ECTOPIC PREGNANCY WITH OVOCYTE TRANSMIGRATION: A CLINICAL CASE REPORT

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ABSTRACT

The purpose of this article is to report a clinical case involving the occurrence of ectopic pregnancy (EP) and oocyte transmigration. A 33-year-old woman, native of Mozarlândia, Goiás, presented with polymenorrhea and dysmenorrhea after a positive pregnancy test. With no significant history of illnesses, the patient reported social alcohol consumption and previous use of oral contraceptives for 5 years. After the positive pregnancy test acquired at a pharmacy, she experienced vaginal bleeding and abdominal pain, leading her to an emergency consultation where the β-hCG test confirmed the pregnancy and a Transvaginal Ultrasound (TVUS) showed normal findings. With persistent symptoms, a second β-hCG test and subsequent TVUS revealed insufficient increase in hormonal levels and an adnexal mass with hemoperitoneum. A videolaparoscopy was performed, identifying an EP in the left fallopian tube and oocyte transmigration, treated with salpingostomy and ovarian cystectomy. The patient recovered well after surgery, without complications. This case highlights the importance of early diagnosis and timely surgical intervention in cases of EP, aiming to avoid severe complications and preserve the patient's fertility. The diagnosis and treatment of EP are challenging due to the ambiguity of symptoms. Technological advances have improved diagnosis, but half of the cases are not initially identified. Treatment can be medical or surgical, depending on the severity and reproductive desires of the patient.

KEYWORDS: ECTOPIC PREGNANCY; PREGNANCY TESTS; TUBAL PREGNANCY; ULTRASONOGRAPHY; ZYGOTE.

INTRODUCTION

The term ectopic pregnancy (EP) refers to the situation where fertilization and implantation of the eggs occur in a location other than the uterine cavity, making this condition one of the main emergencies in Gynecology and Obstetrics[1]. The rupture of the structures where EP occurs is the most common cause of maternal death in the first trimester of pregnancy and occurs because there is a structural incompatibility of the tissue with the gestational sac[2]. The precise rates related to the estimate of EP occurrence are not clear due to underreporting of cases that are often treated on an outpatient basis; however, it is estimated that in the United States of America, between 1 to 2% of pregnancies occur in this way[3].

Among the possibilities, the uterine tube, better known as the fallopian tube, is the most recurrent site of EP, accounting for 90% of cases[4]. This event can be fatal since it can be a causal factor for severe internal bleeding, leading to the death of up to 6% of pregnant women[2]. The risk factors for this condition are diverse and can be related to the mother's lifestyle habits, such as smoking, and even genetic factors[5].

The mechanisms by which the oocyte is captured by the fimbriae, structures present in the fallopian tubes, are still not clear in the world literature; however, there is evidence that, due to the anatomical structure and positioning of the uterus, tubes, and ovaries, oocyte capture occurs by the ipsilateral tube[1]. Despite this, it is known that there is an event, called oocyte transmigration, in which pregnancy occurs contralateral to the ovary responsible for ovulation, and the elucidation of the physiological mechanism for this explanation remains limited[6]. Thus, the objective of this article is to describe a case report in which there were two events, namely ectopic pregnancy and oocyte transmigration.

CASE REPORT

Patient, L. M. C., 33 years old, Caucasian, from Mozarlândia - Goiás (GO), sought gynecological medical care at a private clinic in the city of Goiânia - GO complaining of polymenorrhea and dysmenorrhea after being diagnosed with pregnancy through a pharmacy-sold test. Regarding her medical history, the patient denies a history of prior pregnancies, does not report chronic diseases, genetic conditions, blood pressure alterations, or smoking habits. She reports social alcohol consumption. She reports continuous use of Ofolato D 10,000 IU and Reconter 10mg (Escitalopram Oxalate), in addition to the oral contraceptive Stezza Merk 2.5mg/1.5mg (Nomegestrol Acetate/Estradiol) for the past 5 years which she stopped using 4 months before with the intention of getting pregnant.

From the detailed history, the patient reports that she

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started her menstrual cycle on December 6, 2023, which was expected, and that the bleeding continued until December 9, 2023, with a heavier flow than usual. The patient reports that until then, her cycle was normal with a medium flow lasting 3-4 days. On December 13, 2023, there was another episode of bloody discharge associated with mild pain, cramping, in the lower abdominal region, predominantly in the hypogastric region. Due to this, a pharmacy-sold pregnancy test was performed, which confirmed the positive result.

