CASE REPORT
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Metastatic spread of mucinous cystadenocarcinoma of the ovaries into abdominal wall

Dragan Žikić, Aljoša Mandić, Marina Popović, Katarina Koprivšek, Milana Panjković

Institute of Oncology Sremska Kamenica, Serbia & Montenegro; Address correspondence to: Dr. Dragan Žikić, Institute of Oncology Sremska Kamenica, Institutski put 4, 21204 Sremska Kamenica, Serbia & Montenegro, E-mail: aljosa.m@eunet.yu; The manuscript was received: 08.07.2005, Provisionally acepted: 11.07.2005, Accepted for publication: 15.07.2005

ABSTRACT

Epithelial ovarian cancer belongs to the most common and most deadly of all types of ovarian carcinomas. Ovarian cancer affects women in the age group 65 years and older more frequently than younger women. Approximately 75% of cases will have spread beyond the ovaries at the time of diagnosis. Twenty-two year old patient was treated at the Institute of Oncology Sremska Kamenica, in the period from 1998 until 2000. In 1993, she underwent left salphingo-oopherectomy; histopathological finding was mucinous cystadenoma of the ovaries. In 1994, mucinous papillary cystadenoma with borderline malignancy confirmed by histopathological findings was found after abdominal hysterectomy with right salpingo-oopherectomy and total omentectomy. The patient was well until 1998 when she palpated a tumor mass in the front abdominal wall with pain in that region. Tumor was extirpated and final histopathological finding was mucinous adenocarcinoma in fibrous tissue. The patient received with chemotherapy (carboplatin and cyclophosphamide) and external-beam radiotherapy. Recurrence free survival rate was 20 months but in April 2000, patient came back with recurrence of the disease. It was the same spread into abdominal wall. Rectus abdominis muscle was resected and plastic surgery of abdominal wall was performed. After operation patient received second line chemotherapy according to the same protocol. However, during the treatment the disease spread into abdominal cavity and affected small intestine and liver.

KEY WORDS: *Cystadenocarcinoma, Mucinous; Ovarian Neoplasms; Neoplasm Metastasis; Abdominal Wall*

INTRODUCTION

In the past decade, the number of ovarian cancers has increased 30% and the number of ovarian cancer deaths has increased 18% (1). In 1990, ovarian cancer was the fourth most common cancer in women and the most common gynecological cancer, with 29,353 new cases in the European Union. It was the fifth most common cause of cancer death (22,166 deaths)(2). In 1999, ovarian cancer was the second most frequent gynecological cancer in Western Europe, causing around 82,000 deaths (3). Morbidity and mortality of ovarian cancer shows an average increase in the Republic of Serbia, which points to the importance of early diagnostic procedures and looking for the best options for screening program in women population (4,5). Ovarian cancer is primarily a disease of postmenopausal women, the highest number of cases being concentrated in the age group from 50 to 70 years (6,7). Because of the position of the ovaries deep within the abdomen ovarian cancer is often asymptomatic in its early stages, most patients have a widespread disease at the time of diagnosis (8). Approximately in 75% of cases will have spread beyond the ovaries at the time of diagnosis (9). Surgery is required for a full diagnosis and also represents the main form of treatment for early-stage disease, which is confined to the ovaries. The purpose of surgery is to establish or confirm the suspected diagnosis; to surgically stage the patient with apparent early-stage disease; and in the event of advanced-stage disease, to remove as much tumor mass as possible. However, for patients who present with advanced stage III and IV disease, where the tumor has spread beyond the pelvic region into the abdominal cavity and/or distant sites, the initial surgical treatment is followed by chemotherapy. Ovarian tumors are sensitive to chemotherapy, and most stage III and IV patients receive chemotherapy to increase their survival and improve their quality of life (QoL) (9-12).

A CASE REPORT

A young 22-year old patient with ovarian epithelial cancer was treated at the Institute of Oncology Sremska Kamenica, from 1998 to 2000. Final histopathological finding was mucinous cystadenocarcinoma of the ovaries. International Federation of Obstetricians and Gynecologists (FIGO) classification was used for disease staging.

