

Ovarian Tumors in Pregnancy

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Abstract

The reported incidence of ovarian tumors during pregnancy varies from as high as 1:630 to as low as 1:2020 and is not only dependent on the population being studied but is also greatly influenced by the frequency of routine prenatal ultrasound (US) examinations. Only 1-2% of tumors detected during first trimester will persist until birth.

Objective

The aim of this study was to assess the adnexal masses epidemiology in pregnancy, their evolution, potential complications, and of course the management options.

Methods

It was a retrospective study which analyzed pregnancies with ovarian tumors between January 2013 and June 2018, from 1st Clinic of Obstetrics and Gynecology Iasi, Romania. 28 patients were included.

Results

The mean age of patients was 30.39 years (range 17-38 years). 15 ovarian mass were on the right side and 13 of them on the left side. Four women had diagnosis of ovarian cysts in the first trimester but from these only 2 persisted until delivery. We had 2 cases with ovarian torsion, one with increasing cyst from 6cm to 10cm at term and the other one with FIV and hiperstimulation syndrom at 7 weeks of gestation (two cysts on the same ovary of 5cm each with necrosis). For 7 cases the diagnosis of ovarian tumor was established during surgery (caesarean section). Six ovarian cysts had dimensions between 15cm and 30cm. The delivery for our patients was at term excepting 3 cases with birth at 34-36 weeks. Only 4 women had vaginal birth, one with laparoscopic surgery after that for ovarian torsion. Histological type of mass was: 16 serous cysts, 4 mucinous cystadenomas, 6 dermoid cysts, one ovarian fibroma, and one struma ovarii.

Conclusions

During period of analysis we didn't have malignant ovarian tumors. Only 2 cases had functional cysts. The presence of ovarian masses wasn't a cause of prematur delivery even for tumors of high dimensions.

Keywords: ovarian tumors, pregnancy, management

Introduction

Ovarian tumors first diagnosed during pregnancy often present a challenge for both the obstetrician and gynecologists providing pregnancy care. The incidence of ovarian and adnexal masses in pregnancy appears to be increasing in line with the expanding use of antenatal US [1]. Pregnancy is frequently a woman's first contact with the health care system and often her first pelvic US examination. This first sonogram can reveal previously unknown adnexal pathology. US scanning detects an adnexal mass in about 1 in 200 early pregnancies.

Sonography plays an important role in differentiating benign from malignant adnexal masses and physiological from pathologic masses, and should be used judiciously to complement evaluation and help guide treatment [2]. There have been significant improvements in US technology, allowing better characterisation of adnexal masses.

The role of tumour markers in pregnancy, as CA125, human chorionic gonadotrophin (beta-hCG), and alpha fetoprotein (AFP) is limited due to their non-specific nature [3].

Most common ovarian masses encountered during pregnancy are functional cysts of the ovary. The other ovarian masses in order are benign cystic teratomas, serous cystadenomas, paraovarian cyst, mucinous cystadenomas and endometriomas [4]. The probability of ovarian cancer has been estimated to be 1 to 3% of all ovarian masses detected during pregnancy [5].

Although the reported incidence and expected clinical course varies based on the gestational age at time of diagnosis and the criteria used to define an adnexal mass, the majority of adnexal masses diagnosed in pregnancy are benign and are likely to resolve without complication or intervention [6]. As management when the ovarian mass is smaller than 6cm, such a tumor can simply be observed. More than 90% of functional cysts will disappear by the second trimester of pregnancy. Factors such as sonographic characteristics, size, and eventual complications may help determine the need for surgical intervention.

Conversely, large symptomatic or suspicious tumors require surgical intervention. Patients should be counselled about the risks and benefits of both surgery and observation. Ovarian masses usually resolve by the second trimester of pregnancy, the optimal surgical window being around 16 to 20 weeks of gestation and does not adversely affect neonatal outcome. The adnexal mass still affords some pelvic exposure without the need for significant uterine manipulation.

