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Case Report
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Primary Fallopian Tube Carcinoma: A Case Report

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Abstract

Primary cancer of the fallopian tube is a rare condition. The clinical findings can vary and are non-specific, making it a diagnostic challenge. Therefore, definitive diagnosis of primary cancer of the fallopian tube is mostly based on postoperative histological examination. However, the consequences of not diagnosing this disease can be significant as the five-year survival is low in advanced stage of the disease. In this case report the difficulties that are encountered in the diagnosis of primary cancer of the fallopian tube are described.

Introduction

Primary Cancer of the Fallopian Tube (PFTC) is rare. In the United Kingdom, an average of 40 cases is reported each year [1]. The United States has an annual incidence of approximately 3.6 per million women per year [2]. The exact incidence of tubal carcinoma in the Netherlands is unknown. PFTC is estimated to concern 0.14% to 0.18% of all genital cancers [3], although the incidence of fallopian tube cancer could be significantly underestimated [4]. This is because clinically and histologically PFTC resembles ovarian cancer. It is difficult to differentiate from serous ovarian cancer or primary peritoneal serous carcinoma during or after operation. The peak incidence is between the age of 60 and 64 years [5]. In addition to the rarity of the disease, the variety in signs and symptoms and the lack of specific symptoms are factors that make detection of PFTC difficult. Therefore, definitive diagnosis of PFTC is mostly based on an intraoperative finding or a postoperative histological examination. The treatment of PFTC depends on the staging. Because it often occurs bilaterally and it prefers to metastasize to the uterus and ovaries, removal of the uterus and both adnexa are the primary treatment [6]. We report a case of primary tubal adenocarcinoma discovered in a 71-year-old woman, with vaginal discharge as initial symptom.

Case Presentation

A 71-year-old, post-menopausal woman came to us complaining of vaginal discharge that began 5 months previously. Her medical history revealed colon cancer 11 years ago. She underwent endoscopic surgery for local colon resection. No post-treatment was necessary, and she experienced complete remission. The general practitioner referred her to us, as he was suspecting the discharge to be urinary loss. We saw a woman in good general health. Physical examination of the abdominopelvic area revealed no palpable mass. Vaginal examination showed a pinpoint ostium of the cervix without abnormalities on the vaginal walls. There was no uterine prolapse. Vaginal discharge was yellowish and mucoid. Transvaginal ultrasonography showed a retroverted uterus with a thin endometrium. The posterior wall showed an intramural myoma, measuring 25 mm × 33 mm. The right ovary showed no abnormalities. The left side revealed an irregular elongated mass with blood flow, measuring 6 cm × 4 cm (Figure 1). The mass consists of multiple cystic locules with a thick irregular wall. It was difficult to determine its origin. No fluid in the pouch of Douglas was seen. A Papanicolaou (i.e., PAP) smear revealed PAP1. The aspect of the vaginal discharge did not suggest urine. A culture test of the discharge showed *S. Aureus*. The serum Cancer Antigen (CA) 125 level was normal (8 U/ml [normal <35 U/ml]). Also, Carcinoembryonic Antigen (CEA) was normal (1.7 ug/l [normal <5.0 u/l]). An abdominal-pelvic CT-scan showed an indistinct malignant or benign tumor originating in the left adnexa (Figure 2). There was no ascites, lymphadenopathy or peritonitis carcinomatosa noted. There was no evidence of ureter, bladder, colon or urethral involvement. She underwent an exploratory laparotomy. No abnormalities of the uterus and right ovary were found. The left ovary was small. The left tube was enlarged and adhesive to the pelvic sidewall. No ascites was present. A tumor biopsy was collected and sent for frozen section histology. An uncomplicated total hysterectomy with a bilateral adnexectomy was performed. The postoperative course was uneventful. The histological examination showed a well-differentiated, stage IA, high-grade adenocarcinoma of the left tube. There was no tumor localization in the uterus, ovaries or the right tuba. She was referred to the oncology department for adjuvant chemotherapy of

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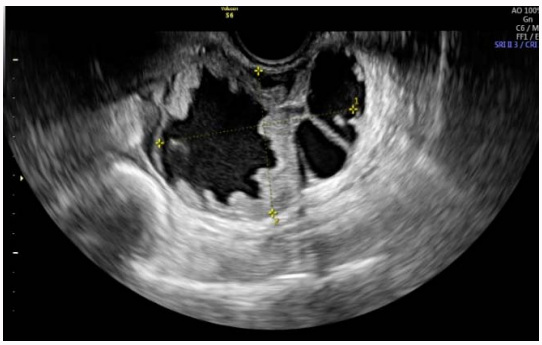

Figure 1: An irregular density with color flow, measuring 6 mm × 4 mm.

