

Low-Grade Serous Ovarian Carcinoma Presenting as a Pelvic Abscess With Transmural Caecal Involvement in a Young Woman: A Case Report

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Abstract

Low-grade serous ovarian carcinoma (LGSOC) is an uncommon epithelial ovarian malignancy with distinct clinicopathological behaviour compared with high-grade serous carcinoma. It often affects younger women, follows a relatively indolent course, and may present at an advanced stage. Presentation with a pelvic abscess and bowel involvement is unusual and may obscure the underlying diagnosis. We report the case of a 28-year-old woman who presented to the Department of Gynecologic Oncology at a tertiary healthcare centre with a 10-day history of progressively worsening lower abdominal pain, accompanied by fever and vomiting for 3 days. USG and MRI demonstrated a large, complex right ovarian mass with solid-cystic, hypervascular components, diffusion restriction, and suspicious enhancement characteristics, categorised as MR-O-RADS Category 5. Exploratory laparotomy revealed a complex pelvic mass with cavitation; pus was draining from the cavity, and the mass was protruding into the caecum. A surgeon was called, and the operation was performed collaboratively by the Gynecologic Oncology and surgical teams. The patient underwent resection of the ovarian mass, drainage of the pelvic abscess, right hemicolectomy, and omental resection. Frozen-section examination of the ovarian tissue revealed a malignant tumour composed of cuboidal cells arranged in papillary patterns, with oval nucleoli with polymorphism, and sporadic areas of necrosis and mitosis. Similar findings in the caecal growth suggested the presence of ovarian malignancy within the caecum. Histopathology confirmed low-grade serous carcinoma of ovarian origin with involvement of the right ovary and fallopian tube. The right hemicolectomy specimen showed metastatic serous carcinoma with transmural caecal infiltration. Immunohistochemistry (IHC) demonstrated CK7 positivity, oestrogen receptor positivity, focal weak WT1 positivity, CDX2 negativity, and weak or negative CK20 expression, supporting Müllerian origin rather than primary colorectal carcinoma. This case highlights that ovarian malignancy may mimic a tubo-ovarian abscess or pelvic sepsis, even in young patients, and that complex adnexal masses with suspicious imaging features require oncological vigilance and multidisciplinary management.

Categories: General Surgery

Keywords: bowel involvement, caecal metastasis, low-grade serous ovarian carcinoma, mr o-rads, müllerian carcinoma, ovarian cancer, pelvic abscess, right hemicolectomy

Introduction

Ovarian cancer is the eighteenth most common cancer worldwide and the seventh most common cancer among women, with an estimated 313,959 new cases and 207,252 deaths reported globally in 2020 [1]. Because early-stage disease is often asymptomatic or clinically nonspecific, many patients are diagnosed at an advanced stage, contributing to poor overall survival. Ovarian carcinoma commonly spreads within the peritoneal cavity, involving the contralateral ovary, pelvis, omentum, and peritoneal surfaces. Bowel involvement is recognized in advanced ovarian carcinoma and commonly occurs through peritoneal dissemination or direct extension, with the rectosigmoid region frequently affected because of its anatomical proximity to the pelvic organs. In contrast, right-sided colonic involvement, particularly involving the caecum, is less frequently described in the literature and may mimic primary colorectal malignancy. Ovarian carcinoma can also present with clinical and radiological features resembling a pelvic abscess. However, the coexistence of low-grade serous ovarian carcinoma (LGSOC), pelvic abscess formation, and transmural caecal involvement represents an unusual clinical presentation [1,2].

LGSOC is an uncommon but biologically distinct subtype of serous ovarian carcinoma, with its molecular profile, clinical behaviour, and treatment response differing from those of high-grade serous carcinoma. It more often affects younger women, follows a relatively indolent course, and shows relative chemoresistance, although it may still present at an advanced stage [3].

Ovarian carcinoma with caecal involvement often presents with nonspecific symptoms such as abdominal pain, distension, altered bowel habits, anorexia, weight loss, or features of an acute abdomen, obstruction, or perforation. Because these symptoms overlap with those of primary colorectal disease or infective pelvic pathology, diagnosis may be delayed. CT and MRI are useful for assessing disease extent, but confirmation usually depends on histopathology and immunohistochemistry (IHC) [1].

