Introduction

The diagnosis of an asymptomatic adnexal lesion during pregnancy has become more common after the widespread use of routine ultrasonography (US) (1). It is estimated that approximately 1-4% of pregnant women are diagnosed with an adnexal mass, while about 90% of such lesions revealed during the first trimester will disappear spontaneously (2-4). The most commonly diagnosed, after histological evaluation, adnexal masses during pregnancy are the mature cystic teratomas, the endometrioid cysts and the corpus luteum cysts (1, 5). On the other hand, the risk of malignancy for the adnexal masses diagnosed during pregnancy is only 2-3% (6). Despite this low incidence, ovarian cancer is considered to be the second most frequent gynecological cancer complicating pregnancy (7).

Most patients are clinically asymptomatic and diagnosis is often based on scheduled US examination during prenatal screening. The most common findings associated with a suspicious for malignancy ovarian mass include: the presence of solid components, multiloculated large tumors with increased wall thickness and maximum diameter > 6 cm, gross internal septa, papillary projections, bilateral lesions, decreased resistance in blood flow during Doppler examination or free abdominal - pelvic fluid (8). Additional imaging with magnetic resonance helps in the better definition of the morphological characteristics of the suspicious lesion. On the other hand, computed tomography (CT), although is the most common imaging examination to detect the extension of a suspected ovarian cancer, is avoided during pregnancy due to the negative effects of ionizing radiation at organogenesis.

The management of women diagnosed with asymptomatic adnexal lesions that persist during pregnancy remains controversial (1). The difficulties in the preoperative assessment, A large papillary papule with a network of blood vessels showing decreased resistance in blood flow was noticed as well. Surgical intervention revealed ascitic fluid and a large cystic mass arising from the right ovary. Cesarean section and right salpingo-oophorectomy, including the mass, were performed. Frozen section biopsy was positive for malignancy. Total hysterectomy and left salpingo-oophorectomy, total omentectomy, biopsies from the pelvic peritoneum, pelvic/para-aortic lymphadenectomy and appendicectomy followed. Histology showed mucinous ovarian adenocarcinoma Grade I Stage I according to FIGO classification. Surgical intervention, in cases of persisting adnexal lesions, is often necessary, even during pregnancy.

KEY WORDS: Ovarian cancer - Pregnancy - Ultrasound - Adnexal mass - Chemotherapy.
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The aim of this study was to discuss the diagnostic and therapeutic dilemmas in cases of pregnant women with adnexal masses. A case of a pregnant woman whose prenatal ultrasound examination revealed the presence of a large adnexal mass with sonographic characteristics that led to surgical intervention and diagnosis of ovarian cancer is presented with synchronous review of the literature.

Case report

The patient was a gravida 2, para 1, 37 year-old woman, BMI 21.9, non-smoker with history of HPV cervicitis, one first trimesters' surgical abortion and obstetric history of one vaginal delivery three years ago at the 40th week of gestation when a male, healthy, infant with a body weight of 3260 gr. was born. She was presented for scheduled third trimester ultrasound assessment (fetal growth and Doppler examination) at the 32th week of gestation.

Ultrasound examination showed a fetus with normal growth and normal quantity of amniotic fluid. No fetal anatomic abnormality was detected and Doppler studies of umbilical and middle cerebral arteries were normal. However, a large unilateral adnexal lesion with a maximum diameter of 13.5 cm was detected (Figure 1). The presence of a large papillary papule with a network of blood vessels showing decreased resistance in blood flow was noticed as well, while tumor marker CA-125 was slightly elevated at 74.8 U/ml. The US examination was repeated two weeks later. No changes were observed in the lesion’s dimensions; however the levels of CA-125 showed a rapid increase at 641.7 U/ml.

Magnetic resonance imaging examination revealed an adnexal lesion with papillary papules and maximum diameter of approximately 20 cm. In addition, it showed presence of ascites without enlarged para-aortic lymph nodes.

Surgical intervention followed at the 36th week of gestation via vertical incision. A large cystic mass (max. diameter 20 cm) arising from the right ovary was found in the abdominal cavity as well as 2 l.t. of ascitic fluid. Sample of ascitic fluid was sent for cytological examination. A cesarean section took place and a male, healthy, infant with a body weight of 2530 gr. was born. The right adnexa including the mass were resected and frozen section biopsy was positive for malignancy. Total hysterectomy and left salpingo-oophorectomy, total omentectomy, biopsies from the pelvic peritoneum, pelvic/para-aortic lymphadenectomy and appendicectomy were performed. No macroscopic enlarged lymph nodes or pathology from the organs of the upper abdomen was noticed.

The patient was under close monitoring in the intensive care unit for two days; she recovered well without postoperative complications. The cytological examination of ascitic fluid sample was positive for the presence of malignant cells. Final histological examination showed Grade I mucinous cystadenocarcinoma of the right ovary (Figure 2).

The left adnexa, the uterus, the totally 26 removed pelvic/para-aortic lymph nodes, the omentum (40 x 15 cm), the appendix and the biopsies from the pelvic peritoneum were negative for malignant metastatic invasion. The case was classified as Stage Ic ovarian mucinous cystadenocarcinoma and the patient received adjuvant platinum and taxane chemotherapy.

Discussion

In agreement with literature data, the patient in this reported case was clinically asymptomatic and diagnosis was based on incidental findings during scheduled prenatal US examination. In another recently published study from our Department, 78.1% of pregnant women were asymptomatic and diagnosis of adnexal lesions was an incidental finding mainly arrived at by chance during ultrasound examination for routine prenatal monitoring, or during a cesarean section for obstetric indications (1). It is true that the early diagnosis of ovarian lesions during pregnancy is achieved thanks to serial ultrasound examinations for prenatal monitoring. This early diagno-
Diagnosis and management of ovarian cancer during pregnancy

Adnexal malignancy represent a comorbid disease in pregnancy and examination of the ovaries should be part of pregnancy ultrasound assessment protocols especially in the first trimester. Therapy of ovarian cancer during pregnancy is a challenging clinical condition and patients should be referred to specialized centers. Evidence-based guidelines regarding the therapeutic approach of ovarian cancer during pregnancy are limited and most evidence is based on case reports and retrospective series, since prospective studies or clinical trials do not appear feasible.

Conflict of interest statement. All authors declare that they have no conflict of interest.

References

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