

Primary High-grade Serous Carcinoma of Fallopian Tube, an Incidental Intraoperative Finding: A Case Report

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Case Report

Keywords: Cystadenocarcinoma, Serous, Fallopian Tubes, case report

Posted Date: January 11th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-141426/v1>

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Abstract

Background: Primary carcinoma of fallopian tube is a rare but deadly gynecologic cancer, In addition, its preoperative diagnosis is strict due to the lack of specific symptoms and signs and in most patients, it is an intraoperative finding.

Case presentation: A 55-year-old patient, G3Ab1P2 referred to urogynecology clinic of our hospital with chief complaint about heavy, prolonged menstrual bleeding and a permanently abnormal yellow discharge that could not be distinguished from its urinary or vaginal source.

After complete diagnostic work-up, the patient became a candidate for hysterectomy due to the drug (Megestrol Acetate) -resistant abnormal vaginal bleeding, her abnormal vaginal bleeding, positive family history of malignancy, and abnormal vaginal discharge.

Laparotomy revealed unusual left fallopian tube feature (Large, bulky, and vegetative feature), suspected to malignancy. Intraoperative frozen-section analysis of the left fallopian tube and ovary specimens detected the mass as a high-grade serous carcinoma of fallopian tube. Total abdominal hysterectomy, bilateral salpingo-oophorectomy, and partial omentectomy were performed. The definitive histopathological diagnosis was high-grade serous carcinoma of the left fallopian tube stage 2b with omental involvement without any evidence of lymph-vascular invasion.

Conclusions: High-grade serous carcinoma of fallopian tube is likely to present nonspecific symptoms, which may cause considerable delay in diagnosis and treatment. This consequently, affects the prognosis and survival of the patient.

Background

Primary carcinoma of fallopian tube is a very unusual yet lethal gynecologic malignancy that accounts for less than 1% of all malignancies affecting female reproductive system [1]. Its incidence dramatically increases in middle-aged women, reaching its peak within the age range of 60–64 [2].

Preoperative diagnosis is difficult due to the lack of specific symptoms and signs and in most cases, it is an intraoperative finding or a histopathological diagnosis [3].

Herein, we reported a case of primary high-grade serous carcinoma of fallopian tube with different clinical presentations. Her diagnosis was made incidentally during a total hysterectomy because of drug-resistant endometrium hyperplasia, persistent spotting, and abnormal vaginal discharge.

Case Presentation

A 55-year-old woman, G3Ab1P2 with a past medical history of treated hypertension and hypothyroidism referred to our urogynecology clinic with chief complaint about urinary incontinence as well as two-year

prolonged and heavy menstrual bleeding. She reported being sexually active and a positive family history of uterine malignancy in her daughter and her sister that underwent TAH.

At that time, the medical history revealed mixed urinary incontinence accompanied by urge-predominant symptoms. In addition, the physical examination revealed stage 1 of pelvic organ prolapse in all three compartments and a positive cough stress test. Furthermore, the result of her transvaginal ultrasound (TVS) and endometrial biopsy were normal.

Papanicolaou smear test was also done and the result was reported as “negative for intraepithelial lesion or malignancy”. To relieve her urinary symptoms, an anticholinergic drug was prescribed and she was asked to do follow-up check-ups in a month so that we could evaluate her menstrual bleeding pattern after the endometrial biopsy and track her response to anticholinergic drug.

Unfortunately, the patient did not come in for the follow-up visit. One year later, she referred to our hospital with chief complaint about heavy, prolonged menstrual bleeding and a permanently abnormal yellow discharge that could not be distinguished from its urinary or vaginal source. On examination, no pelvic mass was palpable. Mixed vaginal infection and uterine prolapse stage 1 were diagnosed.

The patient underwent a transvaginal ultrasound which indicated a 21*18 mm endometrioma cyst in the right ovary and a 32*18 mm tubular hypoechoic structure with hypervascular thick wall in the left adnexa separated from the left ovary suspected for the left fallopian tube pathology. For more assessment, magnetic resonance imaging (MRI) was requested.

MRI enhanced images of the pelvic cavity confirmed the small endometrioma in the right ovary and demonstrated a tubular left adnexa structure measuring 36*12 mm with thick rim wall enhancement without internal solid component, more suggestive of hematosalpinx, hydrosalpinx, or associated inflammatory process without any evidence of malignancy (Fig. 1A, C).