Torsion of ovarian cyst is the commonest complication during pregnancy. Incidence of ovarian torsion is 5 per 10000 pregnancies [7] and its risk increases 5 times during pregnancy.

The diagnosis is established by the characteristic's history, presenting complaints of patient, examination findings and it is confirmed by transvaginal US. In the past untwisting of the pedicle was avoided due to fear of embolisation of toxic materials to the peripheral circulation, but these days, there are sufficient evidences that by untwisting of pedicle during surgery and thereby reestablishment of circulation leads to viable ovarian tissue, without any systemic complications [8].

Objective

The aim of this study was to assess the adnexal masses epidemiology in pregnancy, their evolution, potential complications, and of course the management options.

Methodology

It was a retrospective study which analyzed pregnancies with ovarian tumors between January 2013 and June 2018, from 1st Clinic of Obstetrics and Gynecology Iasi, Romania. 28 patients were included. Clinical and pathological information, sonographic findings, and treatment were obtained from medical records.

Results

The mean age of patients was 30.39 years (range 17-38 years). 15 ovarian masses were on the right side and 13 of them on the left side, almost an equal distribution (Fig. 1). 6 patients had ovarian cysts dimensions between 15 and 55cm.

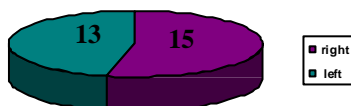


Fig. 1. Distribution of ovarian masses

In the first trimester, the most often encountered pregnancy-related adnexal mass is the corpus luteum cyst, which rarely persists beyond 16 weeks' gestation. In our study 4 functional cysts were noted and 2 of them were found at term too. Two women had twins pregnancy obtained after treatment for infertility, one with serous cyst of 5cm at 37 weeks. The management was cystectomy during caesarean section.

Usually such neoplasm will be a benign cystadenoma or cystic teratoma. This fact has been confirmed in our study. The histopathological examination founded 16 serous cystadenomas, 4 mucinous cystadenomas, 6 dermoid cysts (Fig. 2), one ovarian fibroma (Fig. 3), and one struma ovarii (a special entity of mature teratoma) (Fig. 4).



Fig. 2. Dermoid cyst



Fig. 3. Ovarian fibroma



Fig. 4. Struma ovarii

The most common complication of ovarian cysts are torsion, rupture, obstruction of labor, and rarely malignant transformation. In this study we didn't have malignant ovarian tumors.

Three cases had ovarian torsion:

- one patient obtained the pregnancy after FIV and at 7 weeks she had hyperstimulation syndrom with torsion of the left ovary and necrosis (mass of 20/10cm with 2 cysts of 5cm each). Surgery is not recommended during first trimester because of low likelihood of malignancy and the increased potential for pregnancy loss. It was an emergency solved by laparotomy with left salpingo-ooforectomy. If fully progestin therapy is given (600mg/day), the danger of abortion is reduced to a minimum. She delivered at 37 weeks by caesarean section two babies of 2700gr and 3100gr respectively.
- another case with ovarian cyst of 6cm in the first trimester of pregnancy had ovarian torsion at 38 weeks of gestation (cyst increased at 10cm) – delivery by caesarean section and salpingo-ooforectomy.
- finally the last case had an ovarian cyst of 5cm with tortion at 34 weeks with premature labor. She had a vaginal birth and after this left salpingo-ooforectomy was performed by laparoscopy.

An ovarian tumor discovered in the second half of pregnancy calls for temporization of treatment. For a case with pregnancy of 32 weeks of gestation and serous right ovarian cyst of 13/14cm was performed an aspiration of 1000ml fluid. Aspiration with cytology can provide

particularly useful information in young women with ovarian cysts to avoid an unnecessary operation.

