Ovarian endometroid adenocarcinoma in pregnancy

Endometroidni karcinom ovarijuma u trudnoći

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Abstract

Background. Ovarian cancer is very rare in pregnancy. It is mainly of epithelial origin, low grade and low malignant potential. Case report. We presented a patient in which ultrasound confirmed the presence of clearly limited tumor in the left ovary when she was eight weeks pregnant. The results of 4D Color Doppler showed a central type of tumor vascularisation with resistance index (IR) less than 0.5. The Consultancy Board in Gynecology of the Institute for Oncology and Radiology of Serbia decided to remove the patient’s left adnexa and intensively monitor the pregnancy period. The operation (Adnexectomy lateralis sinistra) was performed at 18th week of gestation. Histopathological analysis showed adenoscarcinoma invasivum, endometroid well-differentiated type (histological grade I, nuclear grade 2). In 37th week of gestation, the patient gave birth to a male child by cesarean section. In the next 3 years the patient had no subjective interference, laboratory tests and ultrasonographic findings were normal. Conclusion. Ovarian cancer in pregnancy is usually asymptomatic and diagnosed during routine clinical and ultrasound examination. The color Doppler technique have particular importance in the diagnosis of pathological blood supply in tumors and in indication of malignant ovarian mass.

Key words: carcinoma, endometrioid; pregnancy; diagnosis; treatment outcome.

Apstrakt


Ključne reči: karcinom, endometrioidni; trudnoća; dijagnoza; lečenje, ishod.

Introduction

Ovarian cancer incidence in pregnancy is 1 : 18,000 – 1 : 48,000 1–3. It is mainly of epithelial origin, low grade and of low malignant potential 4,5. These tumors are usually asymptomatic and diagnosed during routine clinical and ultrasound examination. The color Doppler and power Doppler techniques have particular importance in the diagnosis of pathological blood supply in tumors and in the indication of a malignant ovarian mass. Serum tumor markers (hCG, α-fetoprotein, CA-125) increase levels in the first trimester of pregnancy, but they are not reliable malignancy parameters 6,7. Without a large prospective randomized study it is difficult to assert with certainty which treatment is the best for these patients. Treatment depends on gestational age, disease, tumor type, the presence of metastases, patients’ desire to main- tain pregnancy.

Case report

A 30-year-old woman was admitted to the Gynecological-Obstetrical Clinic in Kragujevac due to amenorrhea and
suspicion of pregnancy. She denied subjective problems, previous chronic disease and surgery. She had positive family history of malignancy (father died of colon cancer). She claimed not having previous abortions and pregnancy. Ultrasound examination revealed gestational follicle with embryonic echo in the uterus (CRL 23.44 mm) corresponding to the pregnancy age of 8 weeks and 5 days (Figure 1a). Behind the uterus, to the left there was a partly solid tumor, partly cystic structure of the size 96.38 × 59.77 mm (Figure 1b).

Subsequent ultrasound was performed with a 4 D Color Doppler to investigate the quality of the flow through the blood vessels in the tumor tissue. Ultrasound showed the enlarged uterus, registered movements and rhythmic heart rate of a fetus. It confirmed the presence of tumor at the left ovary, of clearly limited size 102.73 × 52.09 mm. The central type of tumor vascularisation with resistance index (IR) less than 0.5 indicated a pathological flow (Figure 1c). The right ovary had physiological ultrasonographic characteristics; free liquid was not present in the Douglas.

Laboratory analyses were in the physiological limits. Tumor marker CA-125 was 31.6 U/mL (reference values from 0.0–35.0 U/mL).

After a complete insight into the medical documentation, the Consultancy Board in Gynecology of the Institute for Oncology and Radiology of Serbia decided to remove the patient’s left adnexa and intensively monitor the pregnancy period till the fetus would be able to lead extrauterine life, when operational termination of pregnancy would be necessary.

The operation (Laparatomia mediana infraumbilicalis. Adnexectomia lateralis sinistra) was performed at the 18th week of gestation, under general endotracheal anaesthesia (OEAT) and passed without any complications. The preparation - left adnexa was sent to histopathological analysis (HP).

Irregular, discoid node was present with the size of 90 × 75 × 25 mm, with blurry leathery surface, partly cystic (with dark brown content) and partly solid, soft consistency.

Histopathological diagnosis was Adenocarcinoma invasivum, endometroid well differentiated type (histological grade I, nuclear grade 2). Also, smaller sites of necrosis and dystrophic calcification were present in the stroma; clinical stage IA disease (FIGO); T1aN × M × (pTNM).

The tumor consisted of atypical glandular formations of irregular shape, between which the strip-like stroma was located (Figures 2c and 2d). It was coated with large cells, generally of cylindrical shape and eosinophilic cytoplasm. The nuclei were light, polymorphic. Stratification of cells was evident with the creation of secondary lumen and glands with cribriform looks. Papillary structures were also present. The tumor contained a focus of benign squamous metaplasia, and fields of histologically benign squamous epithelium (adenocanthoma - adenocarcinoma with benign squamous differentiation focus) (Figure 2a). There was also a presence of hemosiderin pigment, as well as an indirect sign of the existence of ovarian endometriosis (Figure 2b).

