Primary Carcinoma of the Fallopian Tube Coexisting with Benign Cystic Teratoma of the Ovary

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Abstract

Primary carcinoma of the fallopian tube is a rare malignancy of the female genital tract and infrequently diagnosed before an operation. The majority of patients have extensive disease at the time of diagnosis. We have experienced incidentally a case of a carcinoma of the fallopian tube coexisting with a benign cystic teratoma of the ovary in a 25-year-old woman. We report this case with a brief review of literatures.

Key Words: Fallopian tube carcinoma, benign cystic teratoma of the ovary

INTRODUCTION

Primary carcinoma of the fallopian tube is one of the rare malignant tumors of the female reproductive tract. The clinical symptoms of carcinoma of the fallopian tube are usually inconsistent and non-specific as vaginal bleeding & lower abdominal pain. The diagnosis is usually not confirmed prior to an operation and the disease is often found to be at an advanced stage.

We report a case of a primary malignant neoplasm of the fallopian tube coexisting with a benign cystic teratoma of the ovary with a review of literatures.

CASE REPORT

A 25-year-old housewife, gravida 0, para 0 was referred to Yongdong Severance Hospital for complaints of intermittent right lower abdominal pain and vaginal bleeding. Her menstrual cycle interval was irregular. She was infertile for one and a half years. She visited a private clinic for the symptoms in January, 1998. Transvaginal ultrasonography demonstrated a right adnexal cystic mass with size of 3 cm. The mass was growing and compatible with a benign cystic teratoma.

On admission to this hospital, she was found to have blood pressure of 110/80 mmHg, a pulse of 68, and an oral temperature of 36.8°C. The patient was in no apparent discomfort. Lungs were clear and the heart was normal. The abdomen was soft and flat, except mild right lower tenderness.

On pelvic examination, the uterus was of normal size and consistency. A 4×4 cm sized palpable right adnexal mass with mild tenderness was detected.

A small amount of dark red colored blood was also noted in the endocervical canal. Her blood type was B-positive. The laboratory data showed the white blood cell count of 12,480/mm³, hemoglobin 12.4 g/dL, and hematocrit 34.9%. Serologic test for hepatitis B was HBsAg (−). VDRL was negative. Urinalysis, serum chemistries, electrocardiography, and chest X-ray revealed normal findings. Papanicolaou smear from uterine cervix was within normal limits.

The transvaginal ultrasonography demonstrated a 4.04×4.70 cm sized right adnexal mass which had semisolid and solid contents. And it was unilocular and well-demarcated. The uterus and right adnexa were normal in size and shape.

The operative laparoscopy was performed under the impression of a benign dermoid cyst of right ovary.
A 4×4×3 cm sized white-greyish colored right ovarian mass with adhesion to mesosalpinx was encountered. The uterus, left adnexa, and right tube were grossly normal. No ascites was found in the peritoneal cavity. Yellowish greasy fluids were aspirated through a needle aspirator. Multiple hairs were found from puncture site of right ovarian mass. After right salpingoophorectomy, about 2,000 cc of warm saline irrigation was performed.

On pathologic findings, the right ovary was measured 5×3×2 cm. It was a unilocular cyst, and filled with brown tan friable material admixed with multiple hairs. The fallopian tube was grossly unremarkable. The pathologic diagnosis of right ovary was a dermoid cyst and a hemorrhagic corpus luteum. The pathologic diagnosis of the fallopian tube was a papillary adenocarcinoma without involvement of muscle layer. The neoplasm showed fine branching papillae without stromal core and covered by one or more layers of epithelium with enlarged and pleomorphic hyperchromatic nuclei. The histologic grading of this neoplasm was well-differentiation (Fig. 1, A and B).

The postoperative course was uneventful. The patient was discharged on the 5th postoperative day before receiving a pathologic diagnosis report. On the 15th postoperative day, she was readmitted for baseline study. On readmission, complete blood cell counts and serum electrolytes and chemistry were within normal limits. The CA-125 and CEA blood value were 37.2 U/mL and 3.7 ng/mL, respectively.

The results of investigations including of sigmoidoscopy, intravenous pyelogram and cystoscopy revealed normal findings. Magnetic resonance imaging of the pelvis demonstrated a lymph node enlargement of right external iliac artery.

Under the general anesthesia, an exploratory laparotomy was performed. After the washing cytology, adhesions of the appendix and the large omentum to the the previous operation site were encountered. So, the adhesiolyis and an appendectomy, and right external iliac lymph nodes dissection were performed. A frozen section of the remnant of right tube and lymph nodes of right external iliac artery revealed no evidence of malignancy. And the exploration of pelvic and abdominal cavity could not detect any suspicious nodule of metastasis.

On pathologic findings, the remnant of right tube revealed acute and chronic inflammatory change with foreign body reaction. The lymph nodes were free from tumor. The appendix was impacted with fecalith. The peritoneal washing cytology was clusters of atypical cells suggesting adenocarcinoma.

The following is the final diagnosis made: papillary adenocarcinoma Stage Ia-Grade I tumor.