All patients delivered at full term, excepting 3 of them with premature delivery at 34-36 weeks of gestation. Caesarean section at term with simultaneous extirpation of the tumor is the treatment of choice. This also happened with our patients – 13 salpingo-oophorectomy and 9 cystectomies. Only 4 patients had vaginal birth. Indication for caesarean section was ovarian cyst just for 6 cases and for the others it was: uterus with previous scar after C-section – 7 cases, twins – 2 cases, fetal distress, breech presentation primiparous, preeclampsia, hepatitis C, placenta praevia etc.

Usually persisting ovarian cysts beyond 20 weeks are managed by simple cystectomy or ovariectomy until 28 weeks. We had 21 years old woman IP without any visit at gynecologist until 26 weeks. She presented for superior abdominal pain. The clinical exam established that the abdomen is bigger than gestational age, with a big cyst in the upper part of the abdomen (Fig. 5, Fig. 6, Fig. 7).



Fig. 5. The abdomen bigger



Fig. 6. Uterine fundus height



Fig. 7. Uterus and the cyst than gestational age

It was decided surgery by laparotomy (left ovarian cyst of 30/20cm) (Fig. 8) and aspiration of the cyst (15litres of serous fluid) (Fig. 9), followed by left salpingo-oophorectomy (Fig. 10).



Fig. 8. Pregnant uterus and cyst



Fig. 9. Cyst aspiration

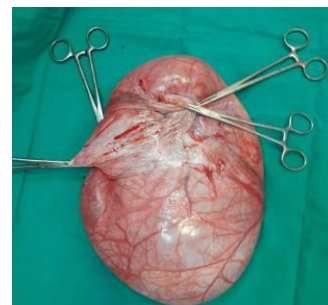


Fig. 10. Salpingo-oophorectomy

Beyond 28 weeks of gestation, risk of preterm labor is there if surgical option is considered. So we must wait with surgery until beginning of labor. A 32 years old patient IIIIGIIP was admitted in our clinic at 29 weeks for the presence of a big cyst in the upper part of the abdomen. The differential diagnosis was made with ascites and hidatic cyst by US (Fig. 11, Fig. 12, Fig. 13, Fig. 14). She delivered by caesarean section at 34 weeks, a healthy boy of 2550gr, after beginning of labor. The cyst dimensions were 55/30cm – mucinous cystadenoma “intestinal-like”.



Fig. 11. Multiloculated heterogeneous cyst

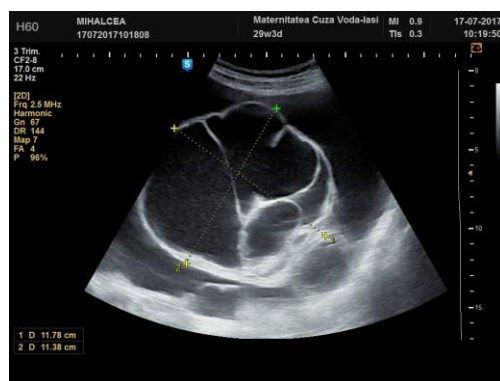


Fig. 12. Thin septated cyst



Fig. 13. Cyst near the uterus (placenta)



Fig. 14. The serous part of the cyst and uterus

Another patient 33-year-old VGIIP had history of left ovarian cyst treated by laparoscopically cystectomy 4 years ago. At 20 weeks of gestation she had the diagnosis of left ovarian cyst of 123mm. The next visit was at 30 weeks with a bigger left ovarian multicystic mass (Fig. 15, Fig. 16). The US exam found at 35 weeks polyhydramnios (Fig. 17) (diagnosis of gestational diabetes after oral glucose tolerance test) and the cyst almost with same dimensions (Fig. 18). She had also hypertension induced by pregnancy (treatment with Dopamine 3pills/day).

