Heterotopic pregnancy: Cause of a rare acute abdominal emergency

Birge Ozer, Ozgur Nazan, Erkan Mustafa Melih

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Case Report: Our case is a female previously operated with dilatation and curettage (D&C) on eighth week of gestation in another hospital. She came to our clinic with an acute abdominal emergency and was taken to surgery immediately after seeing an ectopic gestational sac during the examination. Herein, we would like to present this well-managed and treated case admitted to our hospital for acute abdominal emergency following termination of a spontaneously developed anembryonic pregnancy.

Conclusion: Intrauterine gestational sacs can be easily overlooked during a routine ultrasonography examination if the physician is not paying enough attention for the accompanying ectopic pregnancy possibility. The clinical presentation of the patient plays a key role in choosing a treatment method.

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CASE REPORT

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Keywords: Acute abdomen, Anembryonic pregnancy, Emergencies, Heterotopic pregnancy

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INTRODUCTION

Heterotopic pregnancy is defined as the simultaneous development of an intrauterine and an extrauterine gestational sac. Spontaneous heterotopic pregnancy was considered to be very rare with an incidence of 1 in 30,000 pregnancies [1]. The incidence rates are higher in patients with induced ovulation in comparison with spontaneous conception. Intrauterine sacs can be easily overlooked if the physician is not paying enough attention for the accompanying ectopic pregnancy possibility. Using serial hCG measurements for follow-up is redundant since the intrauterine pregnancy keeps hCG levels increased. The treatment for ectopic pregnancy is surgical intervention. After surgically removing ectopic sac, intrauterine pregnancy proceeds normally in most of the patients. There are also other techniques such as transvaginal or laparoscopic KCl injections. The clinical situation of the patient during initial admission defines the chosen therapeutic method. Early diagnosis is especially important in those type of pregnancies since it

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directly affects morbidity, mortality and future fertility of the patients.

CASE REPORT

A 21-year-old female admitted into emergency room of Ağrı Obstetrics and Gynecology Hospital with syncope, nausea, emesis and vaginal hemorrhaging in staining character. She was not having her period for 2 months and was diagnosed with anembryonic pregnancy in another private medical clinic. Eight hours before admission, the patient was treated with dilatation and curettage (D&C) under elective conditions in the same medical clinic she was diagnosed without any complications and the patient was discharged after the operation. Postoperatively 8 hours, the patient gradually started to feel unwell and finally was brought to the emergency room of our hospital. The medical history stated that this was her first pregnancy and she had no history of a coexisting illness or medication. Following admission, no active hemorrhage was diagnosed during speculum inspection but routine hemorrhage in staining character was common following such procedures. Abdominal examination showed a widely distributed tenderness in all quadrants during palpation and rebound finding was prominent in lower quadrants. Dyspnea and palpitations were seen in supine position. Ultrasonography (USG) examination showed a normal uterus, endometrium thickness (10 mm) and normal bilateral ovary structures. Disseminated dense fluid retention in a hemorrhagic fashion was detected in Douglas and paraovarian areas in addition to intestinal segments. The image was consistent with an embryo in yolk sac with a gestational age of 6 weeks and six days in ampullar portion of right fallopian tube. (Figures 1 and 2). The patient vital signs were blood pressure 80/40 mmHg, pulse 98/minute and hemoglobin was 7.8 g/dl, HTC 22, Platelet count 182000 and WBC 14000. Patient was closely followed and the USG images taken before D&C procedure were obtained from the patient. The images revealed a gestational sac consistent with an anembryonic pregnancy measuring 33 mm located in uterine fundus and the procedure was actually a D&C for abortion (Figures 3 and 4). Patient's relatives were notified of the medical situation of the patient and our initial diagnoses were either a uterine rupture or a coexisting pregnancy of a heterotopic type. Laparotomy was planned after assessment of the clinical situation of the patient and risks and details of the procedure was shared with the patient. After obtaining 3 units of erythrocyte suspension, the abdominal access was done using a Pfannenstiel incision. Dense disseminated fluid was detected and about 2 liters. of this hemorrhagic fluid was aspirated. After aspiration, no signs of perforation was found on the front or rear surface of the uterus. In tubal structures inspection, left tube and ovary was normal but right tube had an actively bleeding gestational sac about 2 cm in diameter on ampullary portion and a

full thickness perforated tubular structure confirmed our diagnosis of heterotopic pregnancy (Figure 5). Salpingostomy was chosen after considering patient's age and gravidity. The tube was repaired using 3-0 Prolene sutures after removal of all trophoblastic structures. Operation was finished after checking for hemorrhage and an abdominal drainage tube was inserted for follow-up. Three units erythrocyte suspension was used during the operation. Within 48 hours in postoperative period, 50 cm³ serohemorrhagic fluid was collected in the drain. The abdominal drainage tube was removed on the third day of operation and patient was discharged from the hospital with full recovery. The patient was advised to go to regular follow-up in gynecology and obstetrics clinic. β -hCG values dropped below 5 and no complications were seen in incisional scar area. She was also informed about the possible risks that might occur in future pregnancies.

Figure 1: Ectopic pregnancy discerned in right tubal structures.

Figure 2: Expansive fluid seen in abdomen of the case admitted with acute abdominal findings.

Figure 3: Intrauterine anembryonic sac consistent with 8 weeks (before D&C).

Figure 4: Control ultrasonography scan after curettage.

