Successful Medical and Surgical Management of Massive Hemoperitoneum in Early Pregnancy

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Abstract

Introduction: There are several cases reported in literature about management of adnexal masses and hemoperitoneum during pregnancy, however there is still no clear and standardized treatment. Through this manuscript we want to report our experience about the successfully treatment of massive hemoperitoneum due to corpus luteum rupture during first trimester of pregnancy.

Case description: A Caucasian young patient, pregnant at early gestational age, referred to our Department because of acute pelvic and abdominal pain due to rupture of left ovary corpus luteum. After conservative approach with medical treatment and strict observation a surgical intervention became necessary because of patient’s conditions worsening. A left adnexectomy under minilaparotomic approach was performed, without complications. After that, the pregnancy went on uneventfully, with adequate medical treatment and periodic controls, until the patient gave birth to a healthy baby.

Conclusions: An adequate and careful treatment of promptly diagnosed gynecological emergencies occurring during gestational period is feasible without invalidate pregnancy outcome.

Introduction

Corpus luteum is characterized by four developing stages: proliferation, vascularization, maturation and regression. During pregnancy, it develops after oocyte fertilization under corionic gonadotropin (ßhCG) stimulation extending on most of the ovarian surface. The size and structure of corpus luteum may be different reaching the maximum size at 7-9 weeks of gestation. At the end of pregnancy, it is usually no more detectable.

In case of acute pelvic pain during pregnancy, differential diagnosis should be done with other conditions such as ectopic pregnancy, endometriosis, dermoyd ovarian cysts or neoplasia. According to a recent study, adnexal masses are discovered in 1 per 76 - 1 per 2328 deliveries [1]. The incidence of an adnexal cancer in pregnancy is one per 12,000-47,000. It is, therefore, considered the second most common gynecological mass detected in pregnancy following benign cysts [2].

The course of adnexal masses during pregnancy is usually spontaneous resolution of simple anechoic cysts less than 5 cm in diameter [3]. It has been reported that pregnant patients have a 1% increased risk of ovarian torsion compared to non-pregnant patients. Most of the ovarian torsion cases occur in the first trimester; thereafter, the risk of torsion decreases [3,4].

However, high risk of severe complications such as miscarriage, premature amniotic rupture, premature labor and delivery is reported. In case of cyst size higher than 5 cm treatment options include: Wait and see or surgical management. Time to surgical removal of cyst is until 28 gestational weeks because of increased risk of premature labor, however the optimal timing for surgery is during the second trimester [1]. Nevertheless, whenever a malignancy is suspected, surgery should be performed at any time of pregnancy, through a laparoscopic approach if possible. Corpus luteum ruptures may occur spontaneously, requiring differential diagnosis with other conditions and prompt detection of emergency symptoms. There are several cases report-
vic and transvaginal ultrasound revealed regular intrauterine gestational sac with single embryo of 6.9 mm in crown-rump length (CRL) and presence of cardiac activity, corresponding to 6 weeks course of gestational age (Figure 1), with left ovary increased in size. The patient was hospitalized and she started medical treatment with progesteron, cortissons, antispasmodics and antibiotics because of vaginal infection revealed through vaginal swabs. Blood exams performed during hospitalization were within the normal ranges; the patient was always apyretic and a subsequent ultrasound evaluation, some days after, disclosed intrauterine gestational sac with one embryo of 10.2 mm in crown-rump length and presence of cardiac activity (Figure 2). Due to the improvement of patient symptoms, she was discharged with prescription of medical therapy with progesteron and antispasmoids and strict serial controls.

After three days from discharge, the patient came back to the hospital complaining severe pelvic pain with back irradiation. Blood exams revealed a mild anemia (Hgb level 10 g/dl) with leucocytosis (WBC: 13.5), vital parameters were normal. Trans-abdominal and transvaginal ultrasound revealed regular intrauterine gestational sac with single embryo of 6.9 mm in crown-rump length (CRL) and presence of cardiac activity, corresponding to 6 weeks course of gestational age (Figure 1), with left ovary increased in size. The patient was hospitalized and she started medical treatment with progesteron, cortissons, antispasmodics and antibiotics because of vaginal infection revealed through vaginal swabs. Blood exams performed during hospitalization were within the normal ranges; the patient was always apyretic and a subsequent ultrasound evaluation, some days after, disclosed intrauterine gestational sac with one embryo of 10.2 mm in crown-rump length and presence of cardiac activity (Figure 2). Due to the improvement of patient symptoms, she was discharged with prescription of medical therapy with progesteron and antispasmoids and strict serial controls.

