A case of bilateral ovarian synchronous tumors (left ovarian serous papillary adenocarcinoma and right ovarian malignant mixed Müllerian tumor)

M.J. Song[1], C.W. Lee[1], K.J. Seo[2], J.A. Kim[2], J.S. Park[1], S.Y. Hur[1]

[1]Department of Obstetrics and Gynecology, School of Medicine, Catholic University, Seoul St. Mary's Hospital, Seoul
[2]Department of Pathology, School of Medicine, Catholic University, Bucheon St. Mary's Hospital, Bucheon, Gyeonggi-Do (Korea)

Summary

Synchronous bilateral ovarian cancer is extremely rare and there is no established guideline for management. A case of a 58-year-old multiparous woman with bilateral ovarian synchronous malignant tumors is presented. The clinical consideration and treatment of related cases are discussed.

Key words: Ovarian synchronous tumors; Serous papillary adenocarcinoma; Malignant mixed Müllerian tumor.

Introduction

Ovarian cancer involving both ovaries is common in advanced stage disease; however, the histopathologies are usually the same. In a case series with a small number of patients, synchronous ovarian and endometrial cancers were reported to occur in 1.4%-3.8% of female genital malignancies [1], but synchronous bilateral ovarian cancer is extremely rare. We report herein a case of synchronous bilateral ovarian cancer with a malignant mixed Müllerian tumor (MMMT) involving the right ovary and a serous papillary adenocarcinoma involving the left ovary.

Case Report

A 58-year-old multiparous woman was referred to our hospital with lower abdominal discomfort and a palpable mass. She was had been menopausal for three years. Physical and bimanual pelvic examination revealed a large mass occupying the entire pelvic cavity. A computed tomography (CT) scan of the pelvis revealed a 12 x 15 x 11 cm poorly demarcated, lobulated mass, likely originating from the ovaries bilaterally (Figure 1). The mass extended to the pelvic side wall and occupied the entire cul-de-sac, with possible direct invasion of adjacent organs, especially the serosa of the sigmoid colon. There were no other abnormal findings on the CT scan, including retroperitoneal lymphadenopathy. To exclude sigmoidal invasion, a sigmoidoscopy was performed, which was normal. CA125 was markedly elevated upto 1,059 U/ml. After preoperative evaluation, exploratory laparotomy was performed. Approximately 100 ml of red-colored, serous fluid was noted in the pelvic cavity and collected for cytologic evaluation, which revealed an adenocarcinoma one week later. The left ovary was enlarged (15 x 8 x 8 cm), with a 4 cm serous cyst and multiple, white, hard, cystic masses < 1 cm in diameter. The right ovary with the cystic mass measured 9 x 5 x 5 cm in size and occupied the entire cul-de-sac. The right ovary was sent to the Department of Histopathology for frozen section, which was reported as a malignancy. The pelvic lymph nodes were not enlarged. Multiple nodular masses < 1 cm in diameter were noted on the surface of the diaphragm and the serosa of the small intestine. The large intestine was densely adherent to the peritoneum and both adnexa. The liver, spleen, stomach, and omentum were grossly free of adhesions. Primary cytoreductive surgery including total extrafascial hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic and paraaortic lymph node dissection, infracolic omentectomy, and multiple biopsies was done.

