

ECTOPIC PREGNANCY WITH PROBABLE ABDOMINAL LOCATION TREATED WITH METHOTREXATE: CASE REPORT

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ABSTRACT

This paper presents the case of a 25-year-old patient who presented to the clinic with lower abdominal pain for several hours. On the basis of laboratory tests, history, and physical examination, a 5-week ectopic pregnancy was diagnosed, possibly located in the right fallopian tube. The patient was treated with a laparoscopic right salpingostomy. The immediate postoperative course was uneventful. The patient was discharged home with a recommendation to control the level of β human chorionic gonadotropin (β -hCG) in 7 days. After 2 weeks the patient returned to the clinic with symptoms of bleeding into the peritoneal cavity. A second laparoscopy with removal of the right fallopian tube and curettage of the uterine cavity were performed. Despite confirmation of the chorionic tissues by histopathology in the fallopian tube and the lack of confirmation of the chorionic tissues after the uterine cavity abrasion, the increased concentration of β -hCG and abdominal pain persisted after both procedures. Abdominal pregnancy was suspected, and a methotrexate single-dose therapy was initiated with satisfactory effect. The serum β -hCG concentration dropped by 29% after 4 days, and by 54% after 6 days, after 3 weeks the β -hCG level dropped to undetectable.

Key words: abdominal pregnancy, ectopic pregnancy, methotrexate, methotrexate therapy.

INTRODUCTION

Abdominal pregnancy, by definition, develops in the peritoneal cavity, excluding the intraperitoneal structures of reproductive organs such as ovaries, external surface of the fallopian tubes, and broad ligament [1]. Two aetiologies of abdominal pregnancy are distinguished: primary blastocyst implantation in the peritoneal cavity and secondary implantation of a pregnancy that was previously located elsewhere (e.g. tubular abortion of tubal pregnancy). This is an extremely rare complication of pregnancy; thus, it is difficult to assess its actual prevalence. It is estimated that it occurs in approx. 1 : 30,000 live births [1] and about 1 : 1000 ectopic pregnancies [2], and it usually has a secondary aetiology [3]. The available literature data indicates a mortality rate of this complication of about 3% [2]. Due to the low prevalence, there are currently no standards of treatment in the case of this complication. Below we describe a case of a probable secondary abdominal pregnancy followed by effective treatment with methotrexate (MTX).

CASE DESCRIPTION

A 25-year-old woman reported to the Clinic of Gynaecology and Obstetrics of the Provincial Com-

bined Hospital in Kielce due to abdominal pain lasting several hours. According to her history, the last menstruation had occurred 37 days earlier, the menstrual cycle lasted 30 days, the patient was sexually active, and she did not use contraceptive methods. The patient did not perform a pregnancy test. A physical examination revealed blood pressure 126/88 mmHg, heart rate 114/min, and body temperature 37.8°C. There was tenderness in the lower abdomen, with pain most acute in the right-side lower abdominal quadrant. The symptoms of peritonitis were negative. In the gynaecological examination, the uterine body appeared to have anteflexion and was painful when moving; pain was felt in the projection of right adnexa; the left adnexa remained painless. Laboratory tests revealed β human chorionic gonadotropin (β -hCG) = 1630.30 mIU/ml. In a transvaginal ultrasound, an endometrium of width 15 mm was visualised. No abnormalities were visualised in the projection of the adnexa. In the rectouterine pouch, there was approximately 200 ml of free fluid with echogenic areas corresponding to clots (Fig. 1).

After 2 hours of observation due to worsening pain and emerging peritonitis symptoms, it was decided to perform an urgent laparoscopy due to the suspicion of an ectopic pregnancy rupture. In the



Figure 1. Transvaginal ultrasound at first admission – parasagittal plane



Figure 2. Transvaginal ultrasound at second admission – sagittal plane

Table 1. Concentration of β human chorionic gonadotropin (β -hCG) on consecutive days after methotrexate administration

Day after methotrexate injection	β -hCG (mIU/ml)
1	389
3	391
4	277
6	179
10	46
14	7
21	0.5

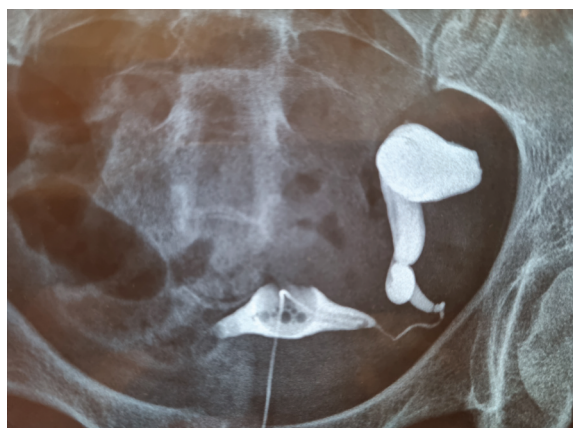


Figure 3. The patient's hysterosalpingography results

course of laparoscopy, approx. 300 ml of blood and clots were visualised in the peritoneal cavity, and the right fallopian tube was distended over an about 2 cm long section, with bleeding from the surface. The left fallopian tube showed hydrosalpinx-related widening all along its length. An incision of the right fallopian tube was made followed by debriding its contents; the interior was rinsed with saline. Peritoneal toilet was performed. No complications occurred after the procedure; the result of the control β -hCG test performed 2 days after the procedure indicated β -hCG 800.30 mIU/ml. The patient was discharged home

with the recommendations of an outpatient follow-up in 7 days. In the postoperative histological examination, the result was obtained: trophoblast villi.

