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Case Report

Synchronous Endometrial and Ovarian Carcinoma: A Case Series

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Keywords

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Abstract

Synchronous ovarian and endometrial cancer (SEOC) is a rare instance but it accounts for 50–70% of all synchronous female genital tract tumors. We report three cases of women who were diagnosed with SEOC and underwent surgical staging. All cases were of the endometrioid subtype, grade 1, both in the ovarian and endometrial component. Two of them were stage Ia/Ia, and the third was stage Ib/Ib. More than 2 years after the diagnosis, all patients were alive and recurrence-free. The present report critically discusses the main characteristics, risk factors, and management of patients with SEOCs.

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Introduction

Synchronous endometrial and ovarian carcinoma (SEOC) is a rare instance but it accounts for 50–70% of all synchronous female genital tract tumors [1]. Due to the different management and the favorable prognosis of SEOCs, it is important to separate SEOCs from a metastatic disease. In the past, pathologic criteria by Ulbright and Roth [2] were used in order to distinguish synchronous primary tumors from metastasis. SEOCs are characterized by histological dissimilarity of the tumors, no or only superficial myometrial invasion of endometrial cancer, no vascular space invasion of endometrial and ovarian tumor, absence of other evidence of spread, ovarian unilateral tumor, ovarian tumor in the parenchyma and without involvement of the surface of the ovary, dissimilarity of molecular genetic or karyotypic abnormalities in the tumors, and different ploidy of DNA of the tumors [3]. This report describes three cases of SEOCs and critically discusses the main features of these patients.

Case Presentation

Case 1

A 46-year-old, para 2, premenopausal woman presented with recent menstrual disorders and abnormal uterine bleeding to the Gynecological Oncology Unit, 3rd Department of Obstetrics and Gynecology, “Attikon” University Hospital, National University of Athens, Greece. She had a history of epileptic seizures and she had been receiving oxcarbazepine. Her family history included a prostate cancer in her father. The clinical examination of the abdomen revealed an undetermined mass which was extended till the umbilicus.

Abdominal ultrasound and magnetic resonance imaging (MRI) showed a mass in the right ovary measuring 117 × 76 × 134 mm, a mass in the left ovary measuring 86 × 94 × 84 mm and absence of ascites. An increase in endometrial thickness was also identified (9 mm). Serum CA-125 concentration was 274.5 U/mL (normal range <35 U/mL). After the positive frozen section pathological examination in the ovaries, the patient underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic and para-aortic lymphadenectomy, omentectomy, appendectomy, and peritoneal biopsies.

Pathological findings revealed an invasive endometrioid carcinoma with squamous differentiation of both ovaries without involvement of the surface of the ovaries (stage Ib, grade 1) and a well-differentiated endometrioid carcinoma of the endometrium with myometrial invasion (stage Ib, grade 1). Peritoneal cytological washing and biopsies, as well as lymph nodes were negative for malignant cells. Radiotherapy (brachytherapy) was planned and the patient received adjuvant chemotherapy with carboplatin and paclitaxel. Up to the last follow-up visit (November 2016), the patient was alive and recurrence-free.

Case 2

A 54-year-old, para 1, obese, postmenopausal (menopause at 51 years) woman was referred to the Gynecological Oncology Unit, 3rd Department of Obstetrics and Gynecology, “Attikon” University Hospital, National University of Athens, Greece. Her presenting complaint was lower abdominal pain during the last month. Her medical history involved a laparoscopic removal of an ovarian cyst in 1988. Examination using ultrasonography showed a

mass of lower abdomen measuring 13 × 10 cm. MRI identified a cystic lesion with solid components of the left ovary, heterogeneity of myometrium and fluid in Douglas space. CA-125 concentration was 91.3 U/mL (normal range <35 U/mL).

The patient underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic and para-aortic lymphadenectomy, omentectomy, appendectomy, and peritoneal biopsies. The fluid in Douglas space and the peritoneal biopsies were negative for malignancy. Pathological findings revealed a well-differentiated endometrioid tumor of the left ovary without invasion of the surface of the ovary (stage Ia, grade 1) and a well-differentiated endometrioid carcinoma of the uterus with invasion of the upper third of myometrium (stage Ia, grade 1). The patient did not receive adjuvant chemotherapy or radiotherapy and we suggested a regular follow-up. Up to the last follow-up visit (November 2016), the patient was alive and recurrence-free.