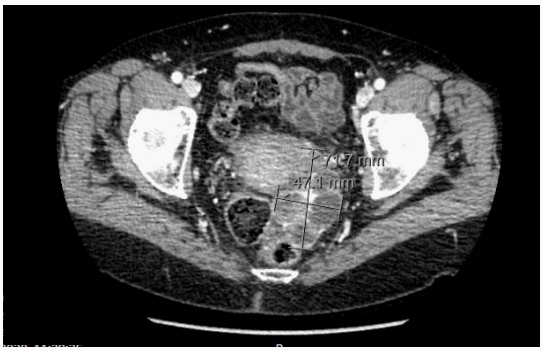

Figure 2: CT-scan with a tumor originating in the left adnexa.

6 cycles of Carboplatin monotherapy during 18 weeks. No recurrence was noted 6 months post-operative.

Discussion

PFTC is the rarest tumor in female genital tract cancers. However, the true incidence of PFTC may be higher than reported. This could be due to the fact that tubal carcinoma often is seen as ovarian carcinoma during surgery and/or microscopic examination, as the histological appearances of these tumors are almost identical [7,8]. And even when the tumor is resected, it still can be reported as an ovarian cancer [9]. No significant correlation with age, ethnicity, weight, infertility, smoking or endometriosis has been demonstrated [7,10]. The clinical signs and symptoms of PFTC are unclear. Latzko describes a triad of symptoms, existing of serous vaginal discharge, colic pain and an abdominal mass [11]. This triad exists in about 15% of patients with PFTC [12,13]. Fluid leaking forms the tube, presenting as vaginal discharge, similar to our patient, has been reported in 5% of patients [6]. A transvaginal and/or transabdominal ultrasound is essential for imaging in tubal pathology. However, the fallopian tubes are often difficult recognizable on ultrasound. Tubal abnormalities- may resemble other pelvic conditions such as a tubo-ovarian abscess, an ovarian tumor or an ectopic pregnancy [6]. Tubal carcinoma has no pathognomic hallmark on ultrasound and is therefore difficult to recognize. Although rare, PFTC must be considered in the differential diagnosis of adnexal masses, and particularly in the presence of incomplete septations and a highly vascular, solid component. Diagnosing PFTC preoperatively, could be helped by measuring serum levels of CA-125. CA-125 levels are elevated in more than 80% of PFTC cases, especially in cases of advanced disease [14]. Therefore, CA-125 can be used in the diagnosis of PFTC. Unfortunately, it is not specific as CA-125 levels also increase in ovarian cancer and other gynecologic diseases, such as endometriosis. Primary adenocarcinoma of the fallopian tube with papillary features is the most common histological type of primary tubal cancer (>90%) [15]. Serous carcinoma appears to be the most common histologic type [11]. Because it is hard to differentiate PFTC from epithelial ovarian cancer, patients with at least one of the following criteria should have the diagnosis of PFTC. The main tumor is in the tube and arises from the endosalpinx; (b) histologically, the pattern reproduces the epithelium of the mucosa and often shows a papillary pattern; (c) if the wall is involved, the transition between benign and malignant epithelium should be demonstrable; and (d) the ovaries and endometrium are either normal or contain less tumor than the tube [6]. No relationship has been found between tubal malignancy and colon carcinoma. In this case, the two malignancies are therefore independent of each other. Similar to ovarian cancer, BRCA germline mutation and TP53 mutation are associated with PFTC [9,16]. Surgery is the treatment of choice for cancer of the fallopian tubes. Surgical principles are the same as those applied in ovarian cancer. The procedure consists of a total abdominal hysterectomy, bilateral salpingo-oophorectomy, selective pelvic and para-aortic lymphadenectomy, peritoneal washing, and peritoneal biopsies [14,17]. Adjuvant chemotherapy is considered effective, in view of the mode of lymphatic and hematogenous metastasis for this cancer. A platinum compound combined with paclitaxel is the standard chemotherapy in the treatment of PFTC, identical to ovarian cancer patients [18]. Prognosis depends on the stage of the disease at diagnosis, the histological type of the cancer, and the degree of success of the surgery. In early-stage patients, the prognosis is good and the disease can be cured [19]. At an advanced stage of the disease, the five-year survival is low (34%) [20]. Due to the poor prognosis of PFTC in late stages, early diagnosis is even more important.

Conclusion

Primary cancer of the fallopian tube should be suspected in postmenopausal women with vaginal discharge and a suspicious adnexal mass seen on ultrasound. Diagnosis can be challenging due to the non-specific clinical manifestations and the lack of methods to diagnose this disease. Definitive diagnosis of PFTC is mostly based on an intraoperative finding or a postoperative histological examination. However, early clinical manifestation and prompt investigations lead to diagnosis in the early stage of disease accounting for a better prognosis.

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