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Management requires careful surgical planning. Cytoreductive surgery remains the main treatment principle, aiming for no gross residual disease. When the caecum is involved, en bloc bowel resection, such as right hemicolectomy, may be required along with standard gynaecologic oncologic procedures. Such complex cases require a multidisciplinary approach involving gynaecologic oncologists, colorectal surgeons, radiologists, anaesthesiologists, and pathologists [4,5].

This case is noteworthy because the patient was young, exhibited inflammatory symptoms, had imaging findings strongly suspicious for ovarian malignancy, and was ultimately found to have LGSOC with histologically confirmed transmural caecal involvement. The case underscores the necessity of evaluating for malignancy in young patients with complex adnexal masses and bowel involvement, as well as the diagnostic overlap between ovarian malignancy, pelvic abscess, and gastrointestinal pathology.

Case Presentation

A 28-year-old Bangladeshi woman presented to the Department of Gynecologic Oncology at Square Hospital Limited, Dhaka, Bangladesh, with lower abdominal pain for 10 days, which had been progressively worsening, accompanied by non-projectile vomiting and high-grade intermittent fever for 3 days. On examination, her temperature was 101°F (38.3°C), pulse was 110 beats/min, and blood pressure was 100/60 mmHg. There was no clinical evidence of anaemia or jaundice. Severe tenderness was present in the lower abdomen, particularly on the right side; however, the abdomen was soft and non-distended. Bowel sounds were present. Her obstetric history included a ruptured right tubal ectopic pregnancy managed by laparotomy approximately five years earlier and an abortion approximately one year earlier that was managed conservatively. She had also undergone laparoscopic cholecystectomy and appendectomy with excision of a right ovarian cyst approximately four years earlier. The histopathological report from the previous ovarian cyst excision was unavailable, and the patient could not confirm whether the right ovary had been preserved during that procedure. Laboratory investigations showed neutrophilic leukocytosis, an elevated ESR of 69 mm in the first hour, and a markedly elevated CRP of 144 mg/L. CA-125 was elevated at 77.68 U/mL, whereas β-hCG and CEA were within the reported reference ranges. The available laboratory findings are summarized in Table 1.

Parameter	Patient value	Reference range
ESR	69 mm in the first hour ↑	0–20 mm/hour
WBC count	22.3 × 10 ⁹ /L ↑	4–11 × 10 ⁹ /L
C-reactive protein	144 mg/L ↑	<5 mg/L
CA-125	77.68 U/mL ↑	<35 U/mL
β-hCG	<2.39 mIU/mL	<5 mIU/mL
CEA	2.58 ng/mL	<5 ng/mL

TABLE 1: Laboratory investigations at presentation.

CA-125: Cancer antigen 125; β-hCG: beta-human chorionic gonadotropin; CEA: Carcinoembryonic antigen.

Her per vaginal and per rectal examinations were unremarkable.

Transvaginal sonography showed a fairly large, right adnexal mass with multiple thick and thin septations, diffuse internal echoes, and an associated large solid component with increased vascularity (volume: 502 cc), suggestive of a complex ovarian mass (Figure 1).