The postoperative course was uneventful and the follow-up CA-125 blood value was 29.2 u/ML. She was discharged without problems on the 8th postoperative day, and followed up by the outpatient department of this gynecologic clinic. Postoperative hysterosalpingo-graphy revealed left tubal patency. No additional treatment was recommended. CA-125, FSH, LH, and estradiol taken on the 3rd postoperative month were within normal limits. After eight postoperative months, she was pregnant spontaneously. She is being followed-up by the outpatient department without any evidence of recurrence.
DISCUSSION

Primary carcinoma of the fallopian tube is the rarest malignancy of the female reproductive tumors, and forms 0.3–1.11% of a total gynecological tumor. In primary carcinoma of the fallopian tube, the prevalence age is between 18 and 80. However, two-thirds of the patients have this tumor after menopause with a mean age of 55 to 60 years. The gravidity of primary carcinoma of the fallopian tube is variable. Most of the authors reported a high prevalence rate in nullipara or primipara instead of multipara. The rate is from 21% to 71%. The patient in this case was also nullipara.

The causes of this tumor are unknown, but some reported that it has the association with inflammatory changes or tuberculosis of the fallopian tube because of high incidence of infertility. Others reported that pelvic inflammatory disease, sexually transmitted disease, endometriosis, and pelvic tuberculosis are triggering factors. However, the prevalence of primary carcinoma of the fallopian tube is very low compared to adnexal inflammation so, the above diseases are considered not to be related to the tubal cancer.

The primary carcinoma of the fallopian tube can occur in any portions of the fallopian tube, but the ampulla and the isthmus are the most common sites. It can occur not only unilaterally but also bilaterally. Some authors described that the prevalence of bilateral occurrence is 5–26%.

The classic triad of symptoms and signs associated fallopian tubal cancer are a prominent vaginal discharge, pelvic pain, and a plevic mass. The most common symptom encountered is abnormal vaginal bleeding, and it occurs as postmenopausal bleeding in older patients and intermenstrual bleeding in young patients. The patient in this case had abnormal vaginal bleeding which could not be regarded as a sole symptom of primary carcinoma of fallopian tube.

The correct preoperative diagnosis may be difficult even at laparotomy and on the extirpated specimen by the nonspecific symptoms and physical findings. On pelvic examination, a pelvic mass may be frequently misdiagnosed as ovarian tumor. Sometimes it can be misdiagnosed as leiomyoma, endometrioma or pelvic inflammatory disease. Fallopian tubal cancer is often found incidentally in asymptomatic women at the time of abdominal hysterectomy and bilateral salpingoophorectomy as in this case. It can be diagnosed after the surgery of infertility. The methods used for the detection of this neoplasm include ultrasonography, CA-125 assay, nuclear magnetic resonance, computed tomography and laparoscopy. Hysteroscopy has been recommended for this purpose recently. Ultrasonography and CA-125 offer the best result although the former has limited accuracy in the early stages of tubal carcinoma.

It often shows cytologic and histologic features similar to those of serous carcinoma of the ovary, explained by the common origin during embryonic development. So, the levels of serum CA-125 may be elevated during the processing of tumor, and decrease after the therapy. The level of serum CA-125 can be used for follow up study for tubal ca. The increase of serum CA-125 is associated with the size of lesion, peritoneal exudate, or metastasis. FIGO stage and preoperative CA-125 level have positive relationship, but the levels can increase after the second stage. In this case, the level of CA-125 was slightly increased, and returned to the normal range after the surgery. According to the recent study, the positive rates of cervical Pap smear and endometrial aspiration cytology were 25% and 30% respectively. So endometrial aspiration cytology is considered to be useful for detecting the adnexal tumors.

The pathological findings of primary carcinoma of the fallopian tube are similar to those of epithelial ovarian tumor. The vast majority are papillary adenocarcinoma. Adenosquamous cell carcinoma, sarcoma, adenoacanthoma, endometrioid adenocarcinoma, choriocarcinoma, glassy cell tumor, and malignant mixed Mullerian tumor could occur. Very rarely could transitional cell carcinoma be reported.

To make a distinction between metastatic tumor and primary tubal carcinoma, the histopathologic diagnostic criteria of primary tubal carcinoma were set, which were graded by three-stage differentiation. Staging of tubal carcinoma conforms to the classification founded by FIGO in 1991.

Like ovarian carcinoma, tubal carcinoma metastasis transfers through mucosal surfaces to uterine cavity, pelvic, ovary, and peritoneum. Recently lymph nodes metastasis has become an important factor in 5 years survival rate, which has been observed from 55% of patients who have got lymph nodes dissection, and has reportedly had unfavorable outcome to survival rate.

Due to clinical and histological similarities to
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ovarian carcinoma, recent standard treatment that has been used for ovarian carcinoma is being applied to tubal carcinoma of which the appropriate treatment has not been decided. The most appropriate treatments are total abdominal hysterectomy, bilateral salpingo-oophorectomy, and omentectomy.

In the case of metastatic carcinoma, postoperative chemotheraphy, radiotherapy, and intrabdominal radioisotope $^{125}$ implantation are required. It has been argued that postoperative pelvic radiotherapy which has been widely used until recently can reduce local recurrence, but not increase the survival rate. Debate continues about the effects of adjuvant treatment on early carcinoma. In this case, the patient was infertile and the cancer was in the early stage, so only conservative treatment was appropriate.

There are reports that platinum-based chemotherapy had 50–80% response rate in treating metastatic carcinoma, which suggests that platinum-based therapy is effective in treating tubal carcinoma. Second-look laparotomy is one of important prognostic factors for survival in ovarian carcinoma, but gets no satisfactory result in treating tubal carcinoma, hence its constant use in second-look operation needs further evaluation due to high recurrence rate (30%) and absence of strong secondary chemoaegent even if tumor is not present.

The important prognostic factors are stages at the diagnosis and histopathologic differentiation, and the 5-year survival rates are reported to be 50–60% in I-II stage and 0–20%, III-IV stage, respectively.

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REFERENCES