Primary Ovarian Pregnancy

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Introduction

In primary ovarian pregnancy the ovum is not guided into the tube but is fertilized in the peritoneal cavity and then implants onto the ovary. It causes the same symptoms as a tubal pregnancy and severe internal bleeding will eventually occur. In the Secondary type, there is a tubal abortion with secondary implantation of the embryo on the tubal surface. It is probably an accidental event with ovarian pregnancy occurs in parous fertile women in contrast to tubal pregnancy, which is more frequently associated with impaired fertility.

Day 1. 08:30 pm, Ain Shams University (ASU) – Maternity Hospital (MH)

A 32 years old lady married for nine years. She has 3 children after 3 cesarean sections. She was admitted to reception room of Ain Shams Hospital in Cairo, on January 7th, 2005 with the complaint of severe lower abdominal pain mainly on the left side after missing a period for 5 weeks and 3 days. She gives history of having had a removal of IUCD 2 weeks before admission.

Day 1. 09:15 pm. ASU – MH, Labor and delivery rooms (LDR)

Serum pregnancy test was done and it came positive. The patient was scanned by transvaginal ultrasound. The TVS revealed a left adnexal mass of 30 x 25 mm, of hyperechogenic structure, within the left ovary in addition to an empty uterine cavity with endometrial thickness of 9 mm and moderate free fluid in Douglas Pouch. Quantitative beta HCG level was requested. Her vital signs were unstable and the hemoglobin concentration was 7.4 g/dl.

Day 1. 09:40 pm. ASU – MH, LDR.

Laparotomy was done immediately through transverse abdominal incision, revealed intraperitoneal hemorrhage; about 1000ml. Two units of blood were transfused. The Uterus, both tubes and right ovary were intact. A Left ovarian hemorrhagic mass 3x3 cm was seen with an actively bleeding vessel at the lower ovarian margin. The left fallopian tube was found completely normal and separate from the ovary. A gestational mass in the substance of the left ovary was diagnosed. The active arterial bleeding point was secured and double ligated by Vicryl No 2/0. We removed and dissected the hemorrhagic mass inside the ovary with preservation of most of the healthy ovarian tissue. Meticulous coagulation of the bleeding sites was required to establish and maintain hemostasis. Thorough peritoneal toilet was done to remove about 1.5 liters of blood from the abdominal cavity. The total duration of the surgery was 60 minutes with estimated total blood loss of 1 liter.

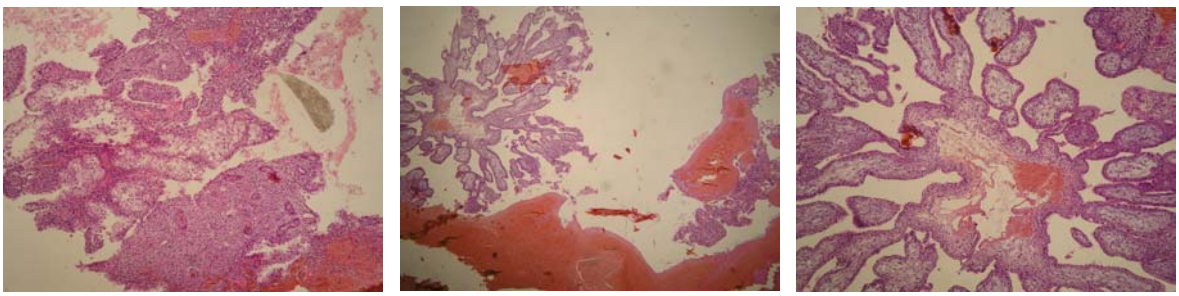

Figure 1. Histopathology pictures of the specimen taken from the ovarian mass, showing benign trophoblast of ovarian pregnancy.

Day 2. 10:00 am. ASU – MH, inpatient ward.

Her postoperative recovery was uneventful. Quantitative HCG was 15000 mIU/mL. The tissue extracted was suspected to be either ovarian ectopic pregnancy or hemorrhagic corpus luteum. Quantitative ßHCG came down to 1880 mIU/mL on the 2nd postoperative day. On the 10th postoperative day, serum pregnancy test became negative.

Histopathological examination showed hemorrhage, fibrin, chorionic villi and trophoblasts with fragment of cortical ovarian tissues indicating ovarian implantation (Figure 1).

She was discharged on the fourth post-operative day.

Discussion

Primary ovarian pregnancy is a rare entity; the reported incidence being 1 in 25,000 pregnancies, 0.5-3% of extrauterine pregnancies. The diagnosis is difficult and a continuous challenge to the gynecologist[2].

It is probably an accidental event with no predisposing features as compared to the tubal pregnancy.

