

Ovarian Ectopic Pregnancy: A Rare Entity of Extrauterine Pregnancy (A Case Report)

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Abstract

Ovarian ectopic pregnancy is a rare condition that carries an immediate risk of life-threatening hemorrhage and subsequent risks of infertility and recurrence. Clinicians should be well equipped to diagnose and treat this unusual form of ectopic pregnancy at the earliest. The incidence of ovarian pregnancy is increasing due to the rising incidence of infertility and the use of assisted reproductive technologies. The diagnosis is often made during surgery and requires histological confirmation. Ultrasound can detect ovarian gestations in unruptured cases but cannot easily differentiate an ovarian pregnancy from another tubal pregnancy in a ruptured state. A conservative surgical approach remains the treatment of choice. In cases of ovarian pregnancy after early surgical treatment of the disease, the success rates of future pregnancies are considered very satisfactory. We report here an unusual case of ovarian ectopic pregnancy. Our patient is a 26-year-old nulliparous woman, with no particular history. Ruptured ovarian pregnancy was suspected by endovaginal echography. A laparotomy was performed urgently, showing a ruptured ovarian ectopic pregnancy, and a wedge-shaped resection of the ovary was performed. Histopathological examination confirmed that it was an ovarian ectopic pregnancy.

Keywords: Ectopic pregnancy, ovarian pregnancy, oophorectomy, laparotomy.

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INTRODUCTION

Most ectopic pregnancies occur in the fallopian tube (so-called tubal pregnancies), but implantation can also occur in the cervix, ovaries and abdomen. It is a serious and common condition with considerable health risks for reproductive aged women. In addition to the immediate risks of life, threatening hemorrhage and those related to its treatment, women with ectopic pregnancies have a subsequent increased risk of infertility and recurrent ectopic pregnancy. Advance ovarian pregnancies are exceptional. Approximately 75% terminate in first trimester and are often misdiagnosed as corpus luteum haemorrhage [1].

An ovarian pregnancy is differentiated from a tubal pregnancy by the Spiegelberg criteria. These criteria are: 1) an intact ipsilateral tube, clearly separate from the ovary, 2) a gestational sac occupying the position of the ovary, 3) a gestational sac connected to the uterus by the utero-ovarian ligament, 4) ovarian tissue in the wall of the gestational sac [2]. Ovarian

pregnancy is uncommon form of ectopic pregnancy with an incidence of 1/7000-1/40,000 live births and 0.5-3% of all ectopic gestations [3].

Its incidence after natural conception ranges from 1 in 7000 to 1 in 60,000 [4-6], and it remains a rare phenomenon despite the increased incidence of ectopic pregnancies following assisted conception [7]. Ovarian pregnancy occurs in the corpus luteum and often results in ovarian rupture and massive hemoperitoneum.

Role of USG in diagnosis of ovarian gestation has been described but most of the patients present with ruptured ectopic and are in circulatory collapse so preoperative diagnosis of ovarian ectopic on sonography is not easy [8, 9].

CASE REPORT

A 26-year-old woman, nulliparous (no notion of abortion), with no particular medical or family

history. She had not used any means of contraception, nor any means of medically assisted procreation. Her menstrual cycle was regular and her last menstrual period was seven weeks ago. In front of this symptomatology, the patient realized a pregnancy test, which was positive.

The patient was admitted to our gynecological emergency room for acute pelvic pain with minimal blackish metrorrhagia associated with nausea and vomiting. She had no vaginal bleeding, no vomiting and no pain until that day.

On admission, her pulse was 90 beats per minute, blood pressure 90/68 mmHg, temperature 36.5 C, and respiratory rate 18 breaths per minute. Her abdomen appeared distended, and there was marked rebound tenderness. Pelvic examination revealed a purplish gravid cervix with minimal dark bleeding (a closed cervical os), right iliac fossa tenderness, with a normal-sized uterus with severe sensitivity during the movement of the cervix and the palpation of the right adnexa with no palpable latero-uterine mass.

Clinically, an ectopic pregnancy was suspected. The beta HCG level was 7,567 IU/l. Endovaginal ultrasound showed a normal-sized empty uterus with thickened endometrium and no visible gestational sac, with a complex right ovarian mass with a 12×9mm cystic area on the right side with another echogenic area medial to the right ovary (Fig. 1) with a moderate amount of fluid in favor of a probably ruptured right ovarian ectopic pregnancy. The left and right ovaries were visualized and appeared normal. The Morrison interspace was free.



Fig 1: Ultrasound image of an ovarian ectopic pregnancy (our case)

The patient was rushed to the operating room where she had an explorative laparotomy under general anesthesia. During the exploration: Presence of multiple blood clots in the abdominal cavity with moderate hemoperitoneum. After aspiration of the hemoperitoneum, examination of the right adnexal region revealed the presence of a ruptured right ovarian extrauterine pregnancy; a hemorrhagic mass of 3x2.5

cm was observed on the right ovary. A gentle resection of the ovarian mass was performed preserving most of the ovarian tissue. The right tube, the left tube and the left ovary were normal.