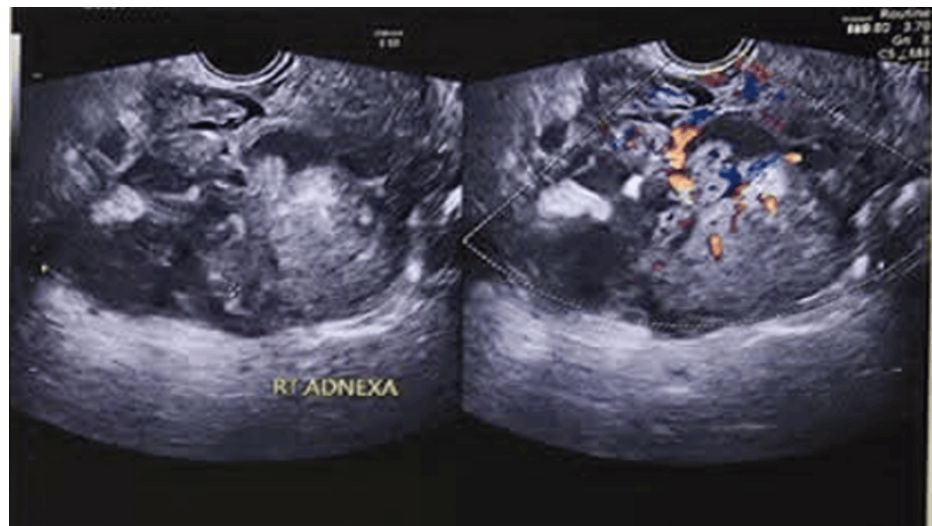


FIGURE 1: Transvaginal USG of the pelvis showing a large, complex right adnexal/ovarian mass with thick and thin septations, internal echoes, and a prominent hypervascular solid component.

MRI of the abdomen and pelvis with contrast showed a large, complex right ovarian mass measuring approximately $16.3 \times 6.3 \times 7.6$ cm, with both solid and cystic components, an irregular solid component, diffusion restriction, and a type 3 enhancement curve. The mass was closely related to the caecum, with a follicular “string of pearls” pattern (marked by a red arrow) identified within the lesion (Figure 2). The solid and cystic morphology, irregular solid component, ill-defined margins, and subtle adjacent omental stranding raised high suspicion for malignancy (marked by a red arrow) (Figure 3). The lesion was categorized as O-RADS MRI 5, indicating a high risk of malignancy. O-RADS MRI is designed to standardise risk stratification of adnexal lesions, and MRI can improve lesion characterisation by identifying enhancing solid tissue, a key feature in malignancy assessment [6]. A 1 cm indeterminate liver lesion was also reported.

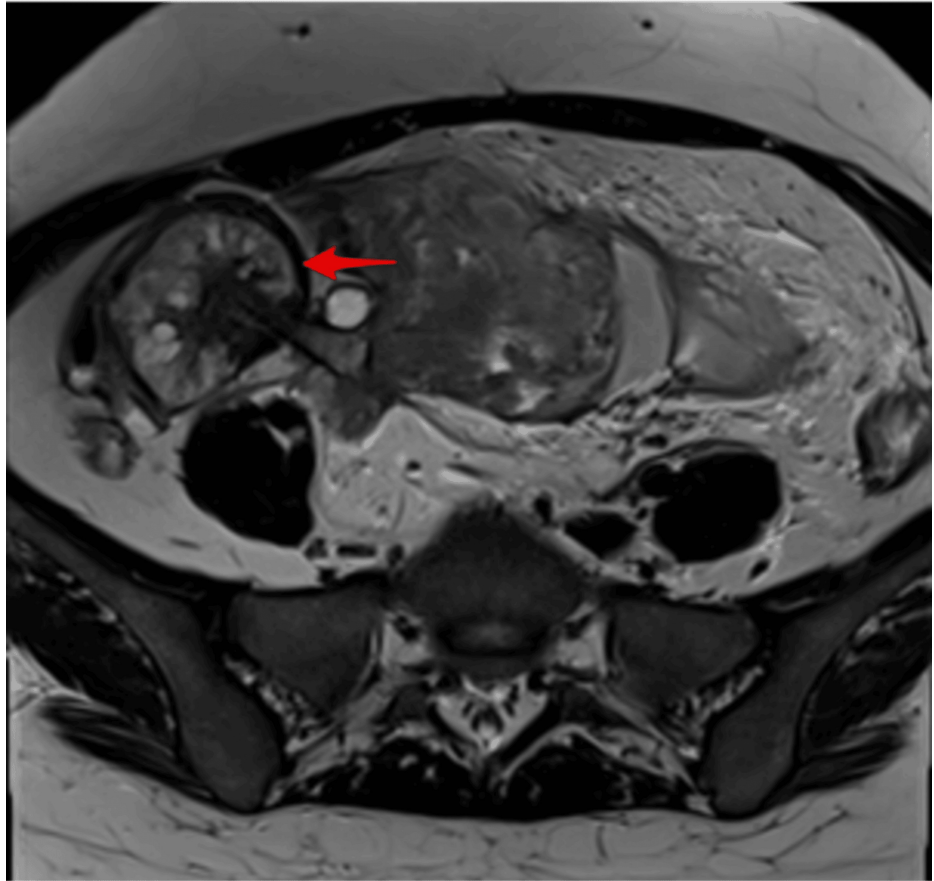


FIGURE 2: Contrast-enhanced MRI of the abdomen and pelvis (axial view) demonstrating a large, complex right ovarian mass measuring approximately $16.3 \times 6.3 \times 7.6$ cm, with solid and cystic components, an irregular solid component, and a follicular “string of pearls” appearance (marked by a red arrow).

