Ovarian pregnancy: A Rare Entity of Extra-Uterine Pregnancy

Two Cases and Review of Literature

Andatia. Malide, N. Mamouni, S. Errharay, C. Bouchikhi, A. Banani

Obstetric service of gynaecology I, CHU HassanII, Fès Moroco

Corresponding Author: Andatia. Malide
andatia @yahoo.fr

ABSTRACT

Ovarian pregnancy is a rare entity among ectopic pregnancies. Its diagnosis and management are not always easy. 

Objective: To support the clinical and therapeutic characteristics of ovarian pregnancy. 

Materials and Methods: This is a three-year retrospective study. During which we collected cases of ovarian pregnancy. The diagnosis was based on surgical data confirmed by pathological examination. 

Results: We collected two cases of ovarian pregnancy. Our two women were 27 and 30 years old and had 6 to 15 weeks of amenorrhea. All our patients were suffering from abdominal pain of varying intensity. The preoperative diagnosis was discussed on an ultrasound in one case. Two laparotomies were performed in two cases due to shock. Surgical treatment was conservative in two cases. We did not use any medical treatment. 

Conclusion: Ovarian pregnancy is a rare entity of ectopic pregnancy with semiotic features. Its diagnosis is difficult and is based on intraoperative results. Its therapeutic treatment remains for the treatment of ectopic pregnancies, despite advances in medical treatment, surgery.

Keywords: Ovarian pregnancy, rare ectopia, ultrasound, conservative treatment

1. INTRODUCTION

Ectopic pregnancy (GEU) is one of the most common medical and surgical emergencies in gynecology. The trunk is the usual seat of ectopic pregnancy (93% of cases)\(^1\). The ovary occupies the second place\(^1\). Ovarian pregnancy accounts for 3% of all ectopic pregnancies\(^2\). Its pathophysiology is poorly understood, it seems to be secondary to a reflux of the fertilized oocyte to the ovary\(^3\). It occurs in 1/2100 to 1/7000 pregnancies\(^3\).

Preoperative diagnosis of this type of pregnancy is difficult. The clinician is confronted with poor clinical semiology and difficult ultrasound diagnosis. The surgical criteria remain difficult to prove\(^4\). We report three cases of ovarian pregnancy, a review of literature and discuss the ultrasound diagnostic criteria as well as the modalities of management of this rare entity.
2. METHODS

This is a retrospective observation study that was carried out on 2 patients from moth 2014 - August 2016), during which we collected 2 cases of ovarian pregnancies. The diagnosis was referred to ultrasound criteria or after per-operative findings. The data from the pathologic examination confirmed the diagnosis. The therapeutic management was based mainly on clinical criteria and secondarily on ultrasound data. Postoperative monitoring was based on the clinical examination and kinetics of gonadotropic chorionic hormone (HCG) in the case of conservative treatment.

3. CASE REPORT

Case One

Female aged 30 years without a significant pathological history, primiparous, without concept of contraception, consulted for left lateral-pelvic pain with amenorrhea of 15 weeks. The admission examination records pallor, tachycardia at 110bpm and low blood pressure at 70 / 45mmhg. Pelvic touch finds a painful filling of the posterior vaginal cul-de-sac. The speculum examination finds a pregnant long posterior closed neck and vaginal touch a slightly enlarged uterus, a lateral left uterine mass. Faced with these signs of shock, she was transferred to the operating room. The pelvic ultrasound performed in the operating room showed an empty uterus with a left lateral-uterine image, 8/7 cm heterogeneous, suggestive of ectopic pregnancy with non visualization of the contralateral ovary and a large intra-abdominal effusion. (Fig.1).

In view of this clinical picture of shock in relation to the presumed diagnosis of a ruptured UG, a laparotomy was performed in an emergency. A two-liter hemoperitoneum was evacuated with a ruptured left ovarian GEU, a fetus and placenta was found (Figure 2) and (Figure 3).

Fig: 1: Empty uterus with endometrial thickening and a left lateral-uterine image round, heterogeneous of 8/7 cm

Fig: 2 fetuses in the ovary
Fig: 3 Ovarian pregnancy

A trophoblast resection with ovarian conservation (Fig 4). Pathologic examination confirmed the diagnosis. The postoperative sequences were simple with negative HCG after two weeks.

Fig: 4 Ovarian sutures for hemostasis and ovarian preservation

Case Two

Female aged 27 years without significant pathological ATCD, primigest consults for low intensity abdominal pain with minimal metrorrhagia and amenorrhea of 5 weeks. The examination found sensitivity at the level of the right iliac fossa and a right laterus-uterine mass painful to mobilization. Ultrasound showed an empty uterus with a thick endometrium at 13 mm, a heterogeneous, right lateral uterine image of 45 mm with an effusion of medium abundance. The HCG assay was positive at 1577 mU / L. A laparoscopy was performed in an emergency and demonstrated an unbroken right ovarian pregnancy. The trophoblast, implanted on the ovary, has been carefully resected, with preservation of the ovary. The histological data confirmed the diagnosis. HCG kinetics were performed postoperatively until negative. The postoperative sequences were simple.