Figure 5: Right ruptured ectopic gestational sac.

DISCUSSION

Heterotopic pregnancy is the development of intrauterine and ectopic gestations at the same time, but in different places [2]. First incidence rate of this condition is reported as 1/30000 in Devoe and Pratt's study done in 1948. This incidence rate was revised to 1/3889 after new

analysis methods and this went up to 1/100 with assisted reproductive techniques [2, 3]. Our main objective in this study is to present the diagnosis and treatment stages of such a rare case of tubal and intrauterine spontaneous heterotopic pregnancy with literature review. Although assisted reproductive techniques increased incidence rates dramatically, heterotopic pregnancy is still a very rare condition after spontaneous pregnancy. Predisposing conditions for this condition are the same for ectopic pregnancy; which are pelvic adhesion, previous tubal damage, previous tubal surgery and STD history. Early diagnosis of this condition is crucial since it plays an important role in morbidity and mortality of the patient as well as future pregnancies. Maternal mortality is around 1% and fetal intrauterine mortality varies between 45–65%. Each case deserves a different approach. Beta-hCG levels, progesterone levels and USG are all important for both diagnosis and follow-up. Serial progesterone level tracking can be used to determine a bad pregnancy prognosis. However, serial β -hCG level tracking is useless in those cases because of the ongoing intrauterine pregnancy. Diagnosis of a uterine pregnancy is relatively easy using ultrasonography, however gestational sac in adnexial region and fetal heartbeat visualization is rather difficult and rare. In addition, visualization of an intrauterine pregnancy might cause the obstetrician to overlook an ectopic pregnancy. Therefore, it is important to check carefully for an extrauterine pregnancy using vaginal ultrasonography scans during the first trimester in patients that became pregnant with assisted reproductive procedures. Nonetheless, less than 50% of the patients were diagnosed during USG. Most of the patients were diagnosed during emergency laparotomy procedures after they become symptomatic. Likewise, our patient was also diagnosed after clinical symptoms were seen. It is very important to keep the possibility of a heterotopic pregnancy in mind during first 14 weeks in patients with abdominal pain and hemorrhage, especially in pregnancies occurred after IVF and intrafallopian transfer of gametes. Diagnosis rate before surgery is only 0% [4]. Patients usually present to emergency rooms with acute abdominal emergency findings due to delays in diagnosis of the condition. Intrauterine pregnancy should be differentiated using TV-USG before surgery for ectopic pregnancies in patients who underwent IVF and ovulation induction. Even after no intrauterine pregnancy was visualized, no curettage should be performed on these patients due to potential intrauterine pregnancy. Acute cases indicate laparotomy surgery to maintain existing intrauterine pregnancy. The operation should be completed with minimal anesthesia and minimal trauma to uterus. If there is a missed abortus situation, laparoscopy should be done for evaluation of tubes, especially in patients in which pelvic pain is the main symptom and complaint. Failure in diagnosis might cause higher mortality rates, major blood loss and a hindrance to conservative tubal surgery. Although TV-USG increases the odds for

correct diagnosis, laparoscopy is still one of the most credible methods. Today, laparoscopy almost ruled out laparotomy in heterotopic pregnancy cases. However, laparotomy was performed in this patient because of a rapid progression of acute abdominal symptoms and a rapid deterioration in hemodynamic parameters. There is a possibility that an existing ectopic pregnancy might ruin the intrauterine pregnancy by forming a hematoma. Our case was a patient that was operated previously in another hospital and no patient file existed before her initial admission to the clinic in our hospital. Ultrasonography images before curettage showed a normal structured but anembryonic gestational sac consistent with 8–9 weeks of age. If there is a missed abortion case, laparotomy should be considered in those patients, especially with pelvic pain complaints after curettage, for evaluation of fallopian tubes and ectopic pregnancy using TV-USG and β -hCG results. Diagnosis delay brings out an increased mortality risk, major blood loss and poses a hindrance to normal tubal surgery. In heterotopic pregnancies, those treated with laparotomy have 9% abortion or stillbirth, 16% preterm delivery and 75% term delivery [5]. During operation course, it is essential to maintain ovarian blood supply [6]. Recce et al. stated continuing and healthy delivered pregnancy rates to be 75% whereas Molley et al. reported the same rate as 60% [5, 7]. Even though surgical interventions such as laparotomy and laparoscopy are the most used treatment modalities, transvaginal embryo aspiration can only be performed after local methotrexate and potassium chloride injections to ectopic sac with the aid of USG during the process [8, 9]. However, the detrimental effects of methotrexate, RU486 or prostaglandins on intrauterine pregnancy states that those techniques should not be used [10]. In acute cases requiring laparotomy, operation should be completed with minimal trauma to uterus and minimal anesthesia. Our case underwent a curettage operation before admittance and came to our hospital's emergency room with suddenly increasing emergency acute abdominal symptoms. Today, laparoscopy ruled out laparotomy in the diagnosis and treatment of symptomatic heterotopic pregnancies [11, 12].

CONCLUSION

In all pregnancies, uterus and bilateral ovaries should be thoroughly evaluated as soon as pregnancy is revealed and heterotopic pregnancy possibility should always be kept in mind in patients with hemorrhage and abdominal pain, especially when other acute abdominal symptoms are present.

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Author Contributions

Birge Ozer – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Ozgur Nazan – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Erkan Mustafa Melih – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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