

# **PARAOVARIAN ECTOPIC PREGNANCY IN A PATIENT USING A NORMOPOSITIONED INTRAUTERINE DEVICE: A CASE REPORT**

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**Abstract:** Unplanned pregnancy is a worldwide reality and corresponds to a large part of all pregnancies. The Intrauterine Device (IUD) is one of the most effective contraceptive options. Ectopic pregnancy is any pregnancy that is located outside the uterine cavity – the normal site of implantation and embryonic development. The ovum can settle in various regions of the maternal organism, such as the abdominal cavity, fallopian tubes, ovaries, cervical canal and uterine horns. About 95% of cases are located in the fallopian tubes, resulting in a frequency of approximately 1 in 250 to 300 pregnancies. The aim of this study is to report the case of a patient with a normopositioned IUD and a concomitant ectopic pregnancy.

**Keywords:** Ectopic pregnancy, intrauterine device (IUD), maternal mortality, ultrasound

## INTRODUCTION

Intrauterine Devices (IUDs) are considered effective, safe and long-term contraceptive methods. They are classified as long-acting reversible contraceptive methods (LARCs - long-acting reversible contraception), since they last for more than three years and are effective in preventing unwanted pregnancies that affect approximately 40% of pregnancies worldwide. (PAULA et al., n.d.).

The pregnancy prevention effectiveness rate of intrauterine devices is between 0.2 - 0.8% – which makes these methods 99% effective and thus has real life failure rates similar to sterilization female surgery (FEBRASGO, 2015). It is noteworthy that effectiveness is measured by the failure rate of contraceptive methods called the Pearl Index (number of unwanted pregnancies per 100 women per year). With regard to the possibility of extrauterine pregnancy, intrauterine devices are considered a risk factor for ectopic pregnancy, since, if pregnancy occurs, the presence of the IUD increases the risk of

extrauterine pregnancy.

Ectopic pregnancy is considered the main cause of maternal death in the first trimester of pregnancy and has a prevalence rate of about 2% in relation to all pregnancies, with an increase in the incidence rates of ectopic pregnancy in recent years (WEN, Xi et al, 2021). Its importance is based on the high maternal risk, since the morbidity and mortality of ectopic pregnancy is associated with risks of rupture, abdominal bleeding, vaginal bleeding and infertility (COMMITTEE ON PRACTICE BULLETINS - GYNECOLOGY, 2018)

To reduce failures due to inadequate IUD insertions, it has been proposed to perform ultrasound examinations before and after insertion. The importance of carrying out transvaginal ultrasound (TV USG) is based on the possibility of evaluating the uterine cavity to establish uterine static, presence of malformations or alterations that distort the uterine cavity, while post-procedure USG TV enables the confirmation of its position, certifies the effectiveness and minimizes risks of myometrial invasion (HOLANDA et al., 2013). However, there are authors who argue that the clinical examination is adequate for assessing the position of the IUD and does not require transvaginal ultrasound for this purpose (TEIXEIRA; TEIXEIRA; TEIXEIRA, 2022).

Considering the increase in ectopic pregnancy rates in recent years, the purpose of this article is to report and alert to the need to adopt concrete parameters for the establishment of normal positioning of intrauterine devices and, as well, the indication of ultrasound monitoring.

## CASE REPORT

A 40-year-old Brazilian woman, G3P2 (2 cesarean sections) A0, presented at the Emergency Service complaining of chronic

pelvic pain, which had started for more than 6 months and had worsened for 02 days. She also reported vaginal bleeding that started 05 days before the acute onset of pain.

In the past pathological history, the patient denied any comorbidities or previous surgeries. She had an Oncological Colpocytological Examination dated 2022 without alterations. The contraceptive method adopted was the use of an intrauterine copper device that had been inserted for 04 years. She denied having performed ultrasound control to assess IUD placement.

On physical examination, she was in good general condition, afebrile, normal color, blood pressure 120/66 mmHg, heart rate 98 beats per minute, respiratory rate 16 breaths per minute and oxygen saturation 100% on room air. On abdominal examination, she had pain on deep palpation of the right iliac fossa, without signs of peritoneal irritation and on speculum examination there was discreet uterine bleeding and the IUD string could be seen. The remainder of the systemic physical examination was normal.

In the investigation with complementary exams, he presented a positive qualitative beta-HCG (human chorionic gonadotropin).

