Epithelial Ovarian Cancer in Pregnancy: Report of Two Cases

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Abstract

Ovarian cancer is the second most frequent gynecological cancer complicating pregnancy after cervical carcinoma. In dealing with a pregnant woman with ovarian cancer, the effects of the malignancy on the woman and the fetus should be considered and how pregnancy can make diagnosis and management increasingly challenging. Here we present a report of two cases. In one case a 35-year-old female, para 3 living 3 was incidentally detected to have an ovarian mass during her 3\textsuperscript{rd} large scale climate simulator (LSCS). Intra-operatively, she was found to have cauliflower-like growth in the left ovary and she underwent left oophorectomy elsewhere and in another case a female, 32-year-old, primigravida, presented at 34 weeks and 5 days gestational age with complaints of leaking per vaginum and she subsequently underwent LSCS for failed induction.

Keywords: Chemotherapy, Interval debulking, Pregnancy, Serous cystadenocarcinoma

INTRODUCTION

The incidence of ovarian tumors in pregnancy is approximately 1 in 1000, of which 2-5% tumors are malignant (1 in 12,500-25,000 pregnancies). Ultrasound scanning in pregnancy has lately become a routine. It has led to more frequent findings of the relatively asymptomatic adnexal masses.\textsuperscript{1-4} It is difficult to know how best to manage these patients, due to the absence of large prospective randomized trials and cohort studies.\textsuperscript{5}

Ovarian cancer is classified according to the histology of the tumor. The diagnostic modalities, clinical treatment, management, and prognosis are based on the histopathological findings. Surface epithelial-stromal tumor is the most common type of ovarian cancer, and they are also known as epithelial ovarian carcinoma.\textsuperscript{1} Infertile women are at a very high risk of ovarian cancer as they ovulate more. Smoking, obesity, fertility medications and hormone replacement therapy after menopause are other common risk factors. Hormonal birth control, tubal ligation and breast feeding are few factors that decrease the risk of ovarian cancer.\textsuperscript{2} About 10% of cases run in families and approximately 50% of the risk of ovarian cancer is present in individuals with the gene mutations BRCA\textsubscript{1} or BRCA\textsubscript{2}.\textsuperscript{4}

CASE REPORTS

Case 1

A 35-year old female from Jharkhand, India, para 3 living 3 was incidentally detected to have an ovarian mass during her 3\textsuperscript{rd} large scale climate simulator (LSCS) done elsewhere for previous 2 LSCS with central placenta previa in December 2008. Intra-operatively she was found to have cauliflower-like growth in the left ovary and underwent left oophorectomy elsewhere and in another case a female, 32-year-old, primigravida, presented at 34 weeks and 5 days gestational age with complaints of leaking per vaginum and she subsequently underwent LSCS for failed induction.

Serum tumor markers were done and were found to be normal. Her slides were reviewed and was reported as high-grade serous carcinoma, left ovarian mass; no lymphovascular invasion; capsular breach could not be
assessed (Figure 1). Computed tomography (CT)-scan was done and it was reported as normal right ovary, uterus had a small anterior wall fibroid, few nodules were seen in the omentum and lymphadenopathy was seen in the diaphragmatic, para-iliac and para-aortic areas. She was planned for completion staging laparotomy with the diagnosis of carcinoma ovary-improperly staged. Intra-operatively, there was no free fluid in the abdomen, cut surface of the uterus and ovary was normal, there were no palpable nodes and no areas of metastasis elsewhere in the abdominal cavity or pelvis (Figure 2). Her post-operative period was uneventful, and she was discharged on the 7th post-operative day. Her histopathology was reported as borderline serous cystadenoma of the right ovary, with no tumor anywhere else.

She was planned for chemotherapy for 6 cycles and then for hormone replacement therapy. She has received 6 cycles of chemotherapy. She is planned for hormone replacement therapy till 45 years of age and also asked to follow-up regularly.