Final pathologic examination demonstrated a moderately differentiated serous papillary adenocarcinoma (Figure 2-1) of the left ovary and a malignant mixed Müllerian tumor (MMMT) of the right ovary (Figure 2-2). Immunohistochemical staining was performed for further evaluation of the right ovary, and was positive for cytokeratin (Figure 2-3) and vimentin (Figure 2-4), negative for actin, desmin, and CD34, and weakly positive for S-100 protein. Therefore, the tumor of the right ovary was indirectly shown to be a carcinosarcoma. The uterus had atrophic endometrium and chronic cervicitis. Three weeks later the CA125 had normalized (33.53 U/ml). According to the surgical findings and pathologic results, the final diagnosis was a FIGO Stage IIIB, serous papillary adenocarcinoma of the left ovary and a FIGO Stage IIB, MMMT of the right ovary. Postoperatively, the patient received five courses of chemotherapy consisting of paclitaxel (175 mg/m^2) and carboplatin (500 mg-600 mg, according to an area under the curve [AUC)] = 4). Pelvic CT after completion of the fifth course of chemotherapy revealed a relapse. A secondary debulking procedure and permanent pathologic finding was consistent with a MMMT, and then the patient received two courses of chemotherapy with belotecan (0.5 mg/m^2) as a second-line chemotherapy. Nevertheless she died of the disease seven months after the primary treatment.

Discussion

A synchronous tumor is defined as two or more primary tumors diagnosed simultaneously in a patient. In gynecologic malignancies, synchronous cancers involving the endometrium and ovary are infrequent, but a well recognized event [2], while synchronous tumors involving the bilateral ovaries are extremely rare and not well established. We managed a patient with bilateral ovarian tumors, who not only had synchronous malignancies, but

