



Case Report

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Unruptured Ovarian Ectopic Pregnancy: A Rare Case



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Abstract

Ovarian pregnancy is one of the rarest ectopic pregnancies, its frequency is estimated to be between 2 to 3% of all extra uterine pregnancies. its diagnosis and treatment course are not the easiest. It is a particular pathology, with poor clinical symptoms and sonographic criterias. We are reporting the case of a patient who is gravida 3 para 1 admitted to our ER with pelvic pain and vaginal bleeding, with an amenorrhea of 9 weeks and 3 days. Her β hCG level was 2456 UI/ml, and preoperative ultrasound showed a right latero-uterine ectopic mass and free fluid in the peritoneum. An emergency laparotomy was performed finding a right ovarian pregnancy, conservative treatment was done. Unlike tubal ectopic pregnancies, patients with primary ovarian pregnancy are likely to have a successful intra-uterine pregnancy in the future.

Keywords: Case report; Ovarian pregnancy; Ectopic pregnancy; Latero-uterine mass; Laparotomy; Infertility

Introduction

Extra uterine pregnancy is an ectopic implantation of the fertilized egg outside of the uterine cavity. The most frequent localization is tubal, and will rarely be ovarian. Its frequency is 3,2% [1]. The extra uterine pregnancy is the primary cause of mortality in the first trimester of pregnancy despite the progress made in early diagnosis; in order for it to be possible the diagnosis of ectopic pregnancy must be brought in front of the slightest call sign [2]. The ovarian pregnancy is considered to be one of a kind not only due to its rarity but also to its mysterious physiopathology [3]. Its diagnosis is more likely to be made during the surgical procedure [4]. We report a case of an ovarian pregnancy, and we will further discuss its physiopathology, diagnosis and treatment.

Case Report

We hereby present the case of a 34-year-old woman, gravida 3 para 1 with one living child delivered via c-section and one miscarriage, who came to our emergency department presenting with right pelvic pain that started 5 days prior to her admission, metrorrhagia, and amenorrhea of 9 weeks and 3 days. She has no history of sexually transmitted infections. The patient was actively trying to conceive, therefore no contraceptive pills were taken.

Clinical findings showed very pale conjunctiva, her heart rate was 122 beats per minute, her blood pressure was 106/48 mmHg on initial examination. A pelvic exam revealed a closed cervix

with minimal vaginal bleeding, and right pelvic guarding upon the palpation. The β hCG quantitative level was at 2456mUI/mL, and hemoglobin was 10.0g/dL. A transvaginal ultrasound revealed an empty uterus, free fluid in the pelvis with a right latero-uterine ectopic mass measuring 51x43mm, the left ovary seemed normal. No fetal pole or yolk sac was noted in this area.

Due to the elevated β hCG, and the ultrasound findings, a laparotomy was performed. Intraoperative findings showed a massive hemoperitoneum estimated to 1 liter approximately, an ectopic pregnancy located in the right ovary measuring 6cmx4cm, normal appearing uterus, a normal appearing fallopian tubes, an intact left ovary. A conservative approach was performed and only a part of the ovarian cortex was excised with the ectopic pregnancy. Histological findings showed chorionic villi, extensive hemorrhage and inflammation confirming the diagnosis of an ovarian ectopic pregnancy. Her postoperative exam was uneventful, the patient was discharged 2 days after. At her two weeks checkup, the patient's BHCG was 7mUI/mL.

Discussion

Ovarian pregnancy was initially suspected by Mercreus in 1614, then later confirmed by Grall in his studies [5]. The frequency of this pathology is estimated to be between 2-3% of all extra uterine pregnancies, which represent an incidence of 1/2500 to

1/5000 pregnancies [6]. The population at risk is slightly different from patients presenting with tubal pregnancies since it is represented by younger women, more fertile, multiparous and having an IUD [7]. In their series, Riethmeller and al. found 2 cases of ovarian ectopic pregnancy on other women, less fertile and without IUD [8], our patient was 34 years old, fertile, and didn't have an IUD. E. Phillippe [9] found that the average age of ovarian pregnancies is 29 years old which is close to the age of our patient. Regarding the parity number, our patient was para 1. The authors' opinions are divided on this factor in the genesis of ovarian ectopic pregnancies: according to Grall [5] parity does not seem to play a role because in his 4 cases he noted that two of them are secondiparous and the two others are multiparous, which means an incidence of 50%, meanwhile E. Phillippe states that multiparous women carry ovarian pregnancy in 73 to 84% of cases [9].