Fig. 1 – The results of an ultrasound exam: a – presence of a vital fetus, b – presence of a tumor, c – the results of 4D Color Doppler showed newly formed blood vessels of the tumor (tumor angiogenesis); central type of tumor vascularisation with resistance index (IR) less than 0.5 indicated a pathological flow

Fig. 2 – Histopathological verification of tumor: a – adenocarcinoma with the focus of benign squamous metaplasia (H&E × 100), b – the presence of hemosiderin deposits in the ovarian stroma as an indirect proof of a possible presence of external endometriosis (H&E × 100), c – and d – presence of atypical glandular structures in tumor of endometroid type (c – H&E × 100; d – H&E × 200)
Postoperative course was without complications. The patient was treated with tocolytics and antibiotic prophylaxis. The patient was monitored once a month. At each review the general condition of patient was well, laboratory analysis within the physiological limits, ultrasonographic course of pregnancy progressed properly, growth and development of the fetus were in physiological boundaries. The right ovary had normal ultrasonographic characteristics and size, without ascites.

The patient was admitted to the hospital in 37th week of gestation for operational completion of pregnancy and a possible radical surgery on the basis of the results of the ex tempore biopsy. The operation (Sectio Caesarea) passed regularly. A male child was born alive, with body mass 3 700 g, and Apgar score 9. After closing the uterus and adequate hemostasis, pelvic organs and both paracolic spaces were explored. There were no macroscopically visible pathologic changes of the right ovary; lymph nodes and omentum were observed.

The right ovary and the omentum biopsy, as well as peritoneal washing were performed; the material was sent to HP and cytological analyses. The placenta was also sent to HP analysis. The HP finding was: *Hyalinisatio pariatialis stromae placentae grade levoris*, and *Edema umbilicalis*.

Ovarian tissue and omentum were with normal morphology. *Lymphadenitis chronica reactiva* with moderately pronounced sinus histiocytes was revealed. The prepared smear of sent materials contained scarce mesothelial cells.

The HP analysis results did not required a greater degree of surgery than performed and no additional oncological therapy.

The patient was monitored in the next 3 years. In this period she had no subjective interference, and laboratory tests and ultrasonographic findings were good.

**Discussion**

Although ovarian tumors are rare in pregnancy, they represent a real challenge in terms of diagnosis and therapy. Incidence of ovarian tumors is very low (1%–4%) and 1%–8% of these tumors are malignant. A patient may have symptoms of acute abdomen due to torsion, rupture and bleeding of pelvic mass. Most ovarian tumors in pregnancy, which was confirmed in this case, are clinically asymptomatic.

Routine transvaginal ultrasound examinations during pregnancy are useful in early diagnoses of ovarian tumors and their structural characteristics, making a difference between common cysts and complex tumors. Using the Doppler technique and estimation of blood flow through vessels in tumor tissue significantly improve the diagnostic accuracy of sonography. Low impedance, central type of vascularisation and IR < 0.5 indicate malignant ovarian mass.

In this case histopathological analysis definitely confirmed the nature of the tumor.

Among malignant ovarian tumors diagnosed in pregnancy, epithelial tumors of low malignant potential (LMP) are the most frequent phenotype. Our case report supports this statement. Endometroid adenocarcinoma arises from ovarian celom epithelium and also from the focus of endometriosis – by malignant transformation. It is believed that the forms of adenocarcinoma with benign squamous metaplasia focus have better prognosis, although the literature data are still contradictory. Endometroid adenocarcinoma has better prognosis than other ovarian cancer although the ultimate outcome is largely dependent on the prevalence of tumors, the time of diagnosis and early treatment. In this case, the tumor was diagnosed in stage IA, which has better prognosis.

It is difficult to assert with certainty which treatment is best for these patients. Based on previous experience, it is recommended to first perform the surgical removal of tumor mass. Optimal time for surgery of ovarian tumors in pregnancy is 16–20 weeks of gestation. In this case, the patient was operated at the 18th week of gestation in accordance with the literature data.

Ovarian cancer in pregnancy can be treated with chemotherapy, if there are indications for that. On the basis of previous experience, chemotherapy is recommended in the second and third trimester. The risk for congenital malformations in these children is the same as in the general population, but for now there is no study that assessed long-term consequences. In this case there was no indication for the application of chemotherapy.

**Conclusion**

Ovarian cancer in pregnancy is usually asymptomatic and diagnosed during routine clinical and ultrasound examination. The color Doppler technique have a particular importance in the diagnosis of pathological blood supply in tumors and in indication of malignant ovarian mass.

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**REFERENCES**


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