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Fig. 1

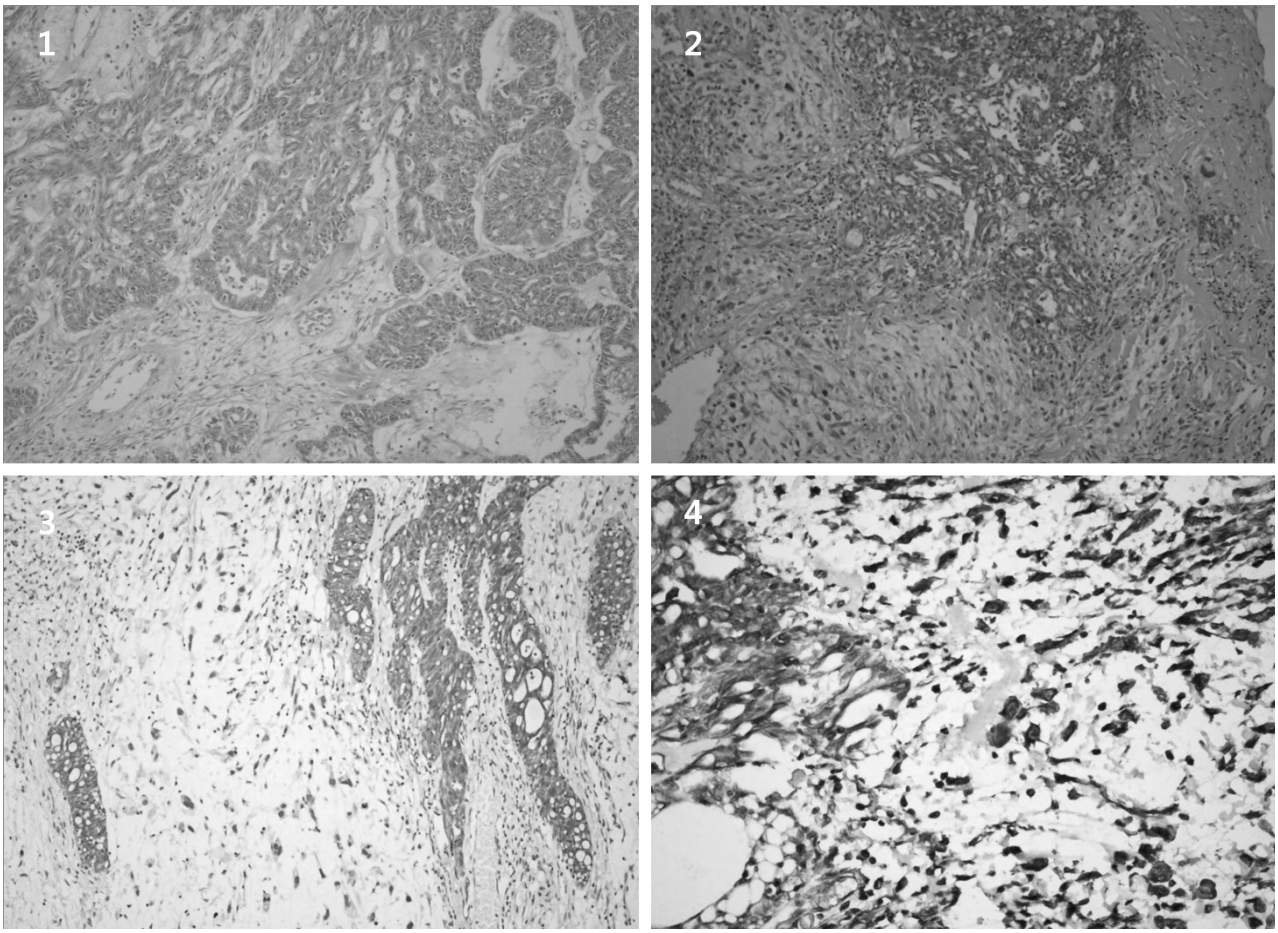

Fig. 2

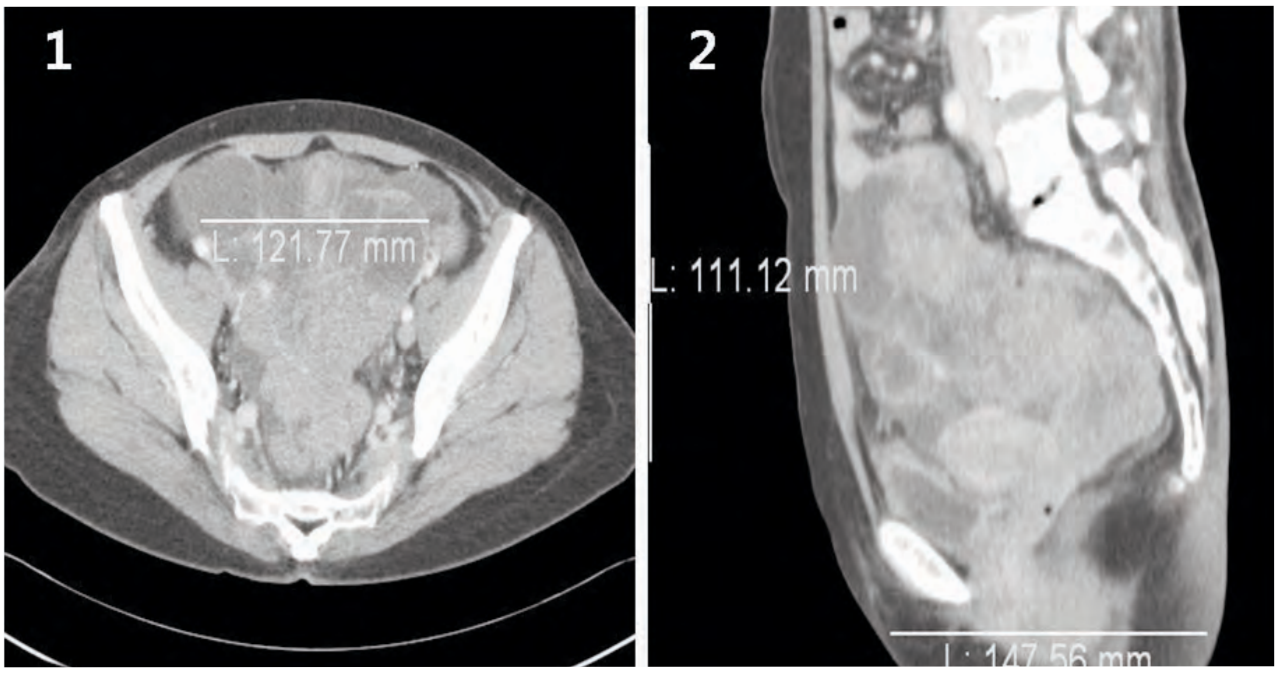

Figure 1. — Pelvic CT scan showed that the mass extended to the pelvic side wall (Figure 1-1) and occupied the entire cul-de sac (Figure 1-2).

