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Metastasis of uterine carcinosarcoma to the accessory spleen: an unusual recurrence pattern

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Summary

Patients with uterine carcinosarcoma have poor prognoses, and the disease frequently metastasizes to the abdominal cavity. Uterine tumor metastasis to an accessory spleen has never been reported previously. The authors report a 68-year-old Japanese woman with uterine carcinosarcoma recurring in an accessory spleen 12 years after initial hysterectomy. This solitary recurrent lesion was successfully resected and it comprised metastatic tumor cells that closely resembled a primary uterine carcinosarcoma. This case demonstrates that uterine carcinosarcoma is able to metastasize to an accessory spleen and this is the rare case of a long-term survival of a uterine carcinosarcoma patient. The authors propose that complete surgical resection of the recurrent lesion will contribute beneficially to patient survival.

Key words: Accessory spleen; Uterine carcinosarcoma; Recurrence.

Introduction

Uterine carcinosarcoma is a rare and highly aggressive malignancy, accounting for between 1% and 10% of all uterine cancer cases [1]. Prognoses for patients with uterine carcinosarcoma are poor, and local recurrence and distant metastasis, especially to the abdomen, pelvis, and lungs, have been documented [2, 3]. Metastasis of a uterine tumor to an accessory spleen, however, has never been reported in the literature. Herein, the authors report a patient with previously resected uterine carcinosarcoma presenting with a metastasis in an accessory spleen in the omentum and subsequent resection 12 years after the initial hysterectomy.

Case Report

The authors present a 68-year-old Japanese woman (gravida 3, para 2, menopause at 45 years of age) who underwent surgery for cancer of the right breast at 45 years of age and received post-operative radiation and hormone therapy. No breast cancer recurrence was observed. She consulted a doctor for genital bleeding when she was 56 years of age, and a 30-mm tumor was detected in the uterine corpus by magnetic resonance imaging. Endometrial biopsy revealed that the uterine malignancy was suspected to be a carcinosarcoma. No serum tumor markers levels, including those of CA19-9, were elevated. The patient underwent a hysterectomy, bilateral salpingo-oophorectomy, and pelvic lymph node dissection. The final pathological diagnosis was homologous uterine corpus carcinosarcoma, which invaded more than half of the myometrium without evidence of lymph node metastasis. The 2008 International Federation of Gynecology and Obstetrics (FIGO) surgical staging system was used to classify the tumor as a Stage IB malignancy, with malignant cells detected in ascitic cytology specimens. Three years after the surgery, two nodules in the omentum and peritoneum at the Douglas's fossa were detected by abdominal ultrasonography and were completely resected. The nodes were pathologically diagnosed as recurrences of the original uterine carcinosarcoma. The patient refused subse-

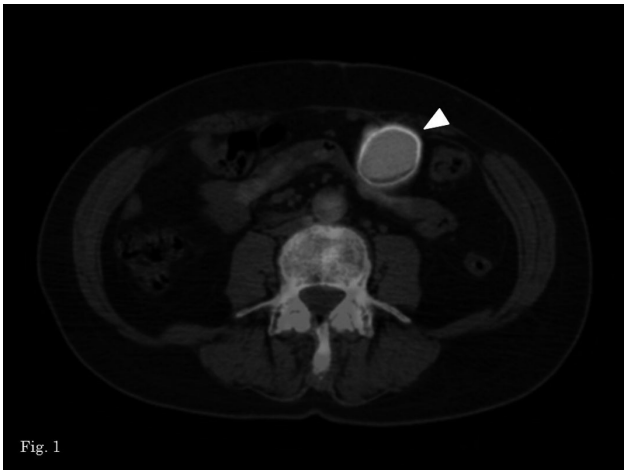

Figure 1. — Fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET/CT) performed 12 years after the initial surgery shows a 35-mm tumor with enhanced FDG uptake (SUV_{max} of 15) on the front side of the abdominal cavity in the horizontal portion of the duodenum (indicated by an arrow). There are no other lesions or tumor recurrences throughout the body.