At this time, the patient underwent transvaginal ultrasound with the images described below:

## DISCUSSION

Intrauterine devices are methods used for contraception and belong to the group of long-acting reversible contraceptive methods (LARC – long-acting reversible contraception). They consist of objects that are allocated in the uterine cavity that prevent the occurrence of an unwanted pregnancy. Basically, there are two classic types: the copper IUD and the levonorgestrel hormonal IUD. The use of IUDs has increased in recent years, mainly due to the cost-effectiveness of the

method. It can be said that there are numerous benefits with the use of the method, such as ease of use, reversibility, long-term use, high efficacy, safety and tolerance (MACHADO, 2017). However, there is also the possibility of risks after insertion of the device, such as: local infection, sexually transmitted infections, uterine perforation, infection, expulsion, contraceptive failure and ectopic pregnancy.

Ectopic pregnancy is defined as the implantation of a fertilized ovum outside the endometrial cavity of the uterus and in most cases – with an incidence between 80-90% – the extrauterine pregnancy is located in the ampullary region of the uterine tube (GÖKSEVER et al. , 2016). Factors such as age, history of Pelvic Inflammatory Disease, Uterine Scars, Smoking, IVF and previous ectopic pregnancy are associated with a higher risk of ectopic pregnancy. It should also be noted that previous use of IUDs does not increase the risk of ectopic pregnancy, however, if pregnancy occurs, IUD users have an increased risk of developing ectopic pregnancy, which is considered a relative risk factor for the occurrence of extrauterine pregnancy.

With regard to the position of intrauterine devices in the uterine cavity, the IUD is considered well positioned when the distance between the uterine fundus and the apex of the IUD varies between 0.5 and 2.5 cm, both arms of the device extend to the horn, rod oriented vertically in the uterine body and the threads exiting through the cervical os into the vaginal canal. However, for many authors, the normal position for the IUD in TVUS consists of the presence of the longitudinal rod located above the internal orifice of the uterine cervix, regardless of its distance from the bottom of the uterine cavity. Meanwhile, the malposition that is correlated with less effectiveness of the method is the ultrasonographic finding of low implantation of the nail, with its distal portion

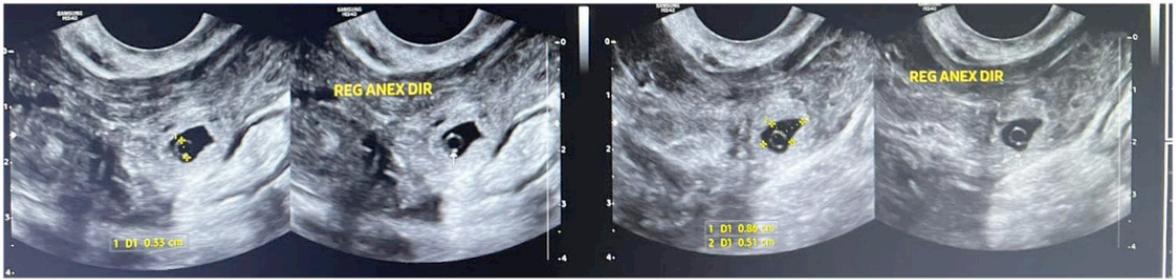


Figure 1: Image demonstrating the presence of a gestational sac with a yolk sac in the right adnexal region.

Source: the authors



Figure 2: Uterine cavity with absence of gestational sac.

Source: the authors.



Figure 3: Images demonstrating normopositioned IUD.

Source: the authors

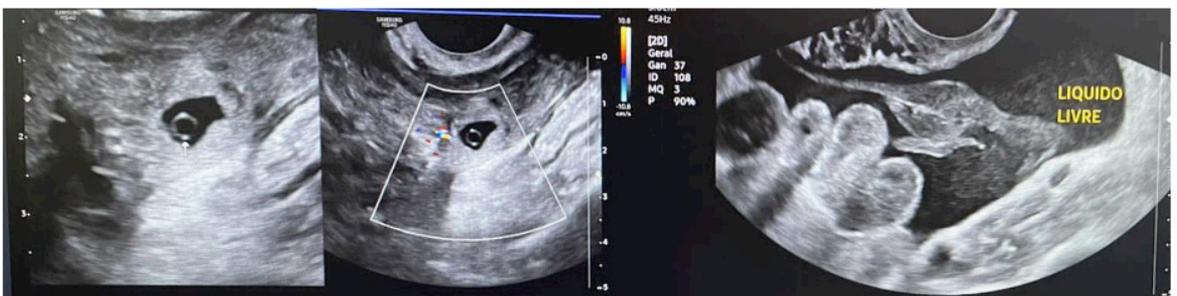


Figure 4: Image of the gestational sac and yolk sac in the right adnexal region and the presence of free fluid in the pelvic cavity.