Fig 2: Intraoperative finding of an ectopic ovarian pregnancy (our case)

The postoperative recovery was normal with a clinical improvement, the HCG cinetics were decreasing and the patient was discharged home on the fourth post-operative day.

Histopathological examinations of the tissue specimens revealed an ovarian pregnancy. In the ovarian tissue, choironic villi and blood clots were found.

DISCUSSION

Ectopic pregnancy is characterized by implantation and development of an embryo outside of the uterine cavity. It can occur in the ovary (3.2%), or abdomen (1.3%) [10]. It is characterized by a poor clinical symptomatology and a difficult ultrasound diagnosis. The ovarian pregnancy is the most common form of a nontubal ectopic pregnancy is a rare entity but incidence is on rise, and is estimated to account for about 0.5%-3% of all cases [12]. The implantation of the fertilized ovum may involve the inner of the ovarian cortex (primary) or the surface of the ovary (secondary) [11].

The primary ovarian pregnancy is rarer and is estimated to affect the 1/6000 to 1/40000 of all pregnancies [13]. Nevertheless, the increased vascularity that characterizes a pregnancy and the proximity of the ectopically implanted trophoblast with

the ovarian and uterine vessels can lead to a massive and life-threatening bleeding [14]. Recent studies suggest that the actual incidence could be up to 1 in 1400 deliveries if the criteria other than those of Speigelberg's are taken into consideration [15].

There is overall increase incidence of ectopic gestation due to increasing prevalence of sexually transmitted disease and PID, induced abortions, assistant reproductive techniques and increased availability of diagnostic facilities. Increased incidence of ovarian pregnancies may be associated with IUCD as it prevents intrauterine but not extra uterine pregnancies (IUD reduces uterine implantation by 99.5%, tubal implantation in 95% and they have no effect on ovarian location) [16-18].

The main risk factor that has so far been proven responsible for the implantation of the fertilized ovum in the area of the ovary is the use of contraceptive devices. Intrauterine contraceptive devices may also be a cause [19]. Its action could be explained by altered tubal motility, there by facilitating the implantation in the ovary [15].

Other risk factors are found in the literature, such as endometriosis and previous abdominal surgery [20], tubal ligation [21], fertility treatment ,cases of ectopic ovarian pregnancy have also been reported, which occurred after subtotal hysterectomy [22].

More rarely, ovarian pregnancy can occur without the presence of the classic risk factors previously described (our case) [23].

The ovary can adapt more easily than the fallopian tube to pregnancy expansion, but 75% of ovarian pregnancies ruptured early in the first trimester and are mistakenly diagnosed as corpus luteum hemorrhage [1].

The Preoperative diagnosis of an ovarian pregnancy is not simple. The clinical symptomatology is not very different from that of a tubal pregnancy. The diagnosis is often made at surgery and requires histological confirmation.

Transvaginal ultrasonography in combination with quantification of β -HCG levels has significantly increased the accuracy of diagnosis .Transvaginal ultrasonography plays a key role in the preoperative diagnosis of an unruptured ovarian pregnancy, whereas in ruptured cases there are no typical ultrasonographic findings that could differentiate it from a ruptured tubal pregnancy or a ruptured corpus luteum cyst [24].

Some ultrasound criteria have been proposed for the diagnosis of ovarian pregnancy: a large echogenic ring with a clear echogenic inner zone on the surface of the ovary; the presence of ovarian cortex

(corpus luteum or follicles) around the mass; and the echogenicity of the ring is usually greater than that of the ovary itself [25].

In cases where ultrasound findings are ambiguous or inconclusive [26] the use of MRI may be useful.

Treatment of ovarian pregnancy is divided into two groups: surgical and conservative, depending on the time of diagnosis.

Methotrexate is the most commonly used medicine with the best therapeutic results. It can be used in early stage patients with hemodynamic stability [27].

The surgical approach with open or laparoscopic access consists of wedge resection of the ovary and suturing of the remaining ovarian tissue. During our laparotomy, an ovarian pregnancy was clearly seen and an ovarian wedge resection was done.

In cases where the diagnosis is made late and with severe bleeding, oophorectomy or adnexectomy may be necessary [28].

CONCLUSION

Ovarian ectopic pregnancy is a rare variant of ectopic gestation. The incidence of ovarian pregnancy is increasing due to the rising incidence of infertility and the use of assisted reproductive technologies. The diagnosis is often made during surgery and requires histological confirmation. Ultrasound can detect ovarian gestations in unruptured cases but cannot easily differentiate an ovarian pregnancy from another tubal pregnancy in a ruptured state. A conservative surgical approach remains the treatment of choice. In cases of ovarian pregnancy after early surgical treatment of the disease, the success rates of future pregnancies are considered very satisfactory.

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