Bontis et al (1997) have reported a case of an intrafollicular ovarian pregnancy after ovulation induction/ intrauterine insemination in a woman with primary infertility, after adhesolysis and laser vaporization of endometriotic implants. The patient underwent ovulation induction with artificial insemination and the pregnancy proved to be an ovarian intrafollicular one. She was treated by right partial ovariectomy[2].

The diagnosis of an ovarian ectopic pregnancy is seldom made before surgery. The recent advances in ßHCG determination and transvaginal ultrasound have aided the diagnosis. Ultrasound, especially transvaginal scanning has proven to be an invaluable tool in the diagnosis of this condition. Even then, it can be mistaken for a hemorrhagic corpus luteum or ovarian cyst.

Hallat (1982), in his study of 25 cases of ovarian pregnancies, reported that the most significant finding in his study was the inability to distinguish an ovarian pregnancy from a hemorrhagic ovary or ruptured corpus luteum. A correct surgical diagnosis was only made in 28% of the cases. In the remaining cases the pathologist made the diagnosis[4].

If the patients have an IUCD and a positive pregnancy test, an ectopic ovarian pregnancy has to be suspected[5]. The presence of a hemorrhagic lesion on the ovaries should arouse the suspicion of the surgeon to an ovarian ectopic pregnancy. If a concomitant corpus luteum is seen as in this case, then the diagnosis becomes easier.

In this case the surgical team was suspecting ovarian ectopic pregnancy as the first possibility.

The age-old criteria of Spiegelberg (1878), suggested four criteria to distinguish a primary ovarian pregnancy from a disturbed pregnancy, which has secondarily involved the ovary. They are

1. The fallopian tube with its fimbria should be intact and separate from the ovary.
2. The gestational sac should occupy the normal position of the ovary.
3. The gestational sac should be connected to the uterus by the ovarian ligament.
4. Ovarian tissue must be present in the specimen attached to the gestational sac.

All four criteria were verified in this case. With early detection of noncomplicatcd cases; laparoscopic surgery is the main method of treatment for all ovarian ectopic pregnancies. Early detection of an ovarian pregnancy prior to rupture of the gestational sac and to onset of active bleeding permits laparoscopic surgery and removal of the ectopic pregnancy without excessive removal of healthy ovarian tissue.

There is a place for medical treatment (Methotrexate) of carefully selected patients with ectopic pregnancies either tubal or ovarian. It prevents possible surgical complications such as intraoperative hemorrhage, oophrectomy and pelvic adhesions.

Patients with an ovarian pregnancy have a good prognosis for future fertility and therefore conservative surgical management is advocated[5].

At the time of surgery the diagnosis is made when a hemorrhagic mass is seen attached to one of the ovaries in the presence of normal looking fallopian tubes. This problem to a great extent has

been overcome by the widespread availability of serum ßHCG monitoring. A serum ßHCG level of 1500 mIU/mL in the absence of an intra-uterine sac is highly suggestive of an ectopic pregnancy. If on laparoscopy the fallopian tubes appear normal the ovaries should be carefully inspected. Before the widespread use of transvaginal ultrasonography and serial measurement of serum ß subunit of human chorionic gonadotrophin, patients with ovarian pregnancy usually presented after rupture of the gestational sac with massive intraperitoneal hemorrhage. Due to the increased vascularity of the ovarian tissue it was common to sustain massive hemorrhage with rapid circulatory collapse. These patients usually underwent oophrectomy or ovarian wedge resection. This is especially important in young patients who may desire to maintain their reproductive capability[8].

Systemic methotrexate has been successfully used to treat ovarian ectopic pregnancy. However methotrexate is not entirely without complications. In addition, if the initial diagnosis of an ectopic pregnancy is made during laparoscopy, it would seem logical to remove it at the same sitting and save the patient the anxiety of undergoing medical treatment and the possibility of repeat surgery should it fail, With early detection and good surgical techniques the amount of ovarian tissue lost will be insignificant and the resulting pelvic adhesions will be minimal if any[4,6].

If however, surgery is not a prerequisite for diagnosis of an ectopic pregnancy, patients who have an early missed or incomplete abortion may be unnecessarily treated with methotrexate. Due to these reasons, surgery presently remains the mainstay of treatment for ovarian as well as tubal ectopic pregnancies. Unlike tubal ectopic which has a significant risk of recurrence, to date there have been no reports of a repeat ovarian pregnancy.

Following hCG concentrations postoperatively (until negative) is important since remaining pregnancy cells may be able to grow postoperatively. If this does occur, adjuvant therapy with methotrexate to destroy any remaining pregnancy tissue is generally effective.

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Acknowledgment

We would like to thank Dr Amal Aloub, Fellow of Pathology Unit, for photographing the histopathology slides of this case.