route [4]. Several cases of metastatic ovarian cancer to the stomach have been reported in literature. Zhou and Miao reviewed all recorded cases of gastric metastasis from ovarian carcinoma and found that among 1010 patients with malignant tumours, 17 (1.7%) had metastases to the stomach. Another series of autopsies discovered 92 cases of gastric metastases among a total of 7165 cases, which is a rate of 1.28% [3,4].

Most patients either present with synchronous metastases with advanced peritoneal disease as was in our case report, or other distant metastasis or as an isolated metachronous gastric mass. In our study, the patient presented with Pleural effusion first and then Ascites. In the follow-up imaging with a PET CT scan, as was done in our case [4].

Diagnosis

Diagnosing recurrent ovarian cancer involves a combination of clinical tracking, blood tests, and medical imaging. While common symptoms of recurrence include:

i) Persistent bloating or increased abdominal girth/ascites

ii) Abdominal or pelvic pain

iii) Early satiety or loss of appetite and

iv) Changes in bowel or bladder habits (constipation, urinary frequency/urgency)

Physical and pelvic examination: Routine surveillance checks for abdominal distension, ascites, lymph node swelling, chest/pulmonary or Pleural effusion findings, and /or pelvic/abdominal masses [4].

Key diagnostic tools used include:

Many cases are detected during follow-up via rising CA-125 levels or imaging (such as CT or 18F-FDG PET/CT) without symptoms, while symptomatic patients may report epigastric pain, nausea, vomiting, anaemia, as was in our case. Submucosal lesions can closely mimic gastrointestinal stromal tumours (GIST) on imaging and endoscopy, making biopsy and immunohistochemistry (such as WT1, CK7, and CK20) essential for confirmation.

1) CA-125 Blood Test: Measures the cancer antigen 125 level in the blood. A rising trend or doubling of CA-125 levels—even if values remain within the normal range—often signals a recurrence before symptoms appear.

2. Imaging Studies: a) CT scans: The primary imaging tool used to detect changes in tumour size or the emergence of new tumours in the abdomen or pelvis b) MRI Scans: Used in specific cases for detailed pelvic evaluation iii) PET Scans: Identifies increased metabolic activity associated with active tumour growth, rarely used due to potential confusion with inflammation.

3 Biopsy or Paracentesis: A directed biopsy, fine-needle aspiration, or fluid sampling *via* paracentesis may be performed to confirm recurrence if imaging findings are ambiguous.

Treatment of Gastric Secondaries of Recurred Ovarian Cancers

Standard chemotherapy for recurrent ovarian cancer in India depends primarily on the platinum-free interval (PFI)—the time elapsed between the completion of the last platinum-based therapy and the recurrence [9-13].

1. **Platinum-sensitive recurrence (PFI > 6 Months):** If the cancer returns more than 6 months after completing initial platinum-based treatment, the tumour is considered likely to respond to platinum drugs again. Combination chemotherapy regimens followed include Carboplatin + Paclitaxel, Carboplatin + Pegylated Liposomal Doxorubicin (PLD), Carboplatin + Gemcitabine.
2. **Secondary surgical debulking**—formally called secondary cytoreductive surgery—plays a crucial, life-extending role in carefully selected patients with recurrent epithelial ovarian cancer.

Complete Resection (R0): The primary goal is achieving complete gross resection (leaving zero visible residual tumour dramatically improves overall survival, whereas leaving any residual disease can offer little to no benefit. Sometimes relieving bulk that causes bowel obstruction, ascites, or pressure on nearby organs may be helpful [6].

CONCLUSION

The clinical presentation of metastatic tumours in the stomach is often indistinguishable from that of primary gastric cancer. Endoscopic, radiological, and histological evaluations are essential to distinguish between primary gastric cancer and metastatic tumours to the stomach. Besides histological morphological features, immunohistochemistry (IHC) evaluation plays an important role in establishing diagnosis.

Our case, presented as a recurrence of ovarian cancer primarily treated and declared cured with GI symptoms of loss of appetite, tummy discomfort, vomiting. The biopsy of gastric growth showed a High-Grade Serous Carcinoma grade iii with CA 125 in the range of 750U/ml. IHC positive for CK7, PAX8, and P53 and negative for CK20, CDX2, and WT1.

As the presence of synchronous gastric metastasis is usually associated with advanced disease, the overall survival outcome is poor, as was in our case which pulled on for about 4 months after gastric metastasis diagnosis. The treatment for such metastatic tumours in the stomach usually consists of systemic therapy rather than surgery as was opted in our case too! However, in patients with a solitary metachronous gastric metastasis, surgical resection or wherever possible endoscopic resection of metastatic gastric tumours may be advised for bleeding or disease control. In the present study, no surgical resection was done.

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