Focal hyperplasia without atypia with disordered proliferative endometrium was detected on hysteroscopy-D & C. Her abnormal lab test was hemoglobin 10.9 g/dL and ESR = 97.

Finally, the patient became a candidate for TAH – BSO due to the drug (Megestrol Acetate) -resistant abnormal vaginal bleeding, her abnormal vaginal bleeding, positive family history of malignancy, and abnormal vaginal discharge.

Before surgery, an urodynamic study was also done because of urgency-predominant mixed urinary incontinence and the patient’s inability to differentiate vaginal discharges from the leak of urine. The urodynamic study revealed normal findings.

Laparotomy revealed unusual left fallopian tube feature (Large, bulky, and vegetative feature), suspected to malignancy. Intraoperative frozen-section analysis of the left fallopian tube and ovary specimens detected the mass as a high-grade serous carcinoma of fallopian tube. Total abdominal hysterectomy, bilateral salpingo-oophorectomy, and partial omentectomy were performed. The definitive

histopathological diagnosis was high-grade serous carcinoma of the left fallopian tube stage 2b (Fig. 2A, C).with omental involvement without any evidence of lymph-vascular invasion.

Based on post-surgery MRI findings which were normal, she became a candidate for six courses of adjuvant chemotherapy with carboplatin and paclitaxel followed by active surveillance. At the time of this report (one month after her surgery), she was receiving one course of chemotherapy without any major adverse effect.

Discussion And Conclusions

This study presented an uncommon case of high-grade serous carcinoma of fallopian tube stage 2b. The patient initially complained about abnormal vaginal bleeding and abnormal vaginal discharge which 55-year-old patient could not distinguish from leak of urine.

Little is known about the carcinoma of fallopian tube etiology. Nulliparity, a past history of pelvic inflammatory disease accounts for some probable risk factors which include oral contraceptive use (OCP), parity, infertility, and tubal ligation (TL) [4, 5]. The case did not have any history of using OCP, infertility, and TL though she had a recent history of recurrent and drug-resistant vaginal infections as well as chronic salpingitis in her pathology report.

Based on the present case study, we found that abnormal vaginal bleeding and vaginal discharge are the most common presenting symptoms in carcinoma of fallopian tube. Although this patient's physical examination did not reveal a palpable pelvic mass, in some patients, this sign is detected [6].

Primary carcinoma of fallopian tube is hardly diagnosed before surgery due to the lack of specific symptoms and signs. For example, although abnormal vaginal bleeding or discharge, palpable pelvic mass, and abdominal pain make a diagnostic triad for carcinoma of the fallopian tube, this triad could be only observed in 5–20% of the cases [7]. A noticeable point in our patient's symptoms was her inability to differentiate urinary incontinence from vaginal discharge that led to her late diagnosis.

Some studies in this area have recently suggested that TVS and serum CA 125 assay can be useful for the preoperative detection of this malignancy [8–10]. However, imaging without identifying specific features of carcinoma of fallopian tube, could not be a perfect guide for preoperative diagnosis. Similarly, in our patient, TVS and even MRI did not lead to preoperative diagnosis.

CA 125 antigen is mostly expressed by carcinoma of fallopian tube, and high serum levels of this antigen have been found in patients with advanced or recurrent malignancy [11]. At the time of the surgery, the extra pelvic spread of carcinoma of fallopian tube was observed in 18 to 60% of the patients. In addition, bilateral tubal involvement has been detected in 10 – 27% of the cases [5].

The overall five-year survival of the patients with primary carcinoma of the fallopian tube ranges from 14 to 57%. Disease extension, stage of disease, residual disease and histological grade after initial surgery are the important prognostic variables to determine the patient's prognosis [5].

Further research studies are required to make timely diagnosis. The findings further recommended that immediate detection contributes to measuring inflammatory markers in the vagina from the fallopian tube, showing probable chronic inflammation that is a risk factor for serous carcinoma. Furthermore, serum CA 125 is a useful noninvasive marker for controlling carcinoma of fallopian tube [12].

Conclusions

The findings demonstrated that high-grade serous carcinoma of fallopian tube presents with nonspecific symptoms, which may result in considerably late clinical diagnosis and treatment, consequently, adversely affects the prognosis and survival of the patient.

Abbreviations

Not applicable.

Declarations

Acknowledgements

Not applicable.