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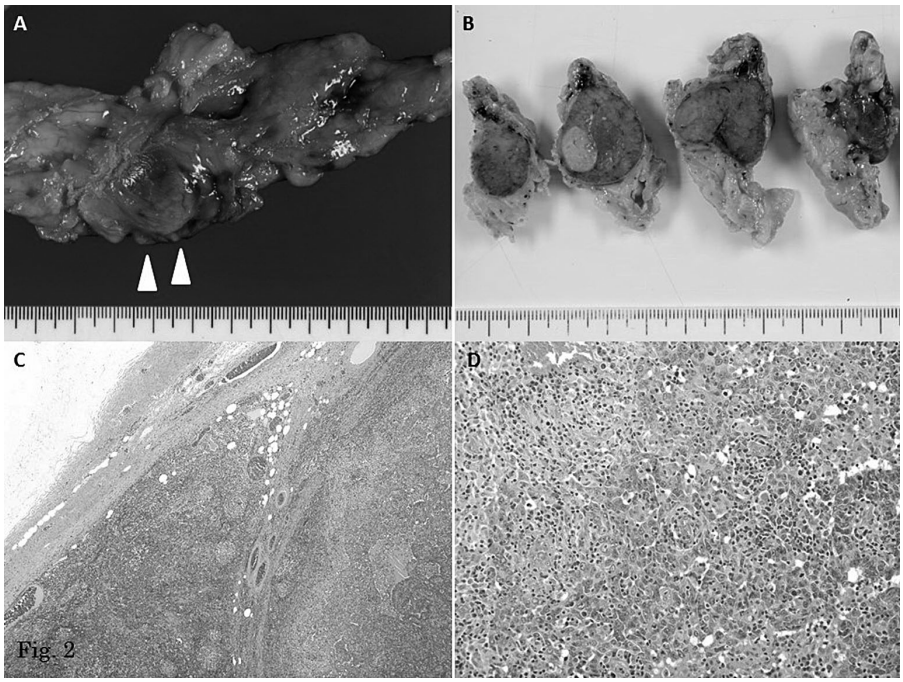

Figure 2. — (A) The resected accessory spleen in the omentum is shown. (B) Cross-sections of the fixed specimen show the 35-mm dark red-colored nodule with a fibrous capsule in the omentum. (C) The metastatic lesion is observed as a film-covered mass with a structure characteristic of splenic tissue and is composed of red pulp and white pulp, under low-power magnification (Hematoxylin and Eosin staining). (D) The adenocarcinoma cells form papillary structures and solid nests with small amounts of sarcomatous elements as observed under high-power magnification.

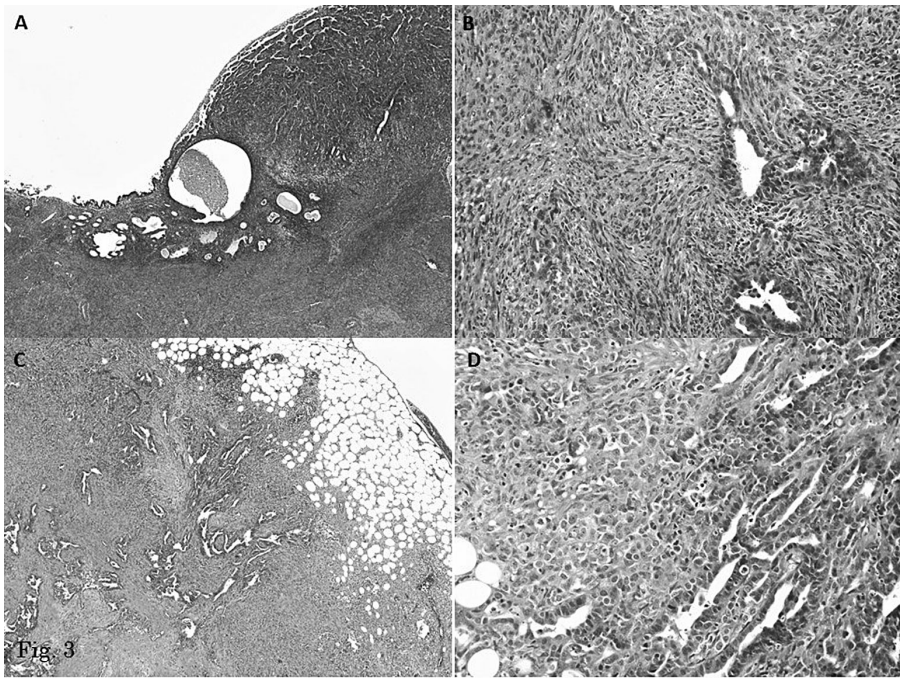

Figure 3. — Uterine carcinosarcoma from the initial hysterectomy under low-power magnification (A) and high-power magnification (B) is shown. The peritoneal metastasis eight years after the initial operation under low-power magnification (C) and high-power magnification (D) is shown. All images are after Hematoxylin and Eosin staining, and the images highlight the histological similarity between the tumors.

quent therapy after one cycle of adjuvant chemotherapy. Four years after the initial surgery, a ten-mm left abdominal mass was detected on abdominal ultrasonography and computed tomography (CT). During the 8 years of follow-up, i.e., 12 years after the initial surgery, no serum CA19-9 level elevation (above 53 U/ml) was detected. However, gradual growth of the abdominal mass from ten to 32 mm in diameter was observed on ultrasonography during the semi-annual follow-up. Fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET/CT) showed significant FDG uptake in the mass (Figure 1); therefore, the lesion was diagnosed to be malignant. The authors decided to perform a complete resection of the mass without colon resection because of the clear surgical margins around the lesion.