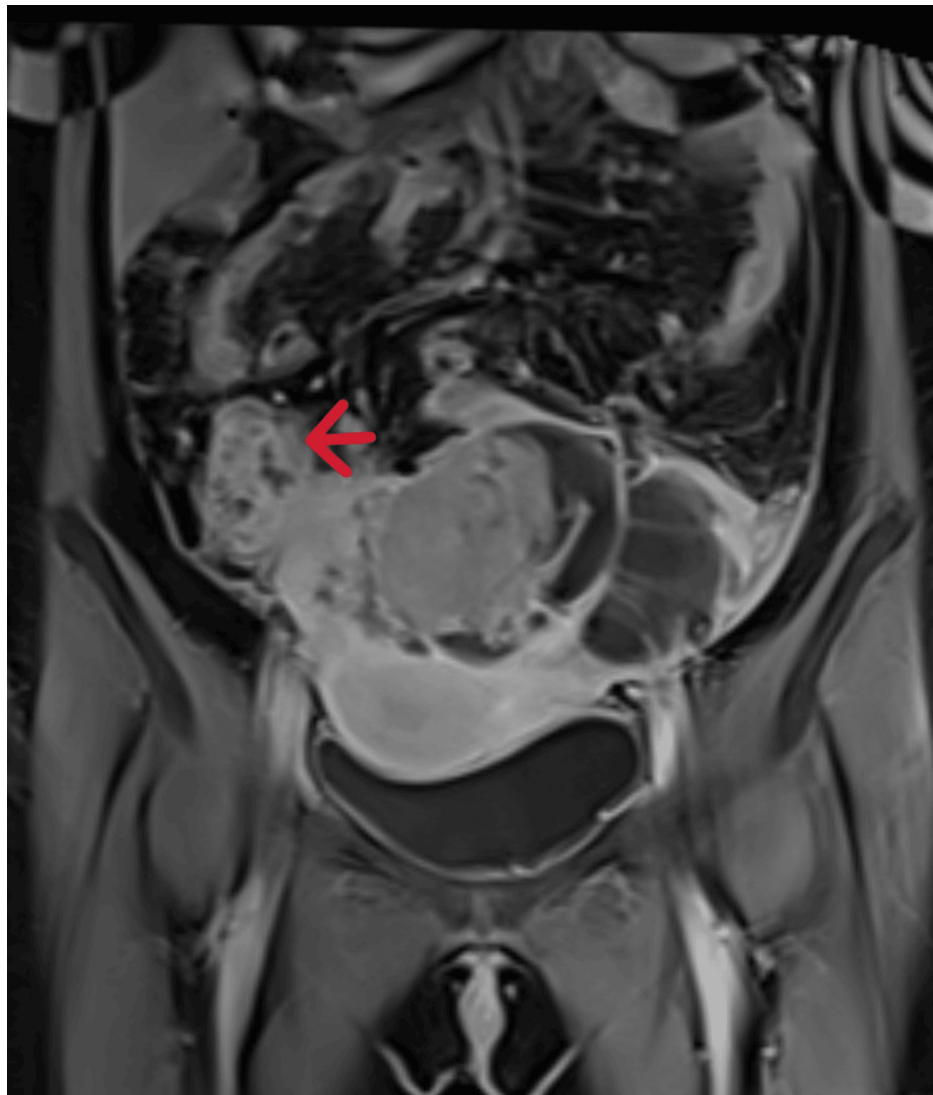


FIGURE 3: Contrast-enhanced MRI of the abdomen and pelvis (coronal view) demonstrating a large right ovarian mass with solid-cystic morphology (red arrow), an irregular solid component, restricted diffusion in the solid component, ill-defined margins, and omental stranding.