Source: the authors

surpassing the internal cervical os. Therefore, transvaginal ultrasound, the gold standard imaging method for identifying malpositions. However, according to Makena et al. in asymptomatic women with no complications during IUD insertion, control TV USG performed at 6 weeks has no benefit over clinical examination with wire verification.

It is concluded that in a patient using an IUD with symptoms suggestive of ectopic pregnancy (such as bleeding and pelvic pain) and/or risk factors for ectopic pregnancy, the ultrasound evaluation associated with the clinical examination is necessary, since the development of an ectopic pregnancy can result in significant maternal morbidity and mortality.

## REFERENCES

COMMITTEE ON PRACTICE BULLETINS—GYNECOLOGY. ACOG Practice Bulletin - Tubal Ectopic Pregnancy. *Obstetrics & Gynecology*, v. 131, n. 2, p. e65–e77, 2018.

FINOTTI, Marta. FEBRASGO. **Manual de Anticoncepção**. Febrasgo, 2015. Disponível em: <<https://central3.to.gov.br/arquivo/494569/>>.

GÖKSEVER, Hale; MED, İstanbul; ÇELİK, Hale; et al. **Introduction Case Report**. *Istanbul Medical Journal*, 2016. Disponível em: <[https://cms.galenos.com.tr/Uploads/Article\\_20847/IMJ-17-110-En.pdf](https://cms.galenos.com.tr/Uploads/Article_20847/IMJ-17-110-En.pdf)>. Acesso em: 23 nov. 2022.

HOLANDA, Antônio Arildo Reginaldo de; PESSOA, Aline de Melo; HOLANDA, Julita de Campos Pipolo; *et al.* **Adequação do dispositivo intrauterino pela avaliação ultrassonográfica: inserção pós-parto e pós-abortamento versus inserção durante o ciclo menstrual**. *Revista Brasileira de Ginecologia e Obstetrícia*, v. 35, p. 373–378, 2013. Disponível em: <<https://www.scielo.br/j/rbgo/a/cFP7LdCDkDp3b9pB4SB3LPd/?lang=pt>>. Acesso em: 19 set. 2022.

MACHADO, Rogério. **Uso de dispositivos intrauterinos (DIU) em nulíparas. Série, orientações e recomendações**. [s.l.]: Federação Brasileira das Associações de Ginecologia e Obstetrícia (FEBRASGO), 2017. Disponível em: <[https://www.febrasgo.org.br/media/k2/attachments/16-serie\\_diu.pdf](https://www.febrasgo.org.br/media/k2/attachments/16-serie_diu.pdf)>.

MAKENA, Dorothy; GICHERE, Ingrid ; WARFA, Khadija. **Levonorgestrel intrauterine system embedded within tubal ectopic pregnancy: a case report**. *Journal of Medical Case Reports*, v. 15, n. 1, 2021.

PAULA, Ana; JUNGES, Pedroso; MEURER DE ANDRADE, Andrei; *et al.* **Promoção e Proteção da Saúde da Mulher**. *ATM 2023/2*. Departamento de Ginecologia e Obstetrícia - UFRGS. [s.l.: s.n., s.d.]. Disponível em: <<https://www.lume.ufrgs.br/bitstream/handle/10183/223064/001127622.pdf?sequence=1>>.

TEIXEIRA, Arildo Correa; TEIXEIRA, Bernardo Correa de Almeida ; TEIXEIRA, Gustavo Correa de Almeida. **Aspectos atuais da avaliação do dispositivo intrauterino (DIU) pelos métodos de imagem e suas principais intercorrências / Current aspects in the evaluation of the intrauterine device (IUD) by the image methods and its main intercurrências**. *Brazilian Journal of Health Review*, v. 5, n. 1, p. 1536–1552, 2022.

WEN, Xi; YAN, Xiaoying; ZHANG, Qinquan; *et al.* **Retroperitoneal Ectopic Pregnancy: A Case Report.** Journal of Minimally Invasive Gynecology, v. 28, n. 9, p. 1662–1665, 2021. Disponível em: <<https://www.sciencedirect.com/science/article/pii/S1553465021002302>>.