According to the gynecological anamnesis patient was virgin, her menarche occurred when she was 13 years old and menstrual cycles were orderly. No hereditary factors or any other risk factors for ovarian cancer were found in family anamnesis. She was operated in 1993 and left salphingo-oopherectomy was performed. Histopathological finding was mucinous cystadenoma of the ovaries. One year later (1994), there were some changes at the right ovary, which were found during the routine transvaginal ultrasonography control. There was not any clinical symptom and there was no data about serum level of CA125. Abdominal hysterectomy with right salpingo-oopherectomy and total omentectomy was performed. Final histopathological result was ovarian tumor: mucinous papillary cystadenocarcinoma with borderline malignancy. The patient was regularly checked up during next few years; she had no clinical symptoms of the disease and her Karnofsky score was 100. In 1998,

she palpated a tumor mass in the front abdominal wall with pain in that region. The whole tumor node was extirpated and final histopathological finding was mucinous adenocarcinoma in fibrous tissue. Cytological examination of the lavage of the abdominal cavity was without malignancy.

The patient received four cycles of chemotherapy according to the protocol: carboplatin (300mg/m^2) and cyclophosphamide (600mg/m^2) every three weeks. Side effects were controlled for hemopoietic system and function of liver and kidneys one week after therapy application and one week before next cycle of chemotherapy. During the first two cycles, she received external-beam radiotherapy, 30 Gy in 30 daily fractions. After six cycles of chemotherapy and radiotherapy patient felt well and had no clinical symptoms. Recurrence free survival rate was 20 months.

In April 2000, the patient came to the Institute complaining with pain and pressure in right side of the front abdominal wall and tumor, which was painful during clinical exam. Nuclear magnetic resonance was performed which confirmed tumor infiltration in the abdominal wall (Figure 1,2).

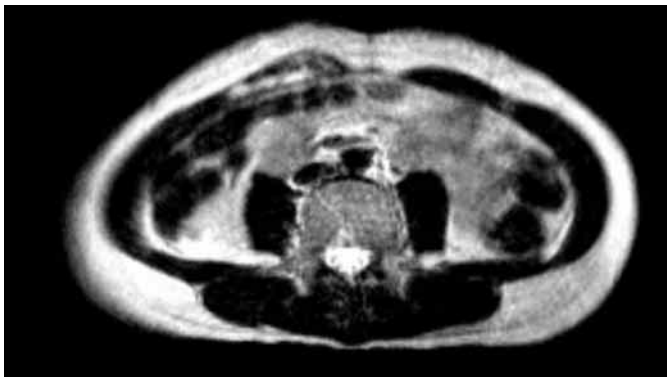

Figure 1. Transverse T2W spin echo image demonstrates heterogeneous, high signal intensity mass in the right rectus abdominis muscle, without distinctive borders to the surrounding structures of the anterior abdominal wall. There is no evidence of peritoneal based metastases

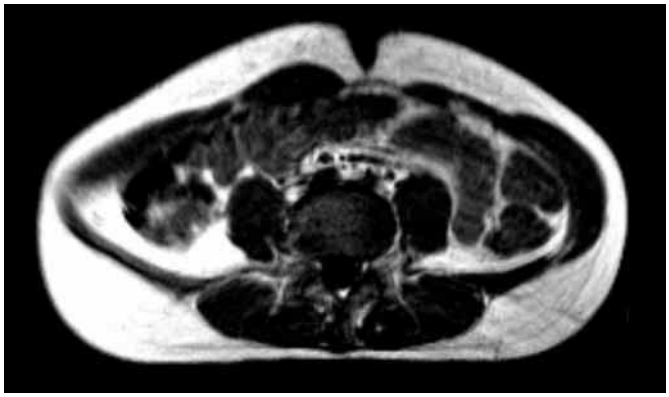

Figure 2. Transverse T1W spin echo image reveals only an enlargement of the rectus abdominis on the right side. The conspicuity of the tumor is reduced, due to the similar signal characteristics of both the tumor and adjacent muscle

Musculus rectus abdomini was resected and plastic surgery of abdominal wall was performed. There was no ascites and during operation two metastatic nodes less than 3 mm in diameter were found in small intestine. Material from the scarring tissue, serosal surface of the small intestine, part of the striate muscle, and the other structures of the anterior abdominal wall were sent for pathology examination. On the microscopic examination a tissue of adenocarcinoma was found in the structures of the anterior wall: fibrous, adipose tissue and striate muscle, as well as on the serosal surface and the wall of the small intestine without extending through the mucosa. Tumor tissue was composed of well-differentiated glandular structures with the small production of the mucin and the areas of necrosis.

The patient was indicated for second-line chemotherapy with carboplatin (300mg/m^2) and cyclophosphamide (600mg/m^2), six series, every three weeks. During the cycle 5, the patient experienced abdominal pain, obstipation, lost of appetite, fatigue, and anemia. Computer tomography was performed which showed widespread metastases in small intestine and liver.

