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Case report

Fallopian tube cancer incidentally diagnosed during laparoscopy for metastatic adenocarcinoma of unknown primary lesion

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ABSTRACT

Primary fallopian tube cancer is a rare gynecological malignancy. We report a case of fallopian tube cancer that was incidentally diagnosed during laparoscopy for metastatic adenocarcinoma of unknown primary lesion. A 60-year-old woman had two intraperitoneal calcific masses, which a biopsy revealed to be a metastatic malignancy with an unknown primary site. She was asymptomatic, and the primary site was not identified in imaging evaluations such as transvaginal ultrasonography. A diagnostic laparoscopy was performed and revealed papillary tumor-like lesions in the right fallopian tube. The laparoscopy was immediately converted to laparotomy. Total hysterectomy, bilateral salpingo-oophorectomy, and an omentectomy were also performed. The histopathologic diagnosis was primary serous adenocarcinoma of the fallopian tube. The patient received adjuvant chemotherapy. At 8 months postoperatively, there were no signs of recurrence. In this patient, the diagnostic laparoscopy was more useful for detecting the primary small-volume fallopian tube cancer, compared with ultrasonography, computed tomography (CT), magnetic resonance imaging, and positron emission tomography–computed tomography (PET-CT). Laparoscopy may be a tool for revealing an obscure primary lesion in the abdominal cavity.

Introduction

Primary fallopian tube cancer is a rare gynecological malignancy that accounts for 0.14–1.8% of gynecologic malignancies.[1–3] It most frequently occurs in women 40–65 years old (mean age, 55 years).[1,2] However, its incidence may be underestimated because of the difficulty of differentiating it from epithelial ovarian cancer.[1–3] Falconer et al[4] reported that salpingectomy reduces the risk of ovarian cancer, which is compatible with the hypothesis that serous ovarian cancer partly involves primary fallopian tube cancer. In recent studies, *BRCA-1* and *BRCA-2* germline mutations were revealed as risk factors of fallopian tube cancer.[5,6] The most common symptoms and signs of primary fallopian tube cancer are abnormal vaginal bleeding and discharge, abdominal mass, and abdominal pain. In imaging evaluations, the lesion is often diagnosed as an adnexal mass. The treatment of fallopian tube cancer has yet to be established, but it is normally based on the same guidelines as ovarian cancer. In this patient, intraperitoneal metastatic adenocarcinomas were detected, but no other symptoms were observed. In the preoperative imaging evaluations, a primary lesion was not identified. A diagnostic laparoscopy was then performed and a small primary cancer was successfully detected in the unilateral fallopian tube.

Case Report

During a computed tomography (CT) examination to assess chronic hepatitis B virus infection, a 60-year-old multigravida woman was incidentally found to have two calcific masses that measured 5.0 cm × 4.0 cm and 3.0 × 3.0 cm in the mesentery (Figure 1). On the ^{18}F-fluorodeoxyglucose (FDG) positron emission tomography-computed tomography (PET-CT) scan, abnormal FDG

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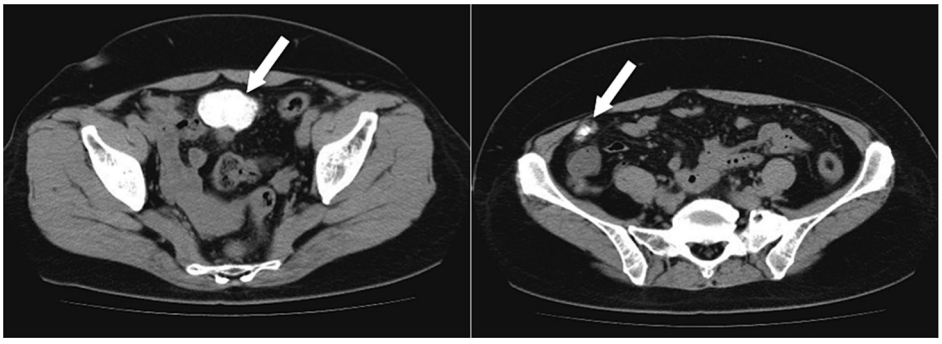

Figure 1. The computed tomography image shows calcific masses in the mesentery. The needle biopsy results indicated metastatic adenocarcinoma. The intraperitoneal calcific masses (arrows) measure 5.0 cm × 4.0 cm and 3.0 cm × 3.0 cm.

accumulation was detected only in the two lesions, which was compatible with the two calcific masses revealed by the CT scan. The PET-CT scan did not show a tubal cancer lesion. The histopathologic diagnosis, based on needle biopsy of the median abdominal calcific mass (Figure 1), was metastatic serous adenocarcinoma. For this reason, the patient was referred to our department. She was asymptomatic and her uterus and bilateral adnexa showed no abnormalities on transvaginal ultrasonography. The primary site could not be identified by magnetic resonance imaging (MRI) or PET-CT. Cervical and endometrial smears yielded negative results. The levels of the tumor markers cancer antigen 125 (CA-125) and carcinoembryonic antigen (CEA) were elevated at 40.1 U/mL and 6.2 ng/mL, respectively.