Case 2
A 32-years-old female, primigravida, from Andhra Pradesh, South India, presented to us in July 2006, at 34 weeks and 5 days gestational age with the complaints of leaking per vaginum for more than 10 h. She had her regular ante-natal check-ups at a hospital in her hometown. She did not have any ante-natal ultrasonograms. She underwent LSCS for failed induction. Intra-operatively, she was found to have bilateral ovarian tumor with metastasis (Fédération Internationale de Gynécologie et d’Obstétrique-Stage III or higher) to uterus, peritoneum and omentum. Bilateral oophorectomy was done, and the biopsy of the surgical specimen was reported as serous papillary carcinoma of both ovaries. She was planned for chemotherapy. She received 6 cycles of platinum-based chemotherapy in 2006. She again presented in 2007 with complaints of abdominal pain and distension. CT scan done at that point of time showed recurrence of disease and she was planned for 3 more cycles of chemotherapy with carboplatin and placitaxel. Subsequently, she underwent interval debulking in May 2008. The surgical specimen was sent for histopathology, and it was reported as omentum with residual microscopic foci of viable adenocarcinoma deposits, uterus and fallopian tubes with no lesion. She was planned for chemotherapy for 3 more cycles.

She was then lost to follow-up. She again presented to us in July 2009 with complaints of abdominal pain and distension. Her serum tumor markers were sent to the laboratory. Ca-125 was elevated. Ultrasonography of the abdomen showed pelvic recurrence with bilateral masses with solid and cystic components measuring 6.3 cm × 3.4 cm on the left side and 4.2 cm × 3.6 cm on the right side; new lesions were seen in the liver; left hydroureteronephrosis was present; and there were multiple omental deposits with minimal ascites.

Poor prognosis was explained to her, and she was planned for 2nd line chemotherapy but due to financial constraints she opted for 3 more cycles of chemotherapy with carboplatin and placitaxel.

DISCUSSION
Primary ovarian carcinoma occurs more commonly in nulliparous women in the latter half of their reproductive life. Women with maternal ovarian cancers are found to be significantly older than those with benign or borderline ovarian tumors.
The distribution of different histologic types of ovarian cancers in pregnant, as well as non-pregnant women, is similar in the corresponding reproductive-age group. In premenopausal women, the occurrence and detection of epithelial ovarian cancer are <20%. However, the detection of adnexal masses in pregnant women is relatively common lately as ultrasound monitoring is routinely used during pregnancy.

Ovarian cysts that are unilateral, <5 cm in diameter and usually detected in the first trimester are often functional in nature. Surgical intervention is required in the case of an adnexal mass exceeding 6 cm in diameter with complex structure or ascites or persisting beyond 16 gestational weeks to obtain a final histologic diagnosis and rule out malignancy. Elective surgery for tumors with low suspicion of malignancy should be delayed until the second trimester (17-19 weeks of gestation) so that the risk of spontaneous abortion is considerably reduced and also to watch for spontaneous resolution of functional cysts as seen in a vast majority of cases.

The spontaneous abortion rate after surgery in the first trimester is documented as 10%. 76.3% patients continued pregnancy remarkably improved their prognosis and all the ten cases got regression of the aggressive features. Poor prognostic factors include advanced stage of disease and special histologic type, especially invasive epithelial cancer.

Invasive epithelial cancer has the worst prognosis in all types of ovarian cancers. For these type of cancers, timely cytoreductive surgeries followed by post-operative adjuvant chemotherapy is indicated, except for well-differentiated stage IA tumours. Chemotherapy is generally contraindicated during the first trimester of pregnancy because of the high rate of abortion and abnormal fetal development. However, in the second or third trimester of pregnancy chemotherapy can be comparatively safely administered as the risk of congenital malformation for the fetus is very low.

The non-teratogenic effects of chemotherapy such as intrauterine growth restriction (low birth weight) or effects on the central nervous system as it develops throughout pregnancy should always be considered. Until now, no studies have evaluated the long-term consequences for children exposed to intrauterine chemotherapy. Breastfeeding during cytotoxic chemotherapy should be avoided. There is no convincing evidence that multi-agent chemotherapeutic regimens have a significant increase in congenital malformations of the fetus opposed to single cytotoxic agent. There are numerous reports in the literature of bleomycin, cisplatin and etoposide used in pregnancy with no untoward effects on the foetus.

Several reported cases in the literature have described the use of adjuvant chemotherapy with good response using cisplatin and cyclophosphamide initiated in the second trimester of pregnancy and subsequent delivery of healthy foetus. Few case also reports describe the administration of a combination of paclitaxel and carboplatin during the second or third trimester of pregnancy with no significant fetal toxicity.

CONCLUSION

Most of the patients are clinically asymptomatic at the time of presentation. Early detection and timely management hold the key to a better prognosis. The widespread use of routine prenatal ultrasound and the incidental finding of an adnexal mass in pregnancy has become an increasingly common occurrence lately. Prognosis and quality of the patient’s life should be given primary importance, and pregnancy should be terminated if required.

REFERENCES


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