The cycle 6 of chemotherapy was not administered and the patient received symptomatic therapy. She died in December 2000.

DISCUSSION

Ovarian cancer is one of the biggest problems in gynecologic oncology. Because of difficult to diagnose at an early stage most are diagnosed at an advanced stage. Early detection requires a reliable screening test. An optimal screening test has high sensitivity, specificity, and patient acceptance, and is easy to perform. The three screening techniques available at this time (pelvic examination, CA-125 level, and vaginal ultrasound) do not actually diagnose ovarian cancer but only suggest its presence.

As with many cancers, advancing age is the most significant risk factor for the development of ovarian cancer. Marchetti M et al. showed in that of 545 patients with epithelial ovarian cancer 49 were under 35 year old and mostly histopathological findings in that group of patients was borderline tumor and ovarian cancer in early-stage of the disease that increased 5-year survival rate. This showed that advancing age could be, besides as risk factor, important prognostic factor (13).

Pelvic masses found in women of reproductive and postmenopausal age must be evaluated preoperatively to determine the probability of malignancy. A pelvic mass in a woman of reproductive age may be a functional cyst, particularly if the mass is cystic, less than 6 to 8 centimeters in diameter, unilateral, and mobile. If all of these criteria are present, it is appropriate to reexamine the patient in four to six weeks. If the mass persists or has grown, exploratory laparotomy or laparoscopy is indicated. A woman with a solid or partially cystic mass, ascites, and/or an elevated CA-125 level should be operated on by a gynecologic oncologist or by a surgical team with the necessary skills to surgically stage or debulk the disease. All surgeons who attend women with suspected ovarian malignancy must understand importance of performing appropriate surgical staging and debulking of ovarian cancer. Ovarian cancer is a surgically staged disease. In apparent early-stage disease, complete surgical staging is critical for the selection of adjunctive therapy. In advanced-stage disease, the goal is primary cytoreduction (14).

A literature review showed that patients with optimal cytoreduction had median survival of 39 months compared with survival of only 17 months in patients with suboptimal surgery (15). However, results of a retrospective analysis of 349 patients with postoperative residual masses less than or equal to 1 centimeter suggest that patients who present with large-volume disease and achieve small-volume disease by surgical debulking have poorer outcomes than similar patients who present with small-volume disease (16). Standard postoperative therapy for advanced-stage ovarian cancer includes platinum-based chemotherapy with the substitution of paclitaxel for cyclophosphamide (12,17,18).

Ovarian cancer usually spreads via local spreading into the peritoneal cavity followed by attachment to the peritoneum, and via local invasion into the bowel and bladder. This kind of tumor rarely spreads out of abdominal cavity; in our case the main localization of metastatic spread was in abdominal wall for two times before tumor spread into the liver. The incidence of positive nodes at primary surgery has been reported as high as 24% in patients with stage I disease, 50% in patient with stage II disease, 74% in patients with stage III disease, and 73% in patients with stage IV disease (19).

Abdominal wall metastases of ovarian cancer are very rare but not impossible (20,21). They represent more or less 1% of human neoplasms in the adult. Abdominal wall neoplasm are less aggressive for compartmentalization of muscle layer and with a better prognosis because of their localization, and surgical opportunities of extensive resection (not less of 2 cm from tumor's macroscopic limits) allowed by modern prosthetic reconstruction techniques (22). Abdominal wall metastases can also occur after laparoscopic procedure in treatment of gynecologic neoplasms (23,24).

An inadequate surgical management performed by laparoscopy and laparotomy may worsen the prognosis of an early ovarian cancer. If the abdominal wall is protected with a bag and the tumor is not morcellated, the incidence of trocar site metastasis is about 1%. Puncture of an ovarian tumor with intracystic vegetations is a high-risk situation which should be avoided whenever possible (25).

CONCLUSION

Ovarian cancer is difficult to diagnose at an early stage. Thus, most are at an advanced stage when discovered. Histopathological confirmation of the disease, surgical staging, and aggressive surgical debulking, when possible, are all part of the initial evaluation and treatment of ovarian cancer. In most cases, surgery is followed by chemotherapy. Advancing age, the major risk factor for the development of ovarian cancer is, of course, unalterable. The patient treated in the Institute of Oncology Sremska Kamenica was 22 year old and metastasis appeared in abdominal wall 4 years after borderline tumor of ovary had been diagnosed. Recurrence free survival rate was 20 months.

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