After 13 days, the woman reported to the clinic due to severe and sudden abdominal pain and bleeding from the reproductive tract. Physical examination: temperature 36.6°C, heart rate 120 bpm, blood pressure 80/61 mmHg, and peritoneal symptoms on the right-hand side. Admission test results were as follows: β -hCG 638.05 mIU/ml, haemoglobin concentration (HGB) 11.2 g/dl, and haematocrit (HCT) 34%. A transvaginal ultrasound visualised approximately 300 ml of fluid in the rectouterine pouch (Fig. 2). It was decided that a repeated laparoscopy should be performed with the suspicion of a persistent trophoblast of the right ectopic fallopian tube pregnancy. During the procedure, the right fallopian tube was found bleeding from the inside and slightly dilated. Peritoneal toilet was performed – approx. 700 ml of blood and clots were removed. It was decided to remove the right fallopian tube. In the absence of consent for the removal of the left fallopian tube trophoblast, it was incised to exclude the left fallopian tube pregnancy; watery content was obtained. The result of the postoperative histological examination showed a fallopian tube with trophoblast villi. After the procedure, the patient was in good general condition – a control complete blood count showed HGB 9.8 g/dl and HCT 30.5%. The concentration of β -hCG was monitored: on the first day following the procedure β -hCG = 444.13 mIU/ml and on the fourth day after the procedure hCG = 447.01 mIU/ml. In the absence of a decrease in β -hCG concentration, a suspicion of a persistent, secondary abdominal pregnancy was raised, and 100 mg of intramuscular MTX was administered. Post-pharmacological β -hCG concentrations are presented in Table 1. Seven days after MTX administration, the pain ceased completely. The patient was discharged home in a good general condition.

After 2 months, in order to confirm the obstruction of the left fallopian tube, a hysterosalpingography ex-

amination was performed, in which the left fallopian tube hydrocele and the lack of the right fallopian tube were visible (Fig. 3). The patient was informed about the possibility of fertilization in the IVF procedure.

DISCUSSION

Abdominal pregnancy is an extremely rare complication, which is why there are currently no standards for managing such a complication in the literature. The available literature data are mainly descriptions of cases or their series. Early diagnosis is extremely important because this complication of pregnancy can lead to intraperitoneal haemorrhage and threaten the patient's life. The death of the patient occurs in approx. 3% of diagnosed cases, and the main cause of death is damage to large vessels [2]. Risk factors include tubal infertility factor, endometriosis, presence of adhesions in the pelvis, and the number of embryos transferred during in vitro fertilization [4, 5]. Ultrasound diagnostics in early abdominal pregnancy consists of finding chorionic tissues outside the uterine cavity; however, the visualization of this tissue in the peritoneal cavity, especially in the cases of its location outside the pelvis, is extremely difficult, even for experienced ultrasound specialists, so an additional diagnostic method that may be useful is magnetic resonance imaging [6]. Increases in serum α -fetoprotein (AFP) and serum β -hCG and decreases in oestriol levels during prenatal testing prior to week 20 of pregnancy may also be helpful in the diagnosis of abdominal pregnancy [7].

The case we described is probably a secondary abdominal pregnancy, because the chorionic tissue was also found in the fallopian tube and no chorionic tissue was found inside the uterine cavity. After the first procedure, despite the peritoneal toilet, the chorion must have been implanted in the peritoneal cavity. The fact of using MTX for this complication seems to be unique in our case study. Intramuscular MTX is typically used for the treatment of ectopic pregnancy in tubal location. In the literature, we found few case reports of the use of this drug in cases of abdominal pregnancy. A 2012 systematic review of cases of abdominal pregnancy includes descriptions of effective intramuscular MTX treatment as the only method and as an auxiliary method along with surgical procedures, vascular embolization, or intral-lesional injection of MTX or KCl. MTX was effectively used as the only method for abdominal pregnancy in the rectouterine pouch at β -hCG levels of 210 to 2619 mIU/ml [2]. However, MTX was usually used as adjuvant therapy in postoperative procedures. In the case of the location of an ectopic pregnancy on the intestinal surface, effective application of MTX after diagnostic laparoscopy confirming the position of the pregnancy at the β -hCG level of 1930 mIU/ml was

also described [8]. Currently, we do not have clinical predictors of effective MTX treatment; however, with poor clinical symptoms, in the case of haemodynamically stable patients, this method is worth considering, taking into account its low invasiveness, low cost, and a small percentage of complications related to the toxicity of the treatment. It appears that the levels of β -hCG at which MTX can be used in cases of ectopic fallopian tube pregnancy may be extrapolated to cases of abdominal pregnancy because the described cases have been shown to be effective at levels below 3000 mIU/ml. In our case, a single-dose schedule was used, and in the literature, multi-dose schedules with the use of folinic acid were also successfully used [2]. Another possible treatment in abdominal pregnancy is laparoscopy. [9] The advantage of laparoscopic procedures compared to laparotomy is shorter hospitalization time and less blood loss [10]. In cases of abdominal pregnancies, visualization with enlargement of the operative field may also be an advantage. In the literature, there are reports of treatment of very advanced abdominal pregnancies, e.g. 12 weeks of pregnancy [11].

The limitation of our case report is the lack of description of imaging diagnostic, the diagnosis of abdominal pregnancy was made "by exclusion". The description of the case was created to indicate the possibility of occurrence of this problem in clinical practice and the potential of pharmacological treatment.

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Disclosure

The authors declare no conflict of interest.

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