The patient underwent diagnostic laparoscopy for detection of the primary origin of the lesion. The laparoscopy was performed by first attaining the pneumoperitoneum by using a pneumoperitoneum needle through the umbilicus. A 5-mm initial trocar was inserted by the optical view method. Two more 5-mm trocars were inserted in the right and left sides of the lower abdomen. Intraperitoneal observation revealed a papillary tumor-like lesion in the fimbria of the right fallopian tube, a nodule on the right ovary (Figure 2), and some solid tumors in the omentum. The laparoscopy was immediately converted to a laparotomy. After right fallopian tube cancer was diagnosed intraoperatively, a total hysterectomy, bilateral salpingo-oophorectomy, and omentectomy were performed. In this patient, lymphadenectomy as a staging laparotomy was omitted because an intraoperative diagnosis of fallopian tube cancer with metastasis was already determined. We planned adjuvant chemotherapy.

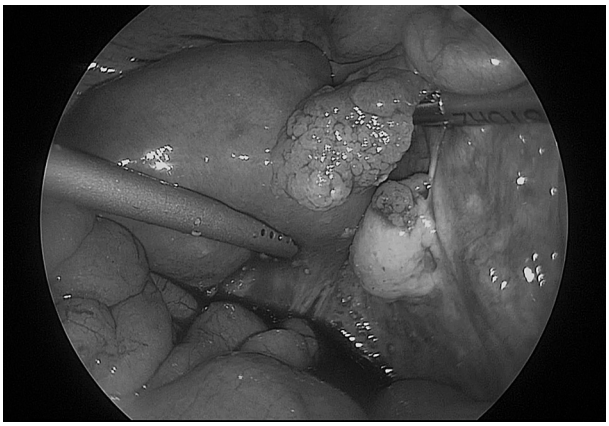

Figure 2. Laparoscopic findings of the right adnexa. Papillary tumor-like lesions are in the fimbria of the right fallopian tube and on the right ovary.

Macroscopic findings from the resected specimens showed the following measurements: papillary tumor of the right fimbria, 17 mm × 12 mm × 7 mm; ovarian nodular tumor, 4 mm; three lesions of solid masses in the greater omentum: 45 mm × 40 mm × 28 mm, 30 mm × 30 mm × 20 mm, and 15 mm × 15 mm (Figure 3). The histopathologic diagnosis was primary serous adenocarcinoma of the right fallopian tube (well-differentiated, grade 1) and disseminated serous adenocarcinoma of the right ovary and omentum (Figure 4). The uterus, left ovary, and fallopian tube had no indication of malignancy. The clinical stage of the patient's disease was IIIc [i.e., International Federation of Gynecology and Obstetrics (FIGO) stage T3cNxM0].

Her postoperative course was good. She received six courses of adjuvant chemotherapy in combination with paclitaxel and carboplatin. At 8 months postoperatively, there were no signs of recurrence.

Discussion

Laparoscopy has been well developed as a procedure for detecting lesions such as infertility lesions. Recent studies have proposed that laparoscopy can be utilized for identifying malignancy/benignancy in adnexal masses, or utilized as a staging and second-look procedure for ovarian cancer.[7,8] The purpose of laparoscopy in this patient was to detect unknown primary lesions of metastatic adenocarcinoma. If a primary lesion is identified, laparoscopy is converted to a suitable surgery for malignancy; otherwise, chemotherapy is immediately initiated postoperatively. In this patient, laparoscopy was useful for identifying the primary site, which was not identified by the preoperative imaging evaluations by ultrasonography, CT, and MRI because of the small size of the fallopian tube cancer. PET-CT evaluation showed no abnormalities.

Specific clinical symptoms and findings indicative of fallopian tube malignancy were virtually nonexistent; hence, a preoperative diagnosis is extremely difficult. The reported preoperative diagnosis rate of tubal cancer is as low as 2–21%.[9,10] The most common symptoms are vaginal bleeding or spotting (50–60%) and abdominal pain (30–50%). However, primary fallopian tube cancer is often asymptomatic, especially at the early stage (FIGO stages I and II).[2,11] Latzko's triad of symptoms, which consists of intermittent profuse serosanguinous vaginal discharge, colicky pain relieved by the discharge, and abdominal or pelvic mass, has been reported in fewer than 15% of patients.[1] Imaging modalities such as ultrasonography, CT, and MRI can often detect solid and lobulated components with papillary projections.[2] These symptoms and imaging findings are, however, nonspecific and often lead to a diagnosis of ovarian tumor or pelvic inflammatory disease. Wenzl et al[12] reported an unsuspected primary tubal carcinoma during operative

