Dilemma in the Management of Ovarian Cyst in Pregnancy: A Series of Three Different Cases

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The incidence of ovarian cyst in pregnancy is increased due to ovulation induction and dating ultrasound. Mostly they are benign and managed by observation. Surgery is indicated if there are complications or any suspicion of malignancy. Here, we have presented three different cases of ovarian cyst in pregnancy, which was managed by surgery. The first case is a 27-year-old second gravida with para1 live1 with complaints of pain in right iliac fossa at 15 weeks of gestation that was diagnosed as a dermoid cyst of right ovary. She underwent laparoscopic cystectomy. Rest of the antenatal period was uneventful, and she delivered vaginally at term. The second case is 31 year old third gravida with para2 live2 came with complaints of lower abdominal pain around 14 weeks of gestation which was diagnosed as fibroma of ovary for which laparotomy and right salphingo-oophorectomy was done. Rest of the antenatal period was normal, she delivered by caesarean section at term. The third case was 30-year-old second gravid with para1 live1 with left ovarian mass presented at term for which cesarean section along with left salphingo-oophorectomy done.

Keywords: Cesarean section, Ovarian cyst, Pregnancy

INTRODUCTION

The incidence of adnexal masses in pregnancy ranges from 1 in 81 to 1 in 8000 pregnancies.1 The incidence of ovarian cyst in pregnancy is increased with the use of dating ultrasound in the first trimester and also due to an increase in ovulation induction. It enhances anxiety to the pregnant women as it involves increased investigations, admission and antenatal visits.2 The most common types are dermoid 25%, corpus luteal cyst, functional cyst, paraovarian 17%, serous cystadenoma 14%, mucinous cystadenoma 11%, endometrioma 8%, carcinoma 2.8%, low malignant potential tumor 3% and leiomyoma 2%.3 Complications of the cysts associated with pregnancy are torsion, rupture, infection, malignancy, impaction of cyst in the pelvis causing retention of urine, obstructed labor and malpresentations of the fetus. Ovarian cysts should be differentiated from uterine leiomyoma, non-pregnant horn of bicornuate uterus, appendiceal abscess, diverticular abscess, pelvic kidney, retroperitoneal tumor, endometrioma, hydrosalphinx, mesenteric cyst, abdominal pregnancy, metastatic lymphoma and sarcoma.4 Asymptomatic and benign cysts can be managed conservatively and typically resolve through the pregnancy or in the postnatal period. Persistent symptomatic ovarian cysts are at increased risk of torsion, rupture and rarely obstructing labor and few cases with atypical features may represent malignancy. In these instances, surgical intervention may be done.5 If the surgery is needed it is ideal to perform a laparoscopic ovarian cystectomy at 16-23 weeks of gestation.5 However at any time, if there is evidence of malignancy, torsion or rupture immediate surgery is required.6

CASE REPORTS

The consent from Ethical Committee of our college and patient’s consent were obtained.

Case 1

A 27-year-old gravida 2 para1 live1 presented in our antenatal clinic with dating scan for routine antenatal checkup at 10 weeks of gestation. The ultrasound showed a single live intrauterine gestation corresponding to 10 weeks 3 days with complex cyst measuring 6.6 cm × 3 cm × 2.8 cm originating from the right adnexal echogenic mass with shadowing suggestive of dermoid cyst seen. The
Patient had no specific complaints. She was asked to come for regular antenatal checkup and repeat ultrasound was performed at 12th and 14th week of gestation that revealed no increase in the size of the cyst. Around 15 weeks of gestation, patient came with acute lower abdominal pain. On general examination, her vitals were stable. Per abdomen revealed tenderness and guarding in the right iliac fossa. Basic laboratory investigations were normal. Ultrasound confirmed single live fetus with biparietal diameter and abdominal circumference corresponded to gestational age and an echogenic mass of size 6.8 cm × 2.5 cm × 3 cm with shadowing in the right adnexa. On laparoscopy, gravid uterus with normal left ovary and tubes, smooth peritoneal surface and a cyst of size 6 cm × 3 cm × 3 cm (Figure 1) was found in the right adnexae. Laparoscopic cystectomy was performed by dissecting away the cyst from the right ovarian tissue. Peritoneal wash was given. The intra-abdominal pressure was maintained below 12 mmHg throughout the procedure. Fetal heart rate monitored before and after the procedure which was normal. Post-operative period was uneventful, and the patient was discharged after a week. Histopathological examination of the cyst suggested dermoid. Patient was asked to review once in every 2 weeks in the antenatal clinic, and the subsequent antenatal period was uneventful. At 38 weeks, she presented with labor pain and spontaneously delivered an alive, healthy female baby weighing 2.7 kg with Apgar score 8 at 1 min and 9 at 10 min.