Therefore, on the following day, December 14, 2023, the patient sought emergency care in Goiânia - GO, where the Beta-human Chorionic Gonadotropin (β-hCG) test was performed, which was reactive, confirming the positive result with a value of 141.7 mIU/ml. Additionally, a Transvaginal Ultrasound (TVUS) was requested to investigate the origin of uterine bleeding, and the examination did not detect any apparent abnormalities. The exam showed the uterus in anteversion, centered, with normal shape and size, with well-defined and precise contours, myometrium with homogeneous acoustic texture and symmetrical walls, closed endocervical canal, and regular junctional zone. The endometrial echo was present, well-defined, regular, trilaminar, with a thickness of 6.9 mm. The ovaries were normal in size and echogenic pattern, with the left ovary measuring 2.56 x 1.75 x 1.89 cm and a volume of 4.40 cm^3, and the right ovary measuring 2.67 x 1.98 x 2.0 cm and a volume of 5.58 cm^3. (Figure 1). Consequently, the patient returned to work activities without restriction in her routine, maintaining exercises with effort, however, still experiencing constant, uncomfortable but non-limiting pain, which did not require analgesic medication.

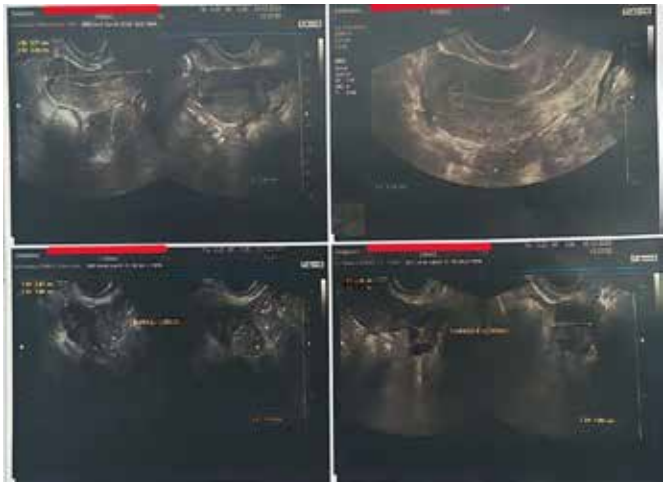

Figure 1 - TVUS performed on December 14, 2023, showing normal uterus and adnexal

On December 18, 2023, another β-hCG test was performed, showing a quantitative result lower than expected, with a value of 291.7 mIU/ml. Additionally, the picture of polymenorrhea remained constant. Therefore, considering these data, the patient was advised to seek medical care in Goiânia - GO, at a private clinic, in order to undergo TVUS for detailed gynecological analysis. Furthermore, she was recommended to take one tablet of Utrogestan 200 mg. The TVUS was performed on December 24, 2023, showing an adnexal mass of 4.0 cm on the right side and hemoperitoneum (Figure 2). Given these findings, laparoscopy was performed to investigate the findings of the exam.

Figure 2 - TVUS performed on December 24, 2023, showing a right adnexal mass and hemoperitoneum.

Therefore, the patient was immediately admitted to the hospital for treatment initiation. She was promptly referred to the operating room, where she underwent laparoscopy. During the procedure, a gestational sac was identified in the left fallopian tube, containing embryonic material inside. Salpingostomy and cystectomy of the right ovary were performed, followed by cleaning and aspiration of the hemorrhagic content in the abdominal cavity due to the ruptured ectopic pregnancy (Figure 3). Both fallopian tubes and ovaries were preserved. There were no surgical complications. The patient's progress was satisfactory, and she was discharged the day after the surgery.

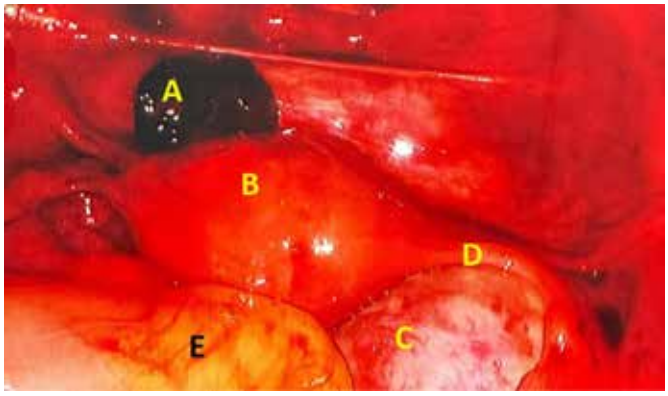

Figure 3 - Image obtained by laparoscopy showing A. Gestational sac after removal from the left tube; B. Uterus; C. Right ovary containing an adnexal cystic mass; D. Right fallopian tube; E. Rectum

DISCUSSION

This study presents a case report aiming to describe the patient's diagnostic process. Ectopic pregnancy (EP) is an important factor in maternal morbidity due to its challenging diagnosis[5]. Additionally, factors such as smoking, pelvic inflammatory diseases, and increased use of assisted reproduction techniques may be crucial in increasing

the incidence of EP. However, these data are still hypotheses, as there is still no exact relationship regarding identifiable risk factors for EP. It is more clearly associated with factors that cause damage to the fallopian tubes[5].

