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Emergency Laparoscopy for a Rupture of an Ovarian Cyst in Early Pregnancy: What have we Learned?

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ABSTRACT

Background: Ovarian cyst rupture is a gynecologic emergency. Laparoscopy remains the best option for diagnosis and treatment.

Case: The authors report a case of hemoperitoneum, following right ovarian cyst rupture at the 25th day of a regular menstrual cycle of 28 days. Presumptive diagnosis of ectopic pregnancy was evoked on account of an elevated serum βHCG level (169.5 mIU/ml); an empty uterus, a right adnexal mass and hemoperitoneum on transvaginal ultrasound. During laparoscopy a huge right ovarian cyst was seen, that had ruptured and hemoperitoneum of about 400 cc. A cystectomy was done. The pathology report described a serous cyst and no trophoblastic tissue. There was an increase in the follow up serum βHCG level. Subsequent transvaginal ultrasound examination done at 5 weeks 2 days identified an intra-uterine ovular sac; and at 7 weeks described a concomitant viable mono-embryonic intrauterine pregnancy. The antenatal period was uneventful; she has delivered of a healthy 3450 g newborn at 38 weeks 6 days, per-vaginum.

Conclusion: This case highlights the safety of laparoscopy on the embryo (no embryotoxicity) and the place of transvaginal ultrasound, histology and βHCG triad in accurate diagnosis and adequate management of ovarian cyst rupture in early stage pregnancy, which may be confusing with ectopic pregnancy.

Keywords: Laparoscopy, Ovarian cyst, First trimester, Pregnancy

INTRODUCTION

Emergency management is one of the health challenges that sub-Saharan Africa has been facing for decades. Emergency medical services with pre-hospital care remain poorly developed in sub-Saharan Africa and the developing world at large. The provision of timely treatment during life-threatening emergencies is not a priority for many health systems in developing countries [1]. In Cameroon this is not limited to medical emergencies as the country is also facing the problem of rising maternal and perinatal mortality due to lack of emergency obstetrics and neonatal care kits [2]. This is evident from the fact that maternal mortality, stillbirth rate and neonatal mortality as well as associated factors remain high [2-4]. Delays related to lack of access to health facilities, delay in the in-patient care of emergencies, lack of adequate equipment for diagnosis and treatment and lack of qualified personnel are handicaps that contribute to death rates in medical, surgical and obstetric emergencies [1-5]. In presenting this clinical case of a surgical emergency promptly treated in a tertiary hospital in sub-Saharan Africa, we want to show health decision-makers that it is possible to significantly reduce intra-hospital mortality and morbidity related to surgical emergencies under infrastructural adequate conditions; and at the same time advocate to

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improve the management of surgical emergencies at the district health level.

CASE

Patient of 36 years old gravida 4 para 3 with 3 children alive, admitted at the emergency room of Douala General Hospital (DGH) for persistent acute pelvic pain of sudden onset, on the 25th day of a regular menstrual cycle of 28 days. She was anxious, the vital parameters were normal: temperature 37°C, blood pressure 111/70 mm Hg, pulse 85/min. We noted pelvic tenderness; the cervix was closed without metrorrhagia. Transvaginal ultrasound found an empty uterus with a thickened endometrium of 16 mm; an echogenic right adnexal mass measuring (72 × 58.4 × 36) mm and hemoperitoneum of about 450 cc. The laboratory reported a serum βHCG level of: 169.5 mIU/ml. We suspected a right adnexal ectopic pregnancy for which emergency laparoscopy was carried out identifying: A normal-size uterus, a right ovarian cyst with a serous gait of 70 mm long axis with active bleeding on parietal rupture, a hemoperitonium of 400 ml. the corpus callosum was on the right ovary. Both tubes and the left ovary were normal. There was no sequela of adnexal infection. We therefore suspected an ovarian pregnancy. Surgical procedures consisted mainly of cystectomy with careful control of hemostasis and abdominal lavage with isotonic saline. The postoperative course was as follow; on day 1, the pelvic pain was mild without tenderness; the serum βHCG level increased (266.7 mIU/mI); the Ca125 was normal=12 UI/ml. On day 2 she was clinically fine; the pathology report described the presence of a serous cyst and the absence of chorionic villi. Therefore she was discharged with close monitoring of serum βHCG and subsequent transvaginal ultrasound. A transvaginal ultrasound done at 5 weeks 2 days identified an intrauterine ovular sac of 5 weeks 1 day (βHCG=1580 mIU/ml) and that at 7 weeks described a viable mono-embryonic intrauterine pregnancy and concordant of 7SA (βHCG=2895 mIU/ml), The patient received progesterone on account of the recurrence of pelvic pain (400 mg vaginal per 24 h) during the first 16 weeks of pregnancy). Antenatal follow-up was uneventful; the second and third trimester ultrasounds showed good fetal development. She gave birth per-vaginum to a living fetus weighing 3420 g. The maternal and neonatal follow up were uneventful.

DISCUSSION

Laparoscopy for adnexal pathology in pregnancy has proved its efficacy compared to laparotomy at least in reducing the risk of abortion, threatened abortion and the risk of preterm birth [6].

The particularities of this case are that:

The laparoscopic surgery was performed during the embryogenesis phase: the literature fears a deleterious effect on the embryo due to pneumoperitoneum and a potential fetal acidosis [7,8].

In the course of the procedure we used a cannula for uterine mobilization, which could have triggered an abortion [8].

Specific βHCG assay techniques can diagnose pregnancy early. On the other hand before 5 weeks the gestational sac is not visible when the βHCG level is <1000 mIU/mI [9-11]. Nevertheless a positive pregnancy test at 25th day of a regular menstrual cycle of 28 days, an adnexal mass with an empty uterus and hemoperitoneum obliged us to initially suspect an ectopic pregnancy probably of isthmic localization.

The absence of chorionic villus on the resected specimen ruled out an ovarian pregnancy, a rare entity that is usually complicated by rupture before the end of the first trimester. Its clinical presentation is such that it is difficult to distinguish it from tubal pregnancy and ovarian hemorrhagic cyst [12]. Hence, the preference of laparoscopy which allows better appreciation of adnexa and lesions, because of magnification.

The role of the triad: βHCG transvaginal ultrasound-histology, which enables the correct diagnosis to be made earlier for appropriate management, by: confirming or ruling out ectopic pregnancy, identifying treatment failure early in case of ectopic pregnancy, confirming ovarian pregnancy and monitoring normal pregnancy at an early stage. However the lack of routine frozen biopsy causes delays in diagnosis as in this case report.

CONCLUSION

Based on our case report:

- Laparoscopy in pregnancy appears to be non-embryo toxic. We therefore recommend that a case control studies be carried out to establish the association between laparoscopy and embryo toxicity.
- Always eliminate pregnancy before laparoscopy in women of reproductive age.
- When the rate of βhCG<1000 IU/mI before 5 weeks, the gestational sac may not be visible: therefore an intra-uterine pregnancy is still possible.
- During laparoscopy in known or suspected pregnancy, uterine cannulation should be avoided.
- -The triad βHCG-transvaginal ultrasound- histology (with preference of frozen biopsy) currently contributes to the accurate diagnosis and management of ectopic pregnancy and ovarian cyst rupture.

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