**Case 2**

A 31-year-old gravida 3 para2 live2 presented in our antenatal clinic for routine antenatal check-up at 14 weeks of gestation with complaints of lower abdominal pain. Pregnancy was confirmed outside by urine pregnancy test at 8 weeks of gestation. In the first trimester, patient had no specific complaints. On examination, her vitals were stable. Per abdomen revealed tenderness and guarding in the left iliac fossa. Basic laboratory investigations were normal. We advised ultrasound abdomen that showed a single live intrauterine gestation corresponding to 13 weeks 2 days along with a solid hyperechoic mass in the right pelvic adnexa measuring 86 mm × 60 mm × 58 mm size. Laparotomy was done. A firm mass of size 90 mm × 50 mm × 50 mm (Figure 2) found in the right adnexa next to the gravid uterus. The adnexal mass was removed. Fetal heart rate monitored before and after the procedure that was normal. Post-operative period was uncomplicated and patient discharged after a week. Histopathology of the cyst was suggestive of fibroma of ovary. Patient was asked to review once in every 2 weeks in the antenatal clinic and the subsequent antenatal period was uneventful. She was admitted at 39 weeks with spontaneous labor and due to non-progression of labor, she had lower segment cesarean section done. Per operatively both her ovaries and tubes were normal. An alive female baby weighing 3.4 kg with Apgar score of 7 at 1 and 10 at 10 min was born.

**Figure 1:** Laparoscopic cystectomy in pregnancy (16 weeks): A case of dermoid

**Figure 2:** Fibroma of ovary

**Figure 3:** Serous cystadenoma of ovary
Case 3
A 30-year-old second gravid live1 presented in our antenatal clinic for the first time at 38 weeks of gestation with complaints of abdominal pain. Patient had an ultrasound report which showed left ovarian cyst of size 10 cm × 9 cm. Per abdomen revealed excessively distended abdomen with mild uterine contractions. Ultrasound suggested single viable fetus corresponding to 37 weeks 2 days with good cardiac activity and a single anechoic cystic lesion of size 9 cm × 8 cm (Figure 3) with thin septations and no solid components lying above the uterus. Caesarean section done and she delivered an alive and healthy male baby of weight 2.5 kg delivered with Apgar score of 8 at 1 min and 10 at 10 min following which left salpingo oophorectomy was done. The other side tube and ovary were normal. Post-operative period was uneventful and patient discharged on 7th post-operative day after suture removal. Histopathology of the cyst suggested serous cystadenoma of the ovary.

DISCUSSION

The frequency of ovarian cyst in pregnancy ranges from 1 in 81 to 1 in 8000 pregnancies1 and those which are malignant represent about 1 in 15,000 to 32,000 pregnancies.2 Most often the cyst present in the first trimester are functional cysts and are asymptomatic, usually disappear after first trimester. Some become persistent and cause complications or become malignant.7

Ultrasound is the primary investigation used for differentiating benign from malignant lesions based on morphology.8 The level of tumor markers like CA125, β hCG are insignificant in diagnosis as they are usually raised in pregnancy. However, they can be used as indicators for the followup in tumour control.9

It is preferable to perform elective laparoscopic procedures at 16-23 weeks of gestation to decrease the incidence of pre-term labor and abortion.5 Evacuation by needle aspiration is not recommended in pregnancy.10

Once found in the first trimester masterly inactivity is needed till 16 weeks to see if it gets resolved. In cases where the size is >6 cm or if the patient is symptomatic or there is an increase in the size of the cyst or if the nature of the cyst is doubtful it has to removed surgically.6,11 Laparoscopic ovarian cystectomy has significant advantages over laparotomy.12

There is a study where a right serous cyst, which was initially managed conservatively showed signs of torsion for which emergency laparotomy was performed at 16 weeks.14 Each case has to be individualized, and the management should be done accordingly.

Giant ovarian cyst in pregnancy when it causes symptoms, malignancy should be ruled out following which puncture can be done during pregnancy, later in the postpartum period cystectomy can be done.13

In a study it is stated that surgical intervention done even in the second trimester may result in preterm labor, miscarriage and intrauterine growth restriction.15 When surgery is done in case of malignancy, staging has to be done. Sometimes chemotherapy can be used in pregnancy for a malignant tumor with minimal fetotoxic drugs when maternal mortality outweighs the fetal outcome.16

CONCLUSION

The management of ovarian cyst in pregnancy is usually conservative with serial ultrasound monitoring. The nature of an ovarian cyst should be studied in detail and malignancy has to be ruled out. If the surgery is indicated laparoscopic cystectomy can be done without much complication between 16 and 23 weeks. Anxious patient should be counseled about the pros and cons of conservative and surgical management.

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