Fertility And Age Were Identified as Risk Factors in Our Case

Unlike tubal pregnancy, tubal pathology and surgery does not seem to increase the risk of ovarian pregnancy, however the role of inflammatory pathologies of the pelvis in the genesis of ovarian pregnancies is not unanimous among authors [10]. Ovarian pregnancy can be explained by the implantation of the fertilized egg on the ovarian cortex and be located either inside the follicle or outside of it. Its physiopathology is still mysterious to this day, but multiple hypothesis have been made. One of them would be the transtubal reflux of the ovocyte towards the ovary, those findings have been suggested due to encountering this pathology after IVF [9,11].

Regarding the diagnosis, earlier there was 4 criterias described by Spiegelberg in 1878 to diagnose an ovarian pregnancy : 1. Both fallopian tubes must be completely intact 2. Foetal sac must be located in the ovarian area 3. The ectopic pregnancy and the ovary must be connected to the uterus by the ovarian ligament 4. Presence of the ovarian tissue in the foetal sac [12]. Nowadays, new criterias have surfaced in order to diagnose this disease, mostly biochemical and radiological by ultrasonography : 1. Serum β hCG > 1000 IU/L 2. Absence of gestational sac at transvaginal sonography 3. Ovarian implication and normal tubes confirmed by surgical exploration 4. Absence of serum β hCG after treatment of the ovary [13,14].

A clinical triad is used to diagnose an ectopic pregnancy : heavy abdominal pain, amenorrhea, vaginal bleeding [15], these findings can also be found in corpus luteum hemorrhage which can lead us to a misdiagnosis [16]. Abdominal pain can be explained by the rupture of the ovarian capsule and the formation of hemoperitoneum [14,17], that can cause a hypovolemic shock, which is a serious condition that can lead to death if not treated properly. In our case, the patient presented with the classical triad. In a case reported by Pan and al. an ovarian ectopic pregnancy presented as adnexal torsion [18].

Early diagnosis can be made in patients who presents vagi-

nal bleeding and pelvic pain without them being in hemorrhagic shock, by transvaginal USG and β hCG, this is the case for our patient, but most of them presents to the ER with ruptured ectopic pregnancy leading to a circulatory collapse making the preoperative diagnosis difficult [19].

Ultrasonographic appearance of ovarian ectopic pregnancy is : a wide echogenic ring with an internal echo lucent area on the ovarian surface, the presence of ovarian cortex, including corpus luteum or follicles around the mass, and the echogenicity of the ring is usually greater than that of the ovary itself [18,20]. Multiple treatment choices have been described ranging from surgical to conservative. Surgically, the techniques may vary with either open or laparoscopic access : A wedge resection of the ovary and suturing of the remaining ovarian tissue ,as described in our case, for more difficult cases with circulatory collapse the only option remaining is a radical one : oophorectomy or adnexectomy [21].

The medical treatment for ovarian pregnancies by methotrexate is an option, it was first described in 1992 by Shamma [22], a unique dose of MTX 50mg/kg is injected IM. But because of the late diagnosis of the pregnancy generally associated with a hemoperitoneum, this option remains impossible. However, Annunziata [23] proposed the following criterias to instore a medical treatment : gestational sac < 30mm of diameter and no visible embryo (<6GW). We can also associate both techniques : a laparoscopy treatment and MTX for better outcomes [24].

For the prognosis, since the ovarian pregnancy is only limited to the ovary and does not extend to the Fallopian tube, it is not a risk factor for another ectopic pregnancy. Only one case of recurrent ovarian pregnancy on the contralateral ovary has been reported in 1993 [25].

Conclusion

Ovarian pregnancy is a rare form of ectopic pregnancies, its clinical aspect resembles a tubal pregnancy. Sonography findings help differentiate these two entities. Especially when the patient is stable and not in hypovolemic collapse. The most effective treatment option is surgical. To histologically confirm the diagnosis there must be ovarian tissue within the gestational sac and chorionic villi within the ovarian tissue. A successful intrauterine pregnancy can be expected following a primary ovarian pregnancy.

Ethnics Approval and Consent to Participate

Ethnics approval has been obtained to proceed with current study. Written informed consent was obtained from the patient for participation in this publication.

Consent for Publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-In-Chief of this journal.

Availability of Data and Materials

Supporting material is available if further analysis is needed.

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