4. DISCUSSION

Ovarian pregnancy accounts for 3% of ectopic pregnancies\(^2\). Its pathophysiology is poorly understood, it seems to be secondary to a reflux of the fertilized oocyte to the ovary\(^3\). Cases of ovarian pregnancy after in vitro fertilization reported in the literature confirm the theory of reflux\(^4\). Pregnancy is preferentially implanted on the scar of the original follicular ostium, rich in fibrin and neo capillaries\(^4\). This theory corresponds to intra follicular and follicular juxta forms. More rarely, this implantation will be done at a distance from the corpus luteum or even on the contralateral ovary, corresponding then to the cortical and interstitial juxta forms whose pathophysiology remains obscure. Ovarian pregnancy was first suspected by Mercuryus in 1614 and proved from other works cited by Grall\(^5\). Ovarian pregnancy remains an exceptional isolated phenomenon in a woman's life outside of the usual risks and exact mechanisms\(^6\).

The literature shows that the age of patients varies between 21 to 44 years and the parity of 0 to 3\(^7\), and that advanced age appears to be associated with an increased risk of ectopic pregnancy following sustained exposure to risk factors\(^8\). In our case our two patients were 27 and 30 years old. Clinically, the painful abdominopelvic symptomatology beats the scene. These pains correspond to rupture of the ovarian capsule by pregnancy and to the constitution of the hemoperitoneum\(^4,9\). Patients are most often seen in an emergency, in shock\(^10\). In our patients, the abdominopelvic pain symptomatology plus a state of hemorrhagic shock was indeed in the foreground.

The diagnosis of ovarian pregnancy can be evoked on ultrasound by an efficient operator. A gestational sac adjoining the ovary can be demonstrated or, as some describe, a double hyperechoic ring within a lateral-uterine hypoechoic mass with or without an embryo\(^4\). Indeed, according to the age of pregnancy, several ultrasound images have been described in the literature\(^11\).

Some echographic criteria are very suggestive of the ovarian localization of pregnancy: the presence of anechoic rounded image with a hyperechogenic crown on the surface of the ovary, the presence of ovarian parenchyma as a yellow body or a follicle surrounding the mass, and a higher echogenicity of mass than that of the ovary\(^11\).

Differential diagnosis often occurs with a corpus luteum cyst or a hemorrhagic cyst. In this case, three-
dimensional ultrasound (3D) appears to be able to make a difference thanks to the cutting planes\(^{(11,13)}\). The Doppler energy, does not seem interesting for the diagnosis\(^{(11,12)}\). The pulsed Doppler seems to have more interest. Indeed, Atri\(^{(14)}\) found that an index of resistance <0.39 had a specificity and a predictive value of 100% for ectopic pregnancy make it possible to differentiate it from a cyst of the corpus luteum. However, this sign was only found in 15% of cases. In fact, there is no specific echographic sign of ovarian pregnancy\(^{(14)}\). In both cases, ultrasound showed two empty uterus with lateral-uterine images of the left, round, heterogeneous 8/7 cm without visualization of the ovary homolateral for both an empty uterus with an endometrium thick at 12 mm, a heterogeneous image, lateral uterine right 45 mm with an effusion of medium abundance. Perioperative diagnostic criteria for ovarian pregnancy have been specified since 1878 years by Spiegel berg\(^{(15)}\). Like the case of our two patients. The horn on the affected side must be undamaged to the horn, and the ovary sac must occupy the usual anatomical place of the ovary. It must be bound to the uterus by the utero-ovarian ligament, there must be ovarian tissue in the wall of the ovarian sac. However, these criteria are old and do not integrate modern methods of diagnosis, treatment and follow-up of pregnancy extra uterine (UG)\(^{(4)}\). On the other hand, it is difficult to fully validate them, especially since the practice of ovariectomy is currently infrequent. Serge F et al.\(^{(4)}\) proposed other criteria for the diagnosis of ovarian pregnancy with certainty \(^{(4)}\). These criteria include, apart from the intraoperative findings already described, the evaluation of the fraction of gonadotrophic chorionic hormone (HCG)\(^{(4)}\). Regarding the therapeutic aspect, the reference treatment of ovarian pregnancies is surgical. Laparoscopy with conservative treatment is increasingly indicated\(^{(4,16)}\). The laparotomy retains its indication before a major hemoperitoneum with an unstable hemodynamic state. As the case told in our two patients. Treatment should be conservative to the extent possible. Several surgical techniques have been described: cuneiform resection of the ovary carrying the ovarian pregnancy, enucleation of the pregnancy, cystectomy of the corpus luteum trophoblast, curettage of the trophoblast with coagulation or hemostatic ovary on the bed of the ovarian pregnancy\(^{(17)}\) of the ovary\(^{(18)}\). We opted for the latter technique in our two patients who had the conservative treatment. The medical treatment of ovarian pregnancies is very little described in the literature\(^{(19)}\). Indeed, ovarian pregnancy is often diagnosed at the stage of complications preventing the use of first-line medical treatment\(^{(20)}\). The addition of methotrexate (MTX) can be envisaged in catch up of an insufficient surgical treatment. We did not use the MTX. As for her prognosis, ovarian pregnancy, because of the absence of tubal damage, does not constitute a risk factor for a new pregnancy extra uterine GEU\(^{(1)}\). A single case of recurrence of ovarian pregnancy has been described in the literature and involved the contralateral ovary\(^{(17)}\).

### 5. CONCLUSION

Ovarian pregnancy, although rare, remains an obstetric emergency with a reserved and particular semiology compared to other extra ovarian pregnancy. Its diagnosis remains difficult and is often performed intraoperatively, through ultrasound by an experienced hand in view of the weak possibilities that semiology can present. The management is surgical despite the progress of medical treatment.

### REFERENCES