Primary Ovarian Ectopic Pregnancy

Senol Senturk¹, Mustafa Kara²

SUMMARY
Almost 1-2% of the all pregnancies implants in the ectopic localization. The incidence of primary ovarian pregnancy is reported to be one in 7000 to 40000 pregnancies. We aimed to evaluate the diagnosis and treatment of this rare condition. A 32 years-old Caucasian woman, gravida 2, parity 2, was referred to our clinic with the complaint of pelvic pain started suddenly with vomiting and nausea. There was a painful fullness at the right adnexal region in the gynecologic examination of the patient. A live embryo in size of 4x3 cm was detected in right adnexal region and within a hypoechoic soft tissue field. Embryo was almost 7 weeks. Serum beta hCG (β-hCG) level was 50885 IU/ml. The patient underwent an urgent laparoscopy. The ruptured right ovarian ectopic pregnancy was detected during laparoscopy. Cystectomy was performed by right ovarian wedge resection. The diagnosis is usually made with the pathologic examination of the specimen. Therefore, Spiegelberg’s criteria are very important for diagnosis of ectopic pregnancy. The basic principle in the medical and surgical treatment is to preserve the fertility of the patient.

KEY WORDS: Pregnancy, Ectopic pregnancy, Primary ovarian ectopic pregnancy.

INTRODUCTION
Ectopic pregnancy is a major health problem with increasing importance. Almost 1-2% of the all pregnancies implants in the ectopic localization out of endometrial cavity. Primary ovarian pregnancy, a rarely seen form of ectopic pregnancies (0.5-1%), occurs due to inability to release fully mature ovum outside the ovary and entrance of spermatozoa into the Graafian follicle.¹ The incidence of primary ovarian pregnancy is reported to be 1 in 7000 to 40000 pregnancies.²

CASE PRESENTATION
A 32 years-old Caucasian woman, gravida 2, parity 2, was referred to our clinic with the complaint of delayed menstrual cycle for 10 days and a pelvic pain started suddenly with vomiting and nausea. The patient was not using any intrauterine device during this ectopic pregnancy. It was determined that the patient was treated with methotrexate for right tubal ampullar pregnancy one and half year ago. The patient had been given 100 microgram Methotrexate in previous ectopic pregnancy and she had been using Copper T 380 intrauterine device for three years. Previous ectopic pregnancy tissue had diminished and disappeared with medical treatment. Blood pressure was 120/70 mmHg and heart rate was 68/minute. The general condition of the patient was good. Vulva and vagina appeared normal at vaginal examination. Cervix showed features of multiparity and its movements were painful.
There was a painful fullness at the right adnexal region in the gynecologic examination of the patient. There was no uterine bleeding. There was rebound tenderness in the right inferior quadrant. During transvaginal ultrasonography, uterine cavity appeared normal (Fig-1) and one alive embryo (ectopic pregnancy) with approximately 7 weeks fetal heart beat was observed within a heterogenic hypoechoic soft tissue field in size of 38x29 mm in right adnexal region (in the right anterior neighborhood of fundus) (Fig-2). There was no fluid in Douglas pouch. Complete blood count test, blood group test, routine biochemistry tests and serum beta human chorionic gonadotropin ($\beta$-hCG) level test were performed. Haemoglobin (Hgb) was reported to be 12.4 g/dL, hematocrit (Htc) 35.9 % and serum $\beta$-hCG level 50885 IU/mL.

The patient underwent an urgent laparoscopy due to the following values found in the test performed at 6th hour after the hospitalization: Hgb 11.9 g/dL; Htc 33 %; blood pressure 70/40 mmHg and pulse rate: 110/min. During laparoscopy, abdominal cavity full of hemorrhagic fluid was cleaned by aspiration. The ruptured right ovarian ectopic pregnancy showing no connection with the fimbria and in size of 4x3 cm was detected during laparoscopy.

Cystectomy was performed by right ovarian wedge resection and the rest of the tissue was sutured. Operation was terminated properly following hemostasis. The right ovary tissue plus right ovarian ectopic pregnancy were verified by pathologic examination result. The patient discharged on the postoperative 2nd day was referred to our polyclinic to be followed for periodical $\beta$-hCG follow-up. Serum $\beta$-hCG level was < 5 IU/mL 10 days after the operation.

DISCUSSION

Primary ovarian pregnancy is a type of ectopic pregnancy which is extremely hard to diagnose preoperatively as well intraoperatively. The diagnosis of primary ovarian pregnancy is made by four criteria of Spiegelberg. These criteria include the followings: The tube on the involved side should be intact, the gestational sac should be located in the region of the ovary, the gestational sac should be attached to the uterus by the utero-ovarian ligament and ovarian tissue in the wall of the gestational sac is proved histologically. All the findings in our case comply with these four criteria of Spiegelberg.

Abdominal pain is present in almost all ovarian pregnancy cases and some of them may be referred with signs and symptoms of shock. Since ovary is a tissue receiving good blood circulation and revitalizing, clinical picture of ruptured ovarian pregnancy follows a more severe course. Pre-shock picture is seen much more in these patients than the other tubal ectopic pregnancies.

It is hard to diagnose this rare ectopic pregnancy before surgery. Early diagnosis, $\beta$-hCG level measurement and ultrasonographic evaluation and especially flow measurements with color Doppler ultrasonography give more valuable results. However, even experienced clinicians can often have difficulty in differentiating a tubal mass from an ovarian mass. In a study performed on 25 cases with primary ovarian ectopic pregnancy, Hallat et al, was able to diagnose the primary ovarian ectopic pregnancy correctly preoperatively in only 28% of the cases. The precise diagnosis in the remaining cases was made by a pathologist.

Primary ovarian pregnancy usually occurs in young, highly fertile, multiparous women and especially the ones using intra uterine device (IUD).
its etiology, IUD use is emphasized more frequently rather than pelvic surgery and pelvic inflammatory diseases. Presence of IUD use was reported in 90% of the cases by Raziel et al.8, in 20% of the cases by Hallat6 and in 50% of the cases by De Vrie et al.9 IUD use history was not present in our case.

Even though traditional therapy is laparotomic oophorectomy, today, especially laparoscopic wedge resection, cystectomy or medical treatment with methotrexate in suitable cases can be used.2,10 In our case, urgent laparoscopy option was performed. Wedge resection and cystectomy was made taking into consideration the youth of the patient.

CONCLUSION

The diagnosis of primary ovarian ectopic pregnancy is a rarely seen clinical entity, is only made by pathological examination although the history, clinical examination and especially ultrasonography findings have an important place in the diagnosis. While treatment of choice is ovarian wedge resection, methotrexate treatment can be used in suitable cases. The basic principle in the treatment, either medical or surgical treatment, should be to preserve the fertility of the patient.

Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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REFERENCES


Authors’ Contributions:

Senol Senturk examined, diagnosed and treated the patient.
Mustafa Kara helped him and was a major contributor in writing the manuscript. All authors read and approved the final manuscript.