The main preoperative differential diagnoses included ovarian carcinoma, tubo-ovarian abscess, borderline ovarian tumour, endometrioma with secondary infection, inflammatory bowel disease with secondary adnexal involvement, and primary colorectal malignancy with pelvic extension.

The diagnostic challenge was that the imaging findings strongly suggested malignancy, while the inflammatory clinical picture raised the possibility of a tubo-ovarian abscess, another infective pelvic process, or colonic pathology.

Following preoperative counselling and optimisation, a lower midline laparotomy was performed. A complex pelvic mass with cavitation and purulent material was identified, with the mass protruding into the caecum. A general surgical consultant was involved, and the procedure was performed collaboratively by the gynecologic oncology and surgical teams. Right salpingo-oophorectomy and right hemicolectomy were performed en bloc, followed by ileotransverse colonic anastomosis. The pelvic abscess was drained, and the omentum was resected. The uterus and left adnexa were preserved. No ascites or other macroscopic peritoneal deposits were identified, and no macroscopic residual tumour remained at the end of surgery. Peritoneal washings and cytological examination were not performed. Two abdominal drains were placed. Frozen-section examination of specimens from the right ovary and caecal lesion confirmed malignancy. Macroscopic histopathological examination of the tissue demonstrated a solid ovarian mass with purulent material, and the right hemicolectomy specimen showed a pedunculated caecal growth (Figure 4).



FIGURE 4: Gross specimen showing the resected right hemicolectomy specimen and the right ovarian mass, with the caecal lesion associated with the ovarian tumour.

The specimens were sent for histopathological examination and IHC.

Histopathological examination of the ovarian specimen demonstrated low-grade serous carcinoma composed of cuboidal to low-columnar cells arranged in papillary patterns and solid sheets. The tumour cells showed round to oval nuclei, moderate nuclear pleomorphism, prominent nucleoli, and eosinophilic cytoplasm, with occasional mitotic figures and areas of necrosis. Ovarian surface involvement and fallopian tube involvement were identified. The right hemicolectomy specimen demonstrated a caecal tumour with morphological features similar to those of the ovarian tumour. The lesion was reported as metastatic low-grade serous carcinoma with transmural intestinal involvement. Lymphovascular and perineural invasion were not identified. The proximal, distal, and radial resection margins were free of tumour. Twenty-nine regional lymph nodes were examined, all of which were negative for metastatic carcinoma. The resected omentum was free of tumour and showed haemorrhage with dense acute and chronic inflammatory infiltration.

IHC demonstrated strong CK7 positivity, oestrogen receptor positivity, focal weak WT1 positivity, CDX2 negativity, and weak/negative CK20 expression, supporting an ovarian/Müllerian primary rather than a primary colorectal carcinoma. The complete IHC profile is summarized in Table 2, and the slides, staining, and magnification are demonstrated and illustrated in Figure 5.

Marker	Result	Interpretation
CK7	Positive	Supports Müllerian/ovarian epithelial origin
ER	Positive	Supports serous Müllerian carcinoma
WT1	Focally weak positive	Compatible with serous ovarian origin
CDX2	Negative	Argues against primary colorectal adenocarcinoma
CK20	Weak/negative	Does not support a typical colorectal primary

TABLE 2: Immunohistochemical profile supporting an ovarian/Müllerian origin rather than a primary colorectal adenocarcinoma.

CK7: Cytokeratin 7; ER: Oestrogen receptor; WT1: Wilms tumour 1; CDX2: Caudal-type homeobox 2; CK20: Cytokeratin 20.