Case 3

A 78-year-old, para 2, postmenopausal woman with lower abdominal pain and flatulence during the last 6 months presented to the Gynecological Oncology Unit, 3rd Department of Obstetrics and Gynecology, “Attikon” University Hospital, National University of Athens, Greece. Her medical history involved hypothyroidism, hypertension, and osteoporosis. CA-125 concentration was 85 U/mL (normal range <35 U/mL). MRI and ultrasound examination showed a mass in the right ovary (10 cm) and endometrial thickening.

The patient underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic and para-aortic lymphadenectomy, and omentectomy. Pathological findings revealed an endometrioid carcinoma in the ovary (grade 1, stage Ia) and an endometrioid carcinoma in the endometrium (grade 1, stage Ia). The patient did not receive adjuvant chemotherapy or radiotherapy and a regular follow-up was suggested. Up to the last follow-up visit (November 2016), the patient was alive and recurrence-free.

Data of the three reported SEOC cases are summarized in [Table 1](#).

Discussion

According to various studies, 10% of women with ovarian cancer have SEOC and about 5% of women with endometrial cancer are diagnosed with SEOC [4–7]. The majority of women with SEOC are 41–54 years old, 40% of them are nulliparous, 2/3 of them are premenopausal, and 1/3 are obese [8]. The most common symptom of SEOC is abnormal uterine bleeding, but some patients present in gynecological clinics due to pelvic pain or for a palpable pelvic mass [4, 8]. In our report, women with SEOCs were not nulliparous, 2 of them presented with lower abdominal pain and only 1 of them was premenopausal.

Furthermore, the histologic subtype of both primary tumors is endometrioid in 50–70% of cases with SEOCs [1] and the primary independent tumors are often grade 1 or 2 [6]. In large studies, the endometrioid type, the low grade and the early stage of SEOCs are associated with a better prognosis and an overall survival of 80–90% in contrast to the poor prognosis noted in metastatic disease [6, 8]. On the other hand, a recent international multicenter case-control study showed that patients with SEOC tend to have the same prognosis in comparison with patients with single EC or OC, after matching for age, FIGO stage, histology, year

of diagnosis and Eastern Cooperative Oncology Group performance status [9]. All patients in our report were diagnosed with low-grade endometrioid carcinomas of the ovary and uterus and were still alive more than 2 years after surgery.

Pretreatment concentration of CA-125 and the tumor stage of the ovary are independent factors in SEOCs [10]. Regarding the pathogenesis of SEOC, the hypothesis of “microenvironment restriction” reflects the low potential of metastasis of SEOC [11]. It is also believed that embryologically similar tissues such as those of the female genital tract are affected from hormonal stimulation and other carcinogenic factors [12]. Additionally by analyzing mitochondrial DNA and by sequencing different genes, a clonality of SEOCs was confirmed [13, 14]. Nuclear localization of β -catenin and presence of CTNNB1 mutations are associated with SEOC [15].

Other studies analyze the DNA mismatch repair protein (MMR) expression in SEOC in comparison with the expression of these proteins in Lynch syndrome (hereditary nonpolyposis colorectal cancer, HNPCC). It is already known, that patients with HNPCC also develop endometrial or ovarian cancer [16]. The results of these studies suggest that patients with endometrioid or clear cell ovarian cancer under the age of 53 are at higher risk for loss of MMR (MLH1, MSH2, MSH6) expression and Lynch syndrome [17]; however, the majority of SEOCs are sporadic cancers [18]. In our report, none of the patients had a medical history of HNPCC or other hereditary cancers.

In conclusion, although SEOC is a rare phenomenon, it is necessary to separate this kind of malignancy from a metastatic disease. Molecular biomarkers are anticipated in order to identify the characteristics and underlying pathogenesis of SEOCs.

Statement of Ethics

The authors have no ethical conflicts to disclose.

Disclosure Statement

The authors have no conflicts of interest to declare.

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Table 1. Characteristics of the three synchronous ovarian and endometrial cancers

Age, years	Date of surgery	Histological sub-type of EC	Histological sub-type of OC	Grade of EC	Grade of OC	Stage of EC	Stage of OC	Survival, months	Recurrence-free survival, months
46	May 2014	Endometrioid	Endometrioid	1	1	Ib	Ib	31+	31+
54	March 2014	Endometrioid	Endometrioid	1	1	Ia	Ia	33+	33+
78	July 2014	Endometrioid	Endometrioid	1	1	Ia	Ia	29+	29+

EC, endometrial cancer; OC, ovarian cancer.