Case Description

A Caucasian 34-years-old patient, referred to our Department of Obstetrics and Gynecology at 6 weeks of gestational age complaining pelvic pain and vaginal bleeding. She had a history of previous surgery: A uterine curettage for miscarriage 5 years before, a right salpingectomy for ectopic pregnancy and appendectomy. The patient obtained the current pregnancy thorough in vitro fertilization with embryo transfer. The clinical and obstetrical evaluation at time of admission revealed no abdominal or pelvic pain, scarce vaginal bleeding. Laboratory exams were normal at admission with a regular increase of corionic gonadotropin dosage (Hgb 11.6 g/dl; WBC 8,2; PLT 301.000; ßhCG: 11.200 mUI/ml). Pelvic and transvaginal ultrasound revealed regular intrauterine gestational sac with single embryo of 6.9 mm in crown-rump length (CRL) and presence of cardiac activity, corresponding to 6 weeks course of gestational age (Figure 1), with left ovary increased in size. The patient was hospitalized and she started medical treatment with progesteron, cortissons, antispasmodics and antibiotics because of vaginal infection revealed through vaginal swabs. Blood exams performed during hospitalization were within the normal ranges; the patient was always apyretic and a subsequent ultrasound evaluation, some days after, disclosed intrauterine gestational sac with one embryo of 10.2 mm in crown-rump length and presence of cardiac activity (Figure 2). Due to the improvement of patient symptoms, she was discharged with prescription of medical therapy with progesteron and antispasmoids and strict serial controls.

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The subsequent pregnancy course was uneventful. The patient underwent cesarean section, upon her request, at 38 gestational weeks: A female baby, Apgar 9/10, weight 2800 gr, was delivered. The post-operative course was uneventful and the patient and her baby were discharged on postoperative day 3.

Discussion

Spontaneous hemoperitoneum may result from several gynecological and obstetrical conditions. Corpus luteum rupture during pregnancy is rare throughout the first trimester. Symptoms are not specific and differential diagnosis with other pathological conditions during pregnancy is needed. Diagnosis of corpus luteum rupture is based on patient’s general conditions, blood exams, and above all pelvic and transvaginal ultrasound: Usually, a mass on the pelvic side with uneven appearance and intralesional bleeding is detected [9]. Magnetic resonance imaging (MRI) evaluation is important to have a better visualization of posterior and lateral pelvic regions that could be not easily detectable during pregnancy with ultrasound. Conservative management of adnexal masses during pregnancy is possible in stable patients or with no severe symptoms, otherwise a surgical approach is needed. Frequently, signs of abdominal resentment are highly severe in case of corpus luteum rupture and hemoperitoneum, as in our case. Conservative surgical treatment should be performed whenever possible, in order to preserve future fertility of patients [10]. There are few reports of ruptured corpus luteum in pregnancy with hemoperitoneum requiring emergency treatment [11-13].

Takeda, et al. reported on a 15-year-old girl, vitally at risk because of intra-abdominal bleeding. Transvaginal ultrasound revealed intrauterine gestation and fluid in the abdomen, thus urgent laparoscopy was performed, showing bleeding from the corpus luteum cyst and hemostasis was achieved. The intrauterine pregnancy was uneventful, the patient underwent cesarean section, upon her request, at 38 gestational weeks: A female baby, Apgar 9/10, weight 2800 gr, was delivered. The post-operative course was uneventful and the patient and her baby were discharged on postoperative day 3.

Figure 3: Pelvic mass on the left pelvic side measuring, without evidence of free pelvic fluid.
Statement of Equal Authors’ Contribution

All authors contribute equally to the drafting, writing and revision of the manuscript.

References