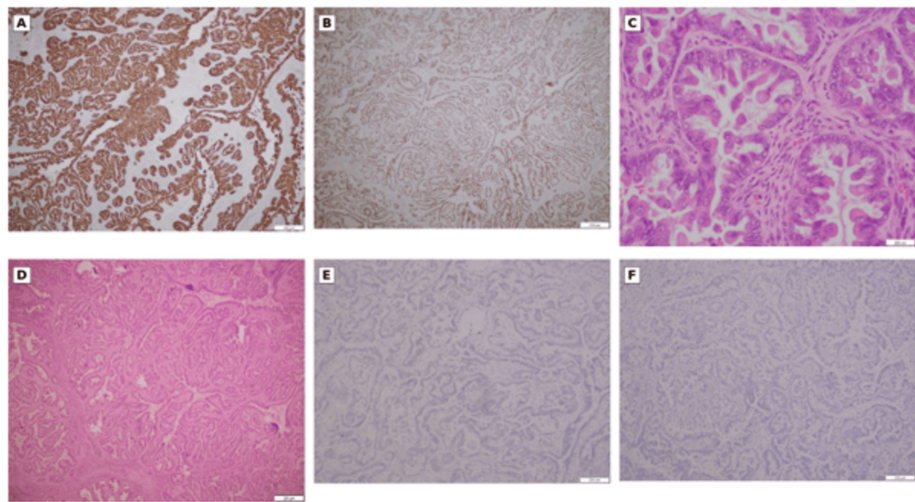


FIGURE 5: Histopathological and immunohistochemical findings of the ovarian carcinoma and caecal metastasis.

(A) CK7 immunohistochemistry showing strong positivity at 20× magnification; (B) Oestrogen receptor immunohistochemistry showing positivity at 20× magnification; (C) Low-grade serous carcinoma with surrounding desmoplasia and inflammation on H&E staining at 40× magnification; (D) Low-grade serous carcinoma on H&E staining at 20× magnification; (E) CK20 immunohistochemistry showing weak/negative staining at 20× magnification; and (F) CDX2 immunohistochemistry showing negative staining at 20× magnification.

The patient required a multidisciplinary gynecologic oncology review for final staging confirmation, postoperative treatment planning, surveillance strategy, and consideration of genetic counselling.

The final diagnosis was low-grade serous carcinoma of the right ovary with fallopian tube involvement and transmural caecal involvement. The pathological staging was pT3 pN0 pM1b. According to the AJCC 8th Edition TNM classification, the pT3 classification reflected tumour involving the ovary and fallopian tube with microscopically confirmed disease outside the pelvis, while pN0 reflected the absence of metastatic disease in the 29 examined regional lymph nodes. The pM1b classification reflected the documented transmural intestinal involvement. The reported pM1b classification corresponds to International Federation of Gynecology and Obstetrics (FIGO) stage IVB. Although the pelvic mass was observed to protrude into the caecum intraoperatively, the available documentation did not definitively establish the anatomical route of bowel involvement.

The postoperative course was uneventful. The patient was discharged on postoperative day 7 and referred to the oncology department for further management. Following surgery, the patient completed six cycles of chemotherapy with paclitaxel and carboplatin. There were no signs of recurrence at the six-month follow-up. She continues to attend follow-up assessments at three-month intervals and, according to the patient's report, is doing well.

Discussion

This case demonstrates an unusual presentation of LGSOC in a young woman, complicated by a pelvic abscess and transmural caecal metastasis. The distinctive feature of this case was the coexistence of imaging features strongly suspicious for malignancy with clinical and intraoperative findings of pelvic infection and abscess formation. Although the inflammatory presentation raised the possibility of a tubo-ovarian abscess or another infective pelvic process, the imaging findings remained highly suspicious for malignancy.

The first important lesson is that ovarian malignancy can mimic a pelvic abscess. Necrosis, purulent discharge, dense adhesions, and inflammatory collections may lead clinicians towards a diagnosis of tubo-ovarian abscess, particularly in young women. However, suspicious imaging features such as a large, complex adnexal mass, solid vascular components, diffusion restriction, and malignant enhancement kinetics should prevent premature closure on an infective diagnosis. Previous reports have described ovarian malignancies perforating into the bowel or mimicking colorectal pathology, reinforcing the diagnostic overlap between gynaecological malignancy, pelvic sepsis, and GI disease [1,4,5,7,8].

Second, young age should not be considered sufficient to exclude ovarian malignancy. Due to its relative rarity, low-grade serous ovarian cancer may be underdiagnosed and more frequently affects younger individuals than high-grade serous carcinoma [3]. Although the patient was only 28 years old, the imaging findings raised serious concern. Age may modify the pretest probability of malignancy, but it should not

override high-risk morphological findings.