In the literature, several authors seek to identify more causal factors of EP, with a positive association found between age (>35 years), infertility, contraceptive failure, previous EP, and previous spontaneous abortion[1,5,6]. It is worth noting that in the present clinical case, there is no association with the aforementioned pathophysiological factors. Another similar case to the one described in this clinical case is reported in the literature, as described by Sikorski; Zrubek (2003). Therefore, the importance of early diagnosis and the need for more studies to understand the pathophysiological aspects of EP are emphasized. The work of Sikorski; Zrubek (2003) includes an important observation regarding the transperitoneal migration of spermatozoa, ova, or zygotes, found through the visualization of the corpus luteum in the ovary contralateral to the tubal implant[8].

The clinical presentation of EP is ambiguous, with signs and symptoms commonly compatible with the onset of pregnancy, such as pain and vaginal bleeding, as reported in the current case, and there may even be an absence of signs and symptoms. Bleeding in EP is due to the decidual shedding of the endometrial layer and can vary in intensity, ranging from light spotting to heavy bleeding. As for pain, the variation is even greater depending on the patient, which can be localized on only one side or generalized [1,5].

The diagnosis has substantially improved due to technological advances in ultrasound and hormonal testing. However, it still presents a challenge for gynecology, as approximately 50% of women do not receive the diagnosis at the first presentation, as described in the current case under evaluation[5]. Quantitative values with significance in β-hCG can already be identified from the 8th day of gestation, and monitoring its level is an important tool to assist in the diagnosis of EP[1]. The rate is measured every 48 hours to distinguish a normal from an abnormal pregnancy, and when there is a variation greater or lesser than expected for the stage of gestation, EP or early pregnancy loss is suspected[1]. Other methods such as serum progesterone levels, biomarkers, and transvaginal ultrasound can also be used[1].

Regarding treatment, one should opt primarily for less invasive routes when possible, such as the administration of methotrexate, a medication that targets cells with high mitogenic activity. On the other hand, in more severe cases and even in advanced EP, surgical intervention is necessary, through salpingostomy or salpingectomy [5,1]. Regarding surgical technique, in general, an endoscopic approach is consensually preferable, as randomized studies confirm the advantage of a minimally invasive approach. Among the main advantages are: reduced operative time, lower risk of postoperative adhesions, shorter hospital stay, and a shorter and accelerated return to daily life activities, as well as work activities[10].

Regarding the safety of the entry method, open or closed, studies show that there is no significant difference between the two[10]. The technique of salpingectomy consists of removing the fallopian tube; if it has not been planned before the start of the surgery, it is recommended to assess the viability of the contralateral fallopian tube[10]. During removal, priority is given to removing the EP in situ to avoid the risk of rupture in the abdominal cavity, with the risk of subsequent EP[10]. The salpingostomy technique consists of resecting the gestational sac while preserving the fallopian tube. The incision should be minimal, allowing the ectopic to be easily expelled or removed (usually between 1 and 2 cm). If this does not occur spontaneously, hydrodissection techniques can be used to facilitate removal; however, the surgeon must be careful not to rupture the ectopic[10].

Salpingectomy is indicated for patients with EP larger than 5 cm in diameter, significant tubal damage, hemorrhage, or previous tubal ligation. However, for patients who wish to preserve fertility, salpingostomy is recommended to preserve the fallopian tubbe [9,10]. Regardless of the technique used, after the procedure, abdominal washing is recommended to aspirate any trophoblastic tissue accidentally spilled during surgery, given the risk of a new EP[10]. In general, surgical intervention presents more satisfactory results when compared to clinical treatment. On the other hand, both surgical and clinical management did not show a significant difference regarding fertility rate. Therefore, it is recommended that the physician consider other factors for decision-making, such as hemorrhage, patient stability, and fertility [5,6,9,10].

CONCLUSION

Diagnosis and treatment of ectopic pregnancy (EP) represent significant challenges in clinical practice, given the ambiguity of symptoms and the need for early intervention to avoid serious complications. While technological advances have improved diagnosis, about half of cases are still not initially identified. Treatment, preferably less invasive, may include medical methods such as methotrexate or surgical intervention such as salpingostomy or salpingectomy, with the choice depending on the severity of the case and the patient's reproductive desires. Although there is no significant difference in fertility after surgical or clinical treatment, other factors such as patient stability should be considered in the therapeutic decision. Further studies are needed to fully understand the risk factors and optimal approaches for the diagnosis and treatment of EP.

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