Authors' contributions

All authors substantially contributed to the manuscript. NSh and SS (Sara Saeedi) performed the surgery. SS (Soheila Sarmadi) performed the histological examination. BM took part in the diagnosis decision, and writing. EF and NSH were the major contributors in writing the manuscript. All authors read and approved the final manuscript.

Funding

No funding was received.

Availability of data and materials

The datasets applied in this case report are present from the corresponding author on rationale demand.

Ethics approval and consent participate

Not applicable.

Consent for publication

The study patient filled informed consent for the publication of her data anonymously.

Competing interests

The authors declare that they have no competing interests.

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References

1. Kuscu E, Oktem M, Haberal A, Erkanli S, Bilezikci B, Demirhan B. Management of advanced-stage primary carcinoma of the fallopian tube: case report and literature review. *Eur J Gynaecol Oncol*. 2003;24(6):557-60.
2. Al-Agha OM, Blake Gilks C. High-Grade Serous Carcinoma Involving Fallopian Tube, Ovary and Peritoneum. *Surg Pathol Clin*. 2011 Mar;4(1):375-96.
3. Morrison JC, Blanco LZ Jr, Vang R, Ronnett BM. Incidental serous tubal intraepithelial carcinoma and early invasive serous carcinoma in the nonprophylactic setting: analysis of a case series. *Am J Surg Pathol*. 2015 Apr;39(4):442-53.
4. Gadducci A, Madrigali A, Ciancia EM, Campani D, Facchino V, Fioretti P. The clinical, serological, pathological and immunocytochemical features of a case of primary carcinoma of the fallopian tube. *Eur J Gynaecol Oncol*. 1993;14(5):374-9.
5. adducci A, Landoni F, Sartori E, Maggino T, Zola P, Gabriele A, Rossi R, Cosio S, Fanucchi A, Tisi G. Analysis of treatment failures and survival of patients with fallopian tube carcinoma: a cooperation task force (CTF) study. *Gynecol Oncol*. 2001 May;81(2):150-9.
6. Alvarado-Cabrero I, Young RH, Vamvakas EC, Scully RE. Carcinoma of the fallopian tube: a clinicopathological study of 105 cases with observations on staging and prognostic factors. *Gynecol Oncol* 1999; 72:367–79.
7. Lacy MQ, Hartmann LC, Keeney GL, Cha SC, Wieand HS, Podratz KC, Roche PC. c-erbB-2 and p53 expression in fallopian tube carcinoma. *Cancer* 1995;75:2891–6.
8. Ajjimakorn S, Bhamarapravati Y. Transvaginal ultrasound and the diagnosis of fallopian tubal carcinoma. *J Clin Ultrasound* 1991;19:116 –9.
9. Ekici E, Vicdan K, Danisman N, Soysal ME, Cobanoglu O, Gokmen O. Ultrasonographic appearance of fallopian tube carcinoma. *Int J Gynaecol Obstet* 1995;49:325–9.
10. Kurjak A, Kupesic S, Ilijas M, Sparac V, Kosuta D. Preoperative diagnosis of primary fallopian tube carcinoma. *Gynecol Oncol* 1998;68:29 –34.
11. Puls LE, Davey DD, DePriest PD, Gallion HH, van Nagell JR Jr, Hunter JE, Pavlik EJ. Immunohistochemical staining for CA-125 in fallopian tube carcinomas. *Gynecol Oncol* 1993;48:360 –3.

12. Salvador S, Gilks B, Köbel M, Huntsman D, Rosen B, Miller D. The fallopian tube: primary site of most pelvic high-grade serous carcinomas. *Int J Gynecol Cancer*. 2009 Jan;19(1):58-64.