Third, bowel involvement in ovarian carcinoma demands adaptable intraoperative decision-making. Although the rectosigmoid colon is the most commonly affected bowel segment, other parts of the GI tract may also be involved. O'Hanlan KA et al. reported that ovarian carcinoma can metastasize to the GI tract and may invade beyond the serosal surface into the bowel wall [5]. In our case, histology confirmed transmural caecal invasion, supporting the intraoperative decision to proceed with right hemicolectomy.

Fourth, IHC was central to determining tumour origin. A CK7-positive, ER-positive, and CDX2-negative profile favoured ovarian/Müllerian carcinoma rather than primary colorectal adenocarcinoma. This distinction is clinically decisive because primary colorectal cancer and metastatic ovarian carcinoma have different staging systems, treatment pathways, and surveillance strategies. Reports of ovarian carcinoma mimicking primary colorectal cancer show that morphology alone may be insufficient and that clinicopathological correlation is essential [9,10,11].

Primary management of LGSOC generally prioritises cytoreductive surgery, aiming to achieve complete gross resection when feasible, followed by platinum-based chemotherapy in appropriate patients. Compared with high-grade serous carcinoma, LGSOC more commonly affects younger women, follows a relatively indolent clinical course, and demonstrates reduced sensitivity to conventional chemotherapy. Neoadjuvant chemotherapy is not the preferred approach and may be considered selectively when primary surgery is not feasible or the anticipated surgical risk is unacceptable. In recurrent disease, treatment options include secondary cytoreductive surgery in carefully selected patients, endocrine therapy, systemic treatment, and targeted therapies. The randomised GOG 281/LOGS trial demonstrated improved progression-free survival with the MEK inhibitor trametinib compared with standard-of-care treatment in patients with recurrent LGSOC [3,12,13,14].

Finally, this case reinforces the importance of multidisciplinary management. Such patients require collaboration among general surgery, gynaecological oncology, radiology, pathology, and medical oncology. In unexpected pelvic malignancy with bowel involvement, the operative priorities are safe source control, appropriate oncological resection where feasible, avoidance of tumour spillage as much as possible, and early referral to a specialist gynaecologic oncology multidisciplinary team.

Conclusions

LGSOC may rarely present with a pelvic abscess and transmural caecal involvement, creating diagnostic overlap with pelvic infection and GI pathology. In this patient, the coexistence of marked inflammatory findings and a complex adnexal mass with suspicious imaging characteristics of malignancy required integrated multidisciplinary assessment. Right salpingo-oophorectomy and right hemicolectomy were performed to resect the ovarian tumour and involved caecal segment, together with drainage of the pelvic abscess and omental resection. Histopathological examination confirmed low-grade serous carcinoma involving the right ovary and fallopian tube, with transmural caecal involvement, while immunohistochemistry supported a Müllerian/ovarian origin when interpreted alongside the morphology and clinical findings. The patient subsequently completed six cycles of paclitaxel and carboplatin and remained clinically well at the six-month follow-up. This case emphasises the importance of integrating clinical, radiological, operative, pathological, and immunohistochemical findings and of multidisciplinary collaboration when ovarian malignancy presents with pelvic infection and bowel involvement.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Sadia Islam, Israt Faisal, Nazia Farid

Acquisition, analysis, or interpretation of data: Sadia Islam, Israt Faisal, Nazia Farid

Drafting of the manuscript: Sadia Islam, Israt Faisal, Nazia Farid

Critical review of the manuscript for important intellectual content: Sadia Islam, Israt Faisal, Nazia Farid

