CASE REPORT

Bilateral malignant mixed serous adenocarcinoma and malignant transitional cell carcinoma of the ovaries: An extremely rare neoplasm

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(Received: April 8, 2015; Accepted: June 3, 2015)

Abstract: Mixed epithelial ovarian carcinomas are extremely rare and comprise less than 4% of all malignant ovarian tumors. We report a 61-year-old postmenopausal woman with bilateral adnexal masses. In the postoperative histopathological evaluation, mixed epithelial carcinoma with areas of disseminated serous adenocarcinoma and less prevalent areas of malignant transitional cell carcinoma was observed. Up-to-date, there have been only two cases with mixed serous adenocarcinoma and malignant transitional cell carcinoma reported in the English literature, and our case is the first case with bilateral tumors.

Keywords: mixed carcinoma, serous adenocarcinoma, malignant transitional cell carcinoma

Introduction

Epithelial carcinomas are the most common malignant tumors of the ovaries, and they are generally pure in histopathology. Presence of two or more epithelial subtypes in the same tumor tissue is called “mixed epithelial ovarian carcinoma”. Mixed epithelial ovarian carcinomas are extremely rare and comprise less than 4% of all malignant ovarian tumors [1]. The most common combinations are simultaneous appearance of serous–endometrioid, serous–transitional cell, and endometrioid–clear cell carcinoma [2].

Up-to-date, there have been only two cases of mixed serous adenocarcinoma and malignant transitional cell carcinoma reported in the English literature, and our case is the first bilateral case in the literature [2, 3].

Case Report

A 61-year-old postmenopausal woman applied to our clinic with groin pain ongoing for 3 months. Bilateral ovaries were palpable and had irregular surfaces in the pelvic examination. The transvaginal ultrasonogram (TV-USG) revealed a 33 × 35 mm and a 38 × 35 mm multiloculated cystic mass with solid areas in the right ovary and left ovary, respectively. Bilateral pelvic masses were observed by computed tomography (CT), whereas no lymphadenopathies were detected. While the routine hemogram and biochemical parameters were in normal ranges, Ca 125 was found extremely high (1326 IU/mL). Laparotomy was performed with the prediagnosis of a malignant ovarian tumor. Approximately 100 cc of ascites was observed intraoperatively and was sampled for cytological evaluation. A tumoral implant with 2-cm diameter was detected on the omentum, whereas other peritoneal surfaces were macroscopically normal. Bilateral salpingo ooforectomy was performed in the first place. As the frozen section revealed malignant tumor, total abdominal hysterectomy with infracolic omentectomy and pelvic lymph node dissection were performed for surgical staging. No paraaortic lymph node was palpated. Macroscopically, masses with irregular surfaces with 3.5 cm- and 4 cm-diameters in the right and left ovaries, respectively, were observed. In the sectioning, cystic areas with grayish solid parts
were detected. The tumor invaded the surfaces of both ovaries and extended through left uterine tube together with an implant on the omentum. Microscopically, disseminated areas of serous adenocarcinoma (85%) with less prevalent areas of malignant transitional cell carcinoma (15%) were detected in both ovaries, and bilateral mixed malignant epithelial ovarian tumor (high-grade serous adenocarcinoma, and high-grade transitional cell carcinoma) was diagnosed (Figs 1 and 2). In the immunohistochemical analysis, Wilms tumor protein-1 (WT-1) was mildly positive in both histopathological components. Tumor cells were present in the sample taken for cytology, and metastasis was detected on the omentum. Pelvic lymph nodes were free of tumor. The patient was referred to the medical oncology, and adjuvant chemotherapy was planned.

Discussion

Epithelial ovarian tumors are the most common ovarian neoplasms and have subtypes of serous, endometrioid, mucinous, transitional cell, and clear cell. Malignant epithelial tumors of the ovary, which are composed of one histopathological type, are generally pure; however, more than one subtype may be observed in the same tumor which is called “mixed epithelial ovarian carcinoma” [2]. Although there is no term as “mixed carcinoma” in the latest classification of epithelial ovarian tumors which was agreed by World Health Organization (WHO) in 2014, neoplasms containing the minor component more than 10% were named as mixed carcinomas in previous classifications [4]. Even the new classification of WHO recommends to specify all morphologic subtypes in diagnosis even though they are represented less than 10% [5]. The previous “mixed serous-endometrioid carcinoma”, and “mixed serous-clear cell carcinoma” are now called “high-grade serous carcinoma with pseudoendometrioid areas” and “high-grade serous carcinoma with cytoplasmic clearing areas”, respectively.

In the majority of cases with the diagnosis of malignant mixed epithelial tumor, combinations of serous–endometrioid, serous–transitional cell, and endometrioid–clear cell carcinoma have been observed. Clinical behavior of mixed epithelial ovarian carcinomas gener
ally differs according to the prominent component in the tumor [3]. In our case, the clinical behavior resembled that of pure serous adenocarcinoma which was the dominant component, and the metastasis on the omentum was metastatic serous carcinoma.

Malignant transitional cell carcinomas are rare forms of invasive epithelial ovarian cancers, and pure forms comprise only 1% of ovarian surface epithelial cancers [6]. Transitional cell carcinomas are mostly pure, and only two cases of mixed epithelial ovarian tumor with malignant transitional cell component have been reported in the English literature [2, 3]. Our case is the first malignant mixed epithelial tumor case with malignant transitional cell tumor component in both ovaries.

The distinction between intermediate high-grade transitional cell carcinoma, high-grade serous carcinoma, and undifferentiated carcinoma is crucial. In transitional cell carcinoma, undulating thick bands with different histologic patterns including insular, trabecular, or undifferentiated components may be observed. Papillae of transitional cell carcinoma are generally broad whereas they are fine-shaped in serous carcinoma [3]. Immunohistochemical parameters may be helpful for differential diagnosis. Transitional cell carcinomas are positive for all serous immune markers such as CK7, CA125, and WT-1 and negative for all urothelial markers such as uroplakin, thrombomodulin, and CK 20 [3]. Our case was also positive for WT-1 in both serous and transitional cell carcinoma components.

Conclusions
In conclusion, mixed epithelial tumors are rare, and owing to this, they may lead to a diagnostic dilemma. Several histopathological sections should be evaluated for the exact diagnosis of mixed carcinomas in ovarian neoplasms.

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Funding sources: None.

Authors’ contribution: Concept, Design, Analysis and/or Interpretation, Literature Search and Writing: OO; Supervision and Resource: MES; Materials: ES, EO; Critical Reviews: CRA. The paper has been checked over and approved by all authors.

Conflict of interest: The authors do not have a conflict of interest.

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