Figure 2. — Left ovary, moderately differentiated serous papillary adenocarcinoma (H&E x 100) (Figure 2-1), and right ovary, malignant mixed Müllerian tumor (H&E x100) (Figure 2-2). Immunohistochemical staining of the right ovary. The result was positive for cytokeratin (Figure 2-3) and vimentin (Figure 2-4).

with different pathologies (serous papillary adenocarcinoma of the left ovary and MMMT of the right ovary). MMMTs are very rare tumors and usually occur in the uterus. MMMTs represent < 1% of ovarian malignancies. In 1864, Virchow classified neoplasms with carcinomatous and sarcomatous components as carcinosacomas [3]. The origin of MMMTs are not clear, but they are presumably derived from pluripotent mesenchymal cells of the coelomic epithelium which differentiate into malignant epithelial and stromal elements [4-6]. Current evidence suggests that MMMTs usually arise from pre-existing carcinomas [7-10], and these tumors are regarded as dedifferentiated carcinomas of the ovary [9]. MMMTs are most prevalent in postmenopausal women, with a median age of 60 years [8]. Pelvic irradiation is presumed to play an important role in the pathogenesis of uterine MMMTs, but is not associated with ovarian MMMTs. The clinical presentation of ovarian MMMTs is similar to epithelial ovarian cancers. Unlike uterine MMMTs, which often metastasize to the lungs, the spread of ovarian MMMT is similar to that of primary epithelial ovarian carcinomas, which exhibit serosal and peritoneal seeding as early sites of metastasis [5, 11]. The tumor usually involves the ovary unilaterally; bilateral tumors occur in only 10% of the cases [12]. MMMTs arising from the ovary are staged surgically according to the criteria of the International Federation of Gynecology and Obstetrics [13]. Significant prognostic factors are stage, and for women with Stage III or IV disease, the feasibility of cytoreductive surgery [14]. Similarities in clinical presentation and tumor origin indicate that effective therapies for primary ovarian carcinomas should also be effective against ovarian MMMTs [9]. As in epithelial ovarian cancer, the initial therapeutic approach for patients with ovarian MMMT is meticulous debulking, including total hysterectomy, bilateral salpingo-oophorectomy, infracolic omentectomy, and pelvic and paraaortic lymph node dissection. However, surgery alone is seldom curative [3]. These tumors have highly malignant behavior, and adjuvant chemotherapy following surgery is usually recommended. There is little consensus on the optimal treatment regimen and duration of MMMTs due to the low incidence. A variety of chemotherapy regimens, including adjuvant adriamycin, dacarbazine, and cisplatin, have been reported to have response rates ranging from 27%-100% [15-18]. Furthermore, According to the chemotherapeutic approach mentioned above, a platinum-based taxane combination chemotherapy may be feasible in the case of synchronous epithelial ovarian cancer and MMMT of the ovary. However, despite optimal and aggressive treatment, including primary debulking surgery followed by chemotherapy, 70% of such patients die within one year of diagnosis [14, 16, 19]. The median survival of patients with MMMT of the ovary has been estimated to be 8-16 months [14, 19]. Synchrouous ovarian malignancies are extremely rare. Clearly, additional research about the etiologic factors, mode of treatment, and prognosis of synchronous ovarian tumors is needed.

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Address reprint requests to:
S.Y. HUR, M.D.
Department of Obstetrics and Gynecology
The Catholic Medical Center
The Catholic University of Korea
505 Banpo-dong, Seocho-gu, Seoul 137-040 (Korea)
e-mail: hursy@catholic.ac.kr