Supervision: Sadia Islam, Israt Faisal, Nazia Farid

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all

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References

1. Glombicki SE, Montelongo D, Dushianthan S, Perez CJ, Cervantes M, Glombicki AP: Metastatic ovarian mucinous carcinoma presenting as ileocecal adenocarcinoma: a case report. *Cureus*. 2022, 14:e24589. [10.7759/cureus.24589](https://doi.org/10.7759/cureus.24589)
2. Fuller LD, Dunn A, Huber AR, Vyas M, Gonzalez RS: Clinicopathologic features of gynecologic malignancies presenting clinically as colonic malignancies. *Am J Clin Pathol*. 2022, 157:82-89. [10.1093/ajcp/aqab097](https://doi.org/10.1093/ajcp/aqab097)
3. Grisham RN, Slomovitz BM, Andrews N, et al.: Low-grade serous ovarian cancer: expert consensus report on the state of the science. *Int J Gynecol Cancer*. 2023, 33:1331-1344. [10.1136/ijgc-2023-004610](https://doi.org/10.1136/ijgc-2023-004610)
4. Bats AS, Rockall AG, Singh N, Reznick RH, Jeyarajah A: Perforation of a malignant ovarian tumor into the recto-sigmoid colon. *Acta Obstet Gynecol Scand*. 2010, 89:1362-1363. [10.3109/00016349.2010.501857](https://doi.org/10.3109/00016349.2010.501857)
5. O'Hanlan KA, Kargas S, Schreiber M, Burrs D, Mallipeddi P, Longacre T, Hendrickson M: Ovarian carcinoma metastases to gastrointestinal tract appear to spread like colon carcinoma: implications for surgical resection. *Gynecol Oncol*. 1995, 59:200-206. [10.1006/gyno.1995.0008](https://doi.org/10.1006/gyno.1995.0008)
6. Sadowski EA, Thomassin-Naggara I, Rockall A, et al.: O-RADS MRI risk stratification system: guide for assessing adnexal lesions from the ACR O-RADS Committee. *Radiology*. 2022, 303:35-47. [10.1148/radiol.204371](https://doi.org/10.1148/radiol.204371)
7. Mimura K, Okada A, Haraguchi N, Sawada K, Tomimatsu T, Kimura T: Pure primary ovarian squamous cell carcinoma perforating the rectum. *Case Rep Obstet Gynecol*. 2017, 2017:9793086. [10.1155/2017/9793086](https://doi.org/10.1155/2017/9793086)
8. Jaouani L, Zaimi A, Al Jarroudi O, Haloui A, Rezzoug F, Brahmi SA, Afqir S: Unusual synchronous colonic metastasis of ovarian cancer. *Cureus*. 2023, 15:e39952. [10.7759/cureus.39952](https://doi.org/10.7759/cureus.39952)
9. Chou SH, Pu TW, Hao Y, et al.: Metastatic ovarian cancer mimicking a primary rectal cancer: a case report . *Clin Case Rep*. 2022, 3:1-5. [10.5281/zenodo.14911300](https://doi.org/10.5281/zenodo.14911300)
10. Abe K, Anzai H, Eguchi S, et al.: Metastasis of ovarian cancer to the descending colon . *Case Rep Gastroenterol*. 2023, 17:129-136. [10.1159/000529299](https://doi.org/10.1159/000529299)
11. Romero I, Sun CC, Wong KK, Bast RC Jr, Gershenson DM: Low-grade serous carcinoma: new concepts and emerging therapies. *Gynecol Oncol*. 2013, 130:660-666. [10.1016/j.ygyno.2013.05.021](https://doi.org/10.1016/j.ygyno.2013.05.021)
12. Kir G, Gurbuz A, Karateke A, Kir M: Clinicopathologic and immunohistochemical profile of ovarian metastases from colorectal carcinoma. *World J Gastrointest Surg*. 2010, 2:109-116. [10.4240/wjgs.v2.i4.109](https://doi.org/10.4240/wjgs.v2.i4.109)
13. González-Martín A, Harter P, Leary A, et al.: Newly diagnosed and relapsed epithelial ovarian cancer: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up. *Ann Oncol*. 2023, 34:833-848. [10.1016/j.annonc.2023.07.011](https://doi.org/10.1016/j.annonc.2023.07.011)
14. Gershenson DM, Miller A, Brady WE, et al.: Trametinib versus standard of care in patients with recurrent low-grade serous ovarian cancer (GOG 281/LOGS): an international, randomised, open-label, multicentre, phase 2/3 trial. *Lancet*. 2022, 399:541-553. [10.1016/S0140-6736\(21\)02175-9](https://doi.org/10.1016/S0140-6736(21)02175-9)