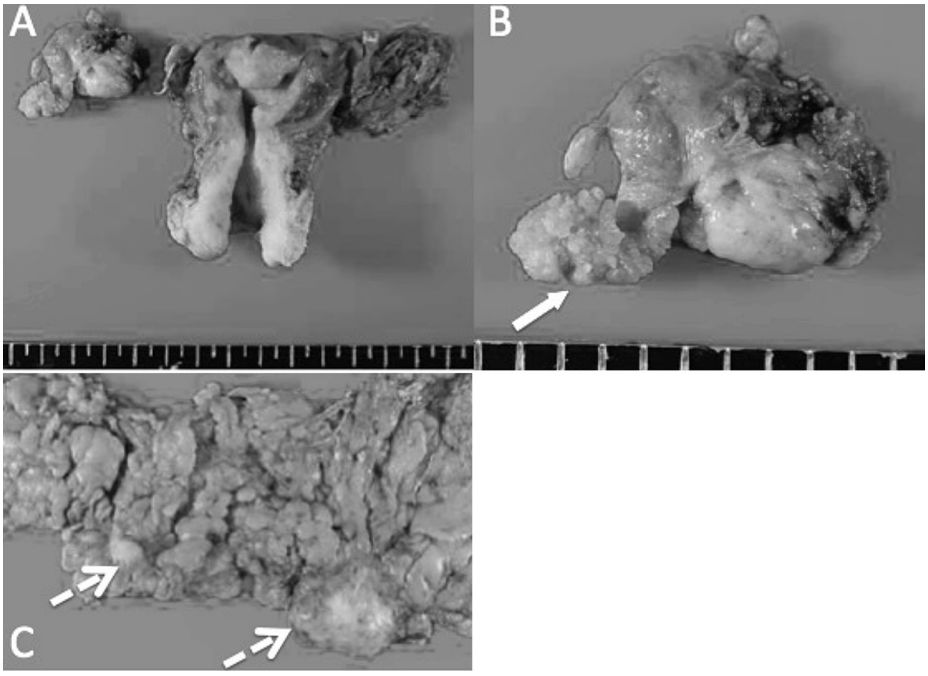

Figure 3. Macroscopic findings of the resected specimen. (A) The uterus and bilateral adnexa. The uterus and left adnexa have no abnormal findings. (B) The right fallopian tube. A papillary tumor is in the fimbria and measures 17 mm × 12 mm × 7 mm (arrow). (C) The omentum. Solid masses (broken arrows) in the omentum were detected preoperatively.

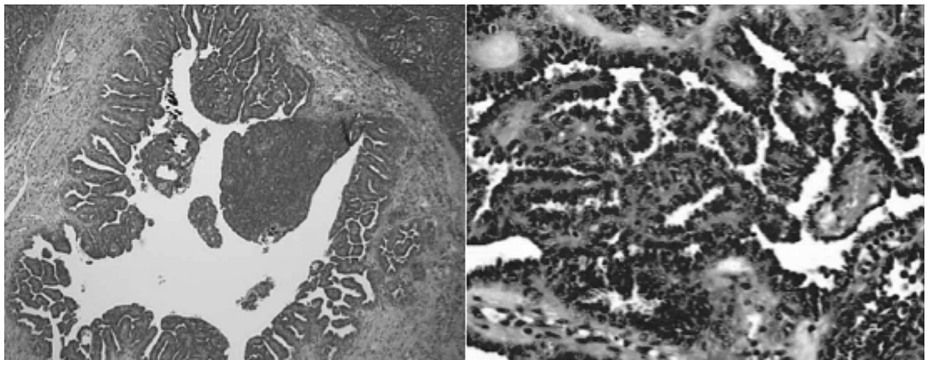

Figure 4. The microscopic findings of the right fallopian tube. The serous adenocarcinoma is well differentiated [hematoxylin and eosin stain; the sample at ×10 magnification (left) and ×40 magnification (right)].

laparoscopy for adnexal masses. Some tubal cancers may present as a distant metastasis. Submitting all of the remaining fallopian tube for histological examination seems important for women who present with metastatic high-grade adenocarcinoma with an unknown primary site, despite the low incidence rate or unclear clinical evidence.[13] The present case of fallopian cancer was first diagnosed as a distant metastatic adenocarcinoma before the diagnosis of primary fallopian tube cancer without preoperative imaging findings of adnexa. As for other manifestations, cervicovaginal smear positivity occurs in 10–36% of patients and an elevated serum CA-125 level detects more than 80% of cases. In our patient, the cervicovaginal smear test yielded negative results and the CA-125 level was elevated to 40.1 U/mL. Thus, it seemed extremely impossible to diagnose fallopian tube cancer, based on all clinical manifestations and findings.

In conclusion, compared to ultrasonography, CT, and MRI, a diagnostic laparoscopy was more useful for detecting the primary site of the metastatic adenocarcinoma and primary small-volume fallopian tube cancer in this patient. Laparoscopy may be utilized as a tool to detect obscure lesions in the abdominal cavity that imaging evaluation cannot detect.

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