Incidental small ovarian surface serous carcinoma with Miliary abdominal seeding during robotically-assisted total hysterectomy

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Summary

Objective: To report a case in which an incidental finding of an extremely small ovarian surface tumor with abdominal miliary seeding was managed using robotic staging surgery. Case Report: A 53-year-old women, gravida 0 para 0, who was experiencing dysmenorrhea and adenomyosis, was admitted initially for robotically-assisted total hysterectomy. Intraoperatively, an incidental discovery of a 0.5-cm right ovarian surface tumor with pelvic wall miliary tumors was noted. An intraoperative frozen-section diagnosis revealed carcinoma both for the ovarian tumor and pelvic sidewall tumors. A final pathological report revealed serous carcinoma, Stage IIIA2. Conclusion: A preoperatively undetectable small ovarian tumor (0.5 cm) could behave malignantly with metastasis that is already widespread. The authors have reported this case to identify the imperative need for early detection of ovarian cancer.

Key words: Small ovarian surface tumor; Abdominal miliary seeding; Robotic staging surgery.

Introduction

Early diagnosis of ovarian cancer is a challenging task for gynecologists. Often ovarian cancer is diagnosed at an advanced stage without specific symptoms. Serous carcinoma arises from ovarian epithelium, and then metastasizes intra-abdominally to adjacent structures. The approximate size of a primary lesion that leads to peritoneal metastasis is still unknown. Herein the authors report a case of an extremely small (0.5 cm) primary serous ovarian cancer with miliary peritoneal metastasis that was noted incidentally during robotically-assisted total hysterectomy for adenomyosis.

Case Report

The case involved a 53-year-old woman who had suffered from dysmenorrhea ever since she had experienced menarche at the age of 12. She had had a regular menstrual cycle, no history of ovarian malignancy in her family, and had never undergone surgery. She had never given birth to a child and had never had an abortion. She came to the clinic after experiencing aggravated dysmenorrhea in recent cycles. She reported having normal amounts of menstrual blood loss, and claimed that she did not smoke or consume alcohol. In this clinic, transvaginal sonography was done and revealed a globular uterus (6.5 × 5.6 cm), bilateral adequate ovarian size, and mild cul-de-sac fluid. Her CA-125 was 36 IU/ml, and hemoglobin level was 14 g/dl. Due to the aggravated dysmenorrhea, robotically-assisted total hysterectomy was performed. Intraoperatively, an incidental finding of a 0.5 cm right ovarian surface exfoliation tumor was noted along with miliary round dotted tumors (< 0.5 cm) on the pelvic wall surface (Figures 1 and 2). An intraoperative frozen-section diagnosis revealed carcinoma both for the ovarian tumor and pelvic sidewall tumors. The intraoperative impression for this patient was an incidental finding of right ovarian cancer with pelvic wall metastasis. Therefore, subsequent staging surgery was performed including: a total hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic lymph node dissection, para-aortic lymph node dissection, appendectomy, omentectomy, multiple peritoneal biopsies, and ascites cytology. A final pathological report revealed high-grade serous carcinoma and a left internal iliac lymph node metastasis. The FIGO Stage was IIIA2 due to microscopic, extrapelvic peritoneal involvement with positive lymph nodes, and metastasis of one lymph node up to 10 mm in dimension. Further chemotherapy was arranged for the patient postoperatively.

Discussion

The mortality rate of ovarian cancer is greater than that of all other major malignancies, mostly due to the fact that the first diagnosis is often not made until the cancer is at an advanced stage. Understanding the natural history of ovarian cancer is important for developing early detection...
tools. There are two major theories regarding the origin of ovarian cancer. One is a theory related to incessant damage [1]. The theory is that the more times ovulation occurs, the more damage the ovarian epithelium will sustain, leading eventually to malignant transformation. The other theory is that the fallopian tube is the primary site for ovarian cancer [2]. In the case of the patient presented, the authors sectioned all parts of the fallopian tube for further evaluation. No microscopic carcinoma cells were found in the bilateral fallopian tube; therefore, the most likely spread pattern for this patient began at the primary tumor in the ovarian epithelium, was followed by exfoliation on the surface, after which tumor cells spread intraperitoneally onto the pelvic peritoneum.

An estimate of the approximate size of a tumor mass capable of leading to metastasis is still under investigation. Brown et al. concluded that serous ovarian cancer spreads, on average, for more than four years in situ, Stage I or II, and approximately one year as Stage III or IV cancer before becoming clinically apparent. For most occult periods, if the tumor is not visible on a gross examination of the ovaries and fallopian tube, then the tumor size is less than 1 cm. Also, the median diameter of a serous ovarian cancer capable of progressing to Stage III or IV is about 3 cm [3]. However, in this case, by utilizing a robotically-operated high resolution camera, the authors were able to identify a 0.5 cm primary tumor. If such a small primary tumor is able to spread to the peritoneum and lymph nodes, it might indicate that the appropriate classification is high-grade histology.

In 80% of all patients with advanced epithelial ovarian cancer, CA-125 is elevated. In fact, 80% of patients with ovarian cancer at any stage who are over the age of 50, have an elevated CA-125. In Stage I, the sensitivity is lower at 50% [4]. In this case, the CA-125 level was moderately elevated and such elevation might be masked by adenomyosis. Therefore, preoperative suspicious for ovarian malignancy is almost impossible.

In conclusion, serous ovarian cancer is a silent killer. The size of the tumor might be relevant to metastasis, but an extremely small primary lesion with high grade cell type still has the potential to metastasize. A robotic camera is an excellent visual system for identifying extremely small lesions, which might otherwise not be spotted by a gross examination during laparotomy. It is imperative to develop early detection tools for ovarian cancer.

Ethics Approval and Consent to Participate

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of TMU-JIRB No: N201612088.

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Conflict of interest

The authors declare no conflict of interest.

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