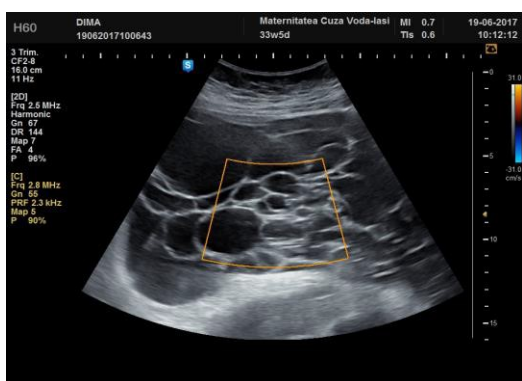


Fig. 15. Ovarian multicystic mass



Fig. 16. Cervical length at 30 weeks

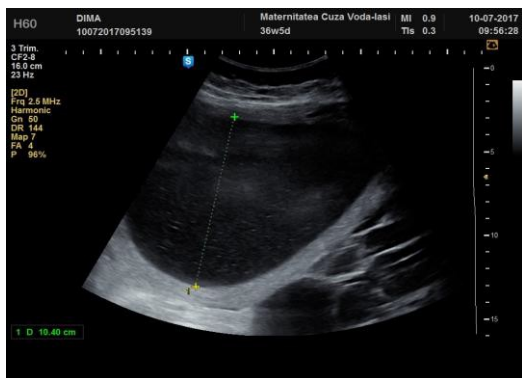


Fig. 16. Polyhydramnios at 35 weeks

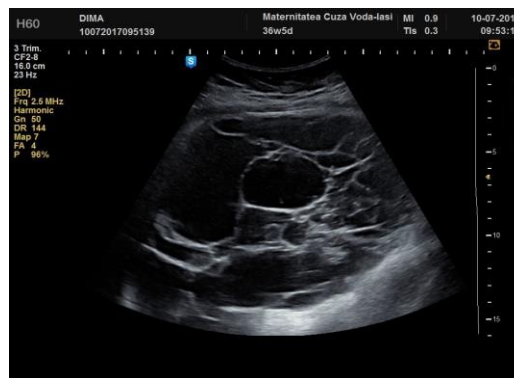


Fig. 17. The ovarian cyst at 35 weeks

She delivered at 37 weeks by caesarean section a health boy 2600gr (Fig. 18). The cyst had 30cm (Fig. 19) and an unusual presentation, with development in the left cardinal ligament (Fig. 20) and mesosigmoid (Fig. 21).

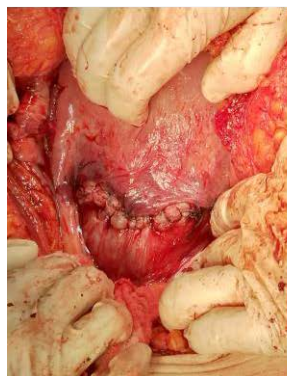


Fig. 18. Uterine scar

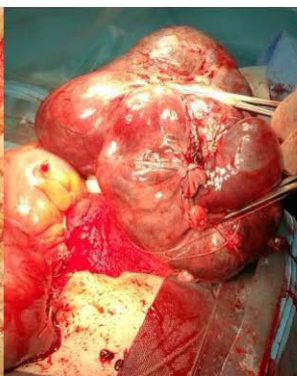


Fig. 19. Ovarian cyst



Fig. 20. Uterus and cyst

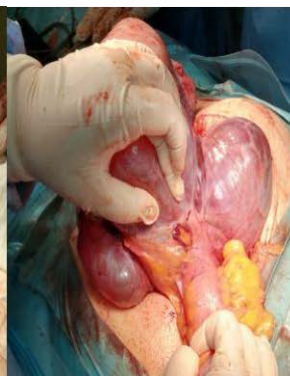


Fig. 21. Cyst near bowel

Conclusions

During the period of study we didn't have malignant ovarian tumors. Only 2 cases had functional cysts with persistence at term. Most cases had live births at full term. The presence of ovarian masses wasn't cause of high fetal prematurity even for tumors of bigger dimensions. Almost all patients delivered by caesarean section, but ovarian cyst was the elective indication only for 6 of them.

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