On macroscopic examination, a 35-mm dark red-colored nodule with a fibrous capsule was observed in the omentum (Figure 2A). Upon cross-sectioning the capsulated mass, a well-defined white and tan nodular area was observed (Figure 2B). The dark-colored mass was identified as ectopic splenic tissue (Figure 2C).

In addition, an adenocarcinoma with very small amounts of sarcomatous components was observed in the white and tan nodular area (Figure 2D). The morphology of these tumor cells closely resembled that of the previously resected uterine carcinosarcoma (Figure 3A–D), and immunostaining revealed that the tumor cells were positive for PAX8 (PAX8R1, 1:100), estrogen receptor (ER; 1D5, 1:100), and p53 (DO-7, 1:50). The tumors were diagnosed as a metastasis of the primary uterine carcinosarcoma to an accessory spleen in the omentum. Immunohistochemical analysis supported this observation.

Discussion

The authors report for the first time a rare case of uterine carcinosarcoma with peritoneal dissemination of carcinosarcoma that metastasized to an accessory spleen. Moreover, this case demonstrated a slowly progressing metastasis and was associated with long-term survival.

The authors considered two possible origins for the observed malignancy in the accessory spleen of the patient. First, they hypothesized that the uterine carcinosarcoma could have metastasized to the accessory spleen. Carcinosarcoma often metastasizes to the central pelvis, pelvic wall, abdomen, and lungs [4]. The accessory spleen is a common congenital anomaly caused by division failure in the spleen during embryonic development and has been detected in 10–30% of autopsy cases [5] and 15.6% of abdominal CT scans [6]. Accessory spleens may be observed in any part of the abdominal cavity, but the omentum is one of the most common sites where this occurs [5]. There are few reports regarding the frequencies of primary or metastatic tumors in accessory spleens, but they are suspected to be rare. Examples include a case of primary adenocarcinoma [7] as well as two cases of serous cystic neoplasm, which is a benign tumor, occurring in intrapancreatic accessory spleens [8, 9]. Furthermore, Mihmanli *et al.* reported a case of ovarian adenocarcinoma metastasizing to intrapancreatic accessory spleens [10]. On the other hand, to the best of the present authors' knowledge, metastasis to an accessory spleen from uterine carcinosarcoma has never been reported in the literature.

The authors considered a second possibility that the accessory spleen malignancy was an extremely rare primary carcinoma that developed from epithelial inclusions in the accessory spleen itself. However, the close morphological similarities between the tumor and the previously resected primary uterine carcinosarcoma, together with the results of immunohistochemical staining, in particular, the positive staining for PAX8, suggested that the accessory spleen malignancy was a metastatic tumor. In the present case, the authors found parenchymal vascular involvement of the accessory spleen mass and did not detect disseminated tumor cells outside of the fibrous capsule. These findings implicated blood-borne metastasis of the primary carcinosarcoma in the development of the secondary accessory spleen tumor. Furthermore, the patient achieved outstanding long-term survival, surviving eight years after the first recurrence in the peritoneum and 12 years after the initial uterine surgery. This was unexpected because uterine carcinosarcoma is often aggressive biologically, and patients have poor prognoses. The five-year survival rates for patients with the disease are 59%, 22%, and 9% for Stages I–II, III, and IV, respectively, and relapse rate is strongly related to Stage, with 38% and 85% relapse for patients with Stage I and IV disease, respectively [2, 3]. Typically, relapse occurs at short-term, and prognosis after recurrence is poor. Reportedly, 85% of uterine carcinosarcoma patients experience relapse within three years of treatment [11], and the five-year survival rate is only 4% in recurrent patients, with a median survival of six months [4]. On the other hand, 5% of uterine carcinosarcomas display no evidence of recurrence [4, 11]. Some cases are suggested to progress slowly, leading to long-term survival. Although there has been no randomized controlled trial proving the effectiveness of cytoreductive surgery for recurrent uterine carcinosarcoma, some retrospective studies suggest that this may be effective in improving patient survival. Indeed, Giuntoli *et al.* reported that cytoreductive surgery contributed to survival prolongation in patients with local uterine leiomyosarcoma recurrence [12]. Furthermore, Barney *et al.* suggested that a combination of perioperative radiation therapy and surgery for locally advanced and recurrent uterine carcinosarcoma could lead to long-term survival [13]. Shamseddine *et al.* reported a case of carcinosarcoma with lung metastasis treated with systemic chemotherapy that resulted in no evidence of disease after more than five years [14]. Even with recurrence at an extremely rare site, complete resection of a localized recurrent mass is expected to result in significant survival benefit to a patient.

Conclusion

The authors report a case of uterine carcinosarcoma that metastasized to the accessory spleen 12 years after initial hysterectomy. This highlights the fact that some cases of the disease progress slowly and may be associated with long-term patient survival. The authors suggest that complete resection or control of recurrent lesions would contribute to long-term survival of uterine carcinosarcoma patients.

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