A rare case of carcinosarcoma of the fallopian tube presenting with torsion, rupture and hemoperitoneum

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Introduction
Carcinosarcomas, formerly malignant mixed Müllerian tumors (MMMTs), of the fallopian tube are extremely rare. From the world literature we have compiled and reviewed 80 cases of carcinosarcoma of the fallopian tube and present an additional case of a 57 year old Caucasian female diagnosed with stage IIIA heterologous carcinosarcoma with an unusual presentation displayed in Table S1.

The most common site of carcinosarcomas in the female genital tract is the endometrium, whereas carcinosarcomas arising in the fallopian tube are so rare that it has been recommended that each case be reported [1]. These highly aggressive tumors are composed of both epithelial and stromal elements. They usually present in the fifth to sixth decades in postmenopausal women. Preoperative imaging diagnosis of fallopian tube malignancy is rare because of features similar to those of hydrosalpinx, tuboovarian abscess, and ovarian neoplasms. The most common presenting symptom is abdominal pain followed by atypical vaginal bleeding and abdominal distension [2]. We were unable to find any other previously reported cases presenting with torsion, rupture and hemoperitoneum.

Case report
A 57 year old postmenopausal Gravida 3, Para 3 Caucasian female presented to the hospital on January 7, 2011 with severe intermittent lower abdominal pain of several days duration. Physical examination revealed tenderness and rebound in the suprapubic region. Adequate bowel sounds were noted and the remainder of the physical exam was negative. A CT of the abdomen and pelvis with contrast revealed complex ascites suggestive of hemoperitoneum. A 10.0 × 6.5 cm complex pelvic mass was seen anterior to the uterine fundus. The patient underwent exploratory laparotomy and approximately 800 ml of blood was identified. A large tumor of the distal left fallopian tube, had undergone torsion and rupture with subsequent bleeding. Tumor involvement of the cul-de-sac and right ovary required total abdominal hysterectomy, bilateral salpingo-oophorectomy, omentectomy, tumor reductive surgery, and pelvic lymph node dissections. There was no gross residual disease.

Pathologic diagnosis revealed a heterologous carcinosarcoma arising from the left fallopian tube. Gross description: The distal left fallopian tube contained a congested, edematous, and hemorrhagic segment with tumor measuring 10 × 10 × 5 cm. Tumor fragments were attached to the cul-de-sac and posterior cervix measuring 3 × 3 × 1.5 cm. Histologic description: The tumor consisted mostly of an epithelial component with serous papillary features and an undifferentiated stromal component. A prominent component of malignant cartilage was also identified (Fig. 1). Features were consistent with origin from the left distal fallopian tube with associated torsion and hemorrhage. Microscopically, the omentum, pelvic peritoneum, and right ovary contained metastatic carcinosarcoma. The right oviduct, left ovary, uterus and bilateral pelvic lymph nodes were negative for malignancy. Fluid cytology was positive for malignant cells. Pathologic stage was IIIA.

Immunohistochemical analysis revealed the epithelial component to be positive for pankeratin. Both the stromal and epithelial components were positive for vimentin. The epithelial and stromal components were both focally positive for desmin and smooth-muscle actin. In regards to CD 10 expression, the stromal component was strongly positive (Fig. 2A), while the epithelial component was positive (Fig. 2B).

The patient received combination chemotherapy consisting of doxorubicin, 45 mg/ m²; cisplatin, 50 mg/m²; and paclitaxel, 160 mg/m² at three week intervals for six cycles. Pre-operative CA-125 level was elevated at 58.7 U/mL, which decreased to 21.3 U/mL one month after surgery and to 7.1 U/mL following her last...
No evidence of disease was noted on follow-up imaging or physical examination 8 months after surgical resection.

Discussion

Eighty cases of carcinosarcoma of the fallopian tube have been previously reported in the literature. Our compilation of these cases, including our own, is summarized in Table S1. Our review of these cases provides similar conclusions regarding usual presenting symptoms, tumor nature, metastasis, and treatments as previously reported [2]. The average age was 59.7 years and the most common presenting symptom was abdominal pain followed by atypical bleeding. With our additional case, there have been 34 and 47 reported homologous and heterologous cases respectively. Among the heterologous cases, the most common sarcomatous component was chondrosarcoma (70%), followed by rhabdomyosarcoma (28%), and osteosarcoma (6%). All of the cases that had a mixture of sarcomatous components contained chondrosarcoma. The most common site of metastasis, besides nonspecifically within the pelvis, was to the ovaries and the omentum. Cyclophosphamide was the most common agent used in combination chemotherapy followed by doxorubicin and cisplatin.

Within the female genital tract the fallopian tube is a rare site for primary carcinoma, and is also the least common location for carcinosarcomas. Previous reports indicate fallopian tubes as the origin of less than 4% of all gynecologic carcinosarcomas [1]. It has been suggested that immunohistochemical staining of the carcinomatous and sarcomatous elements to both cytokeratin and vimentin or SMA is the gold standard for diagnosis [3]. The expression of CD 10 in the present case is consistent with previous reports that propose it as a characteristic of Müllerian system derived neoplastic mesenchymal cells [4].

Reports on imaging carcinosarcomas of the fallopian tube are scarce, however, it was reported that compared to carcinoma of the fallopian tube, carcinosarcoma had a heterogeneous signal on MR compared to a homogenous signal in carcinoma [5]. This could suggest that MR should be used over CT to not only localize the origin of a pelvic mass but also to determine certain imaging characteristics that may assist in the preoperative diagnosis of a fallopian tube carcinosarcoma. Follow-up PET/CT imaging, in combination with CA-125 and physical examination may be superior to CT alone to evaluate recurrence of fallopian tube cancer and may prevent the need for invasive surgical assessment [6]. Carcinosarcoma of the fallopian tube may rarely present as a surgical emergency, with torsion and rupture leading to hemoperitoneum. Because of the uncommon occurrence of fallopian tube carcinosarcoma, reporting cases as they are encountered and providing follow-up details will allow for more understanding in regards to diagnostic and treatment efficacy.

Conflict of interest statement

The authors have no conflicts of interest to state.

Appendix A. Supplementary data

Supplementary data to this article can be found online at doi:10.1016/j.gynor.2011.11.001.

References