Figures

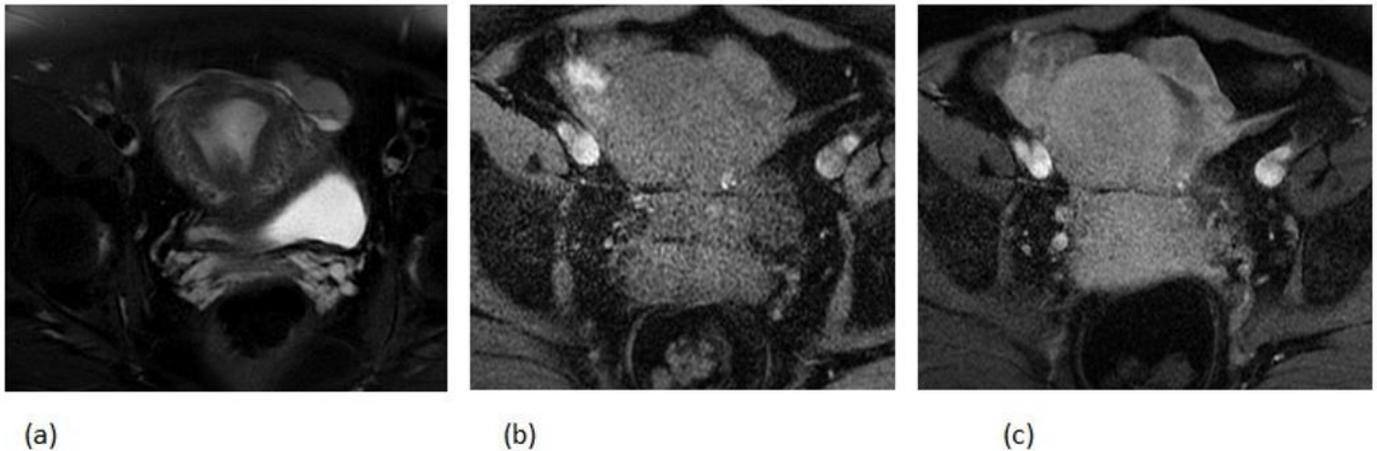


Figure 1

MRI features of the lesion. (a) T2- weighted image shows a tubular slightly low T2 signal structure in left adnexa separate from the left ovary. (b) This tubular structure shows iso-signal in T1-weighted image with only thick wall enhancement in post contrast image. (c) Without obvious solid enhancing component.

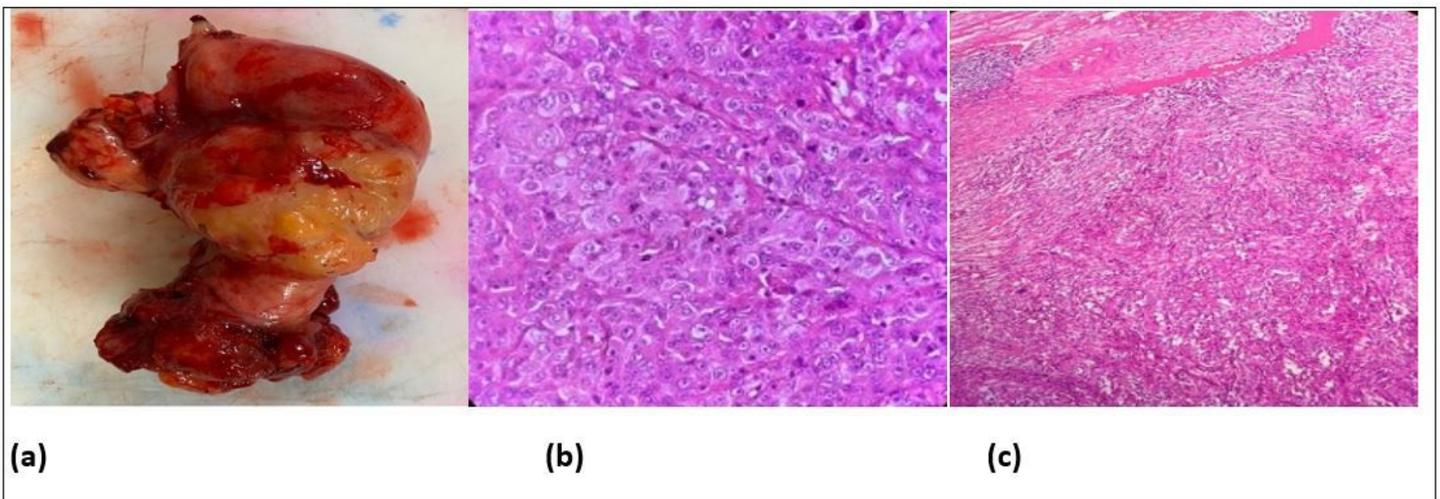


Figure 2

Histological structure and cytological features of the tumor. (a) Left fallopian tube macroscopic view. (b) High-grade serous carcinoma with solid growth, marked cytology atypia and high mitotic activity. (c) The

tumor is infiltration in the fallopian tube wall in the background of chronic salpingitis.