

Laparoscopic Management of Ovarian Cysts in Pregnancy: Study of Surgical Outcome and Obstetric Outcome.

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Abstract:

Objective: Laparoscopic approach for ovarian cysts during pregnancy would be a better method for a good obstetric outcome.

Design: The following study is a prospective analysis of surgical and obstetric outcome among five pregnant women with incidental ovarian cysts during 2nd trimester.

Subjects: Five ANC patients who presented with vague symptoms to emergency department who were diagnosed with ovarian cysts in pregnancy.

Intervention: These antenatal mothers with ovarian cyst presented themselves with vague symptoms and were admitted to our hospital, following which, symptomatic treatment was given. They were explained about the problem, need for surgical intervention and an informed consent was taken. For patients willing, Laparoscopic cystectomy was done as surgical intervention and patient been discharged after 3 days (post operative care). These antenatal mothers were followed up till delivery and outcome noted.

Results: Amongst 5 cases, 3 patients presented with acute abdomen and 2 patients presented with pressure symptoms like, acute urinary retention, increased frequency of micturition. The size of cysts were between 12-24 gravid uterus size, with diagnosis of simple clear cysts in 3 cases, dermoid cyst in 1 case and haemorrhagic cyst in another case. Options were given between exploratory laparotomy and laparoscopic surgery about pros and cons. Patient who gave consent for the laparoscopic surgery were included in the study. Amongst 5 patients, 3 were operated under general anesthesia and 2 under Spinal Anaesthesia, Without Trendelenburg position. Mean blood loss was about < 100cc. Average operating time was 40 minutes. There was no miscarriages amongst the study group. 1 patient had pre-term vaginal delivery, 1 patient underwent caesarean section, and rest had spontaneous uneventful normal vaginal delivery and no any gross abnormality.

I. Introduction

Adnexal masses during pregnancy are not uncommon. The incidence of adnexal masses during pregnancy is estimated to be 0.2 – 2 % depending on the stage of pregnancy. With 1-6% malignancy rates, the vast majority of these masses are benign. ¹Study on epidemiology reveals that the incidence of all types of ovarian cysts during pregnancy is about one out of 600.

The frequency of ovarian tumors is about 1 in 1000 pregnancies ³Most of the cases are benign cysts out of which mature cystic teratoma accounts for 50% of the cases, followed by benign cyst adenomas (20%), functional cysts (13%) and ovarian cancer (0.6%), while symptomatic ovarian tumors which are associated with pregnancy ranges from 1:8 – 1:2328.

Before the incorporation of ultrasound into clinical practice, ovarian cysts during pregnancy were mainly diagnosed by physical examination when women presented with symptoms including abdomino-pelvic pains or a palpable mass. Ovarian cysts with diameter >6cm which persist or enlarge beyond 16 weeks gestation, are at risk of complications and need tissue diagnosis and therefore surgical evaluation. ⁵

II. Results

This is a Prospective Study at Dr. B.R. Ambedkar Medical College and Hospital, Bangalore.

5 antenatal patients with symptomatic ovarian cysts were included in our study during Sept 2014 to May 2016. Different ranges of sizes of ovarian cyst have come across in our study of largest size of cyst being = 20x1 cms. All 5 patients presented during 2nd trimester of pregnancy. 3 patients (60%) presented to the emergency department with acute abdomen and rest 2 patients (40%) presented with chronic abdominal pain.

2 were primigravidae (40%) and 3(60%) multigravidae with age being between 19-32 years. 1 patient (20%) in our study had previous caesarean section among 3 multigravidae. Clear cysts was the ultrasonological findings in 3 patients (60%) and haemorrhagic cyst in 1 patient (20%) and dermoid cyst in another (20%).

Table 1:

Criteria	1 st case	2 nd case	3 rd case	4 th case	5 th case
Patient Age	22 yrs	19 yrs	24 yrs	26 yrs	32 yrs
Parity	G ₂ A ₁	G ₁	G ₂ P ₁ L ₁	G ₂ P ₁ L ₁ A ₁	G ₂ P ₁ L ₁
Gestational age at Operation	23 wks	26wks	20 wks	22 wks	22 wks
Previous Surgery	Nil	Nil	Prev LSCS	Nil	Nil
Presenting Features	Acute Abdomen	Acute Abdomen	Chronic abdomen pain	Acute abdomen	Chronic abdomen pain
Scan findings	Clear Cyst	Clear Cyst	Demoid cyst	Haemorrhagic Cyst	Clear cyst
Cysts size at operation(approximate)	20x18 cms	15x12 cms	6x5 cms	4x4 cms	10x8 cms
POD Collection	Nil	Nil	minimal	Nil	Nil
CA 125 level	22	19	21	12	17

Table 2:

Category	1 st case	2 nd case	3 rd case	4 th case	5 th case
Anesthesia	SA	SA	GA	GA	GA
Per abdomen Size	28 wks	30 wks	24 wks	22 wks	26 wks
Uterus size	22 wks	24 wks	20 wks	18 wks	24 wks
Ovarian cyst size	18x16x14 cms	15x10x12 cms	6x5x4 cms	4x4x3 cms	10x8x6 cms
Adhesions	nil	Nil	Minimal	Nil	Nil
Injuries to Adjacent Structures	nil	Nil	Nil	Nil	Nil
Blood loss	<30 ml	<20 ml	<20 ml	<20 ml	<30 ml
Spillage	nil	Nil	Nil	Nil	Nil

All patients were investigated with CA 125 levels and were within normal limits (ranging from 12-22). 4 of our patients were given tocolytics for 24 hours post op and hospital stay for 5 days on an average. The antenatal follow up was done regularly as patients were very cooperative and followed our advice for attending antenatal clinic regularly and hence not a cumbersome for us to follow them up. Though, out of curiosity and anxiety of ours vigorous monitoring and follow up of antenatal patients were done, the outcome in terms of maternal and fetal outcome was good. Out of 5, 1 patient (20%) underwent LSCS I\|v\o previous LSCS in labour, rest 4 patients (80%) had vaginal delivery. Out of 4 patients who had vaginal delivery, 1 patient (25%) had preterm vaginal delivery. Fetal outcome was measured by apgar score of which all 5 babies had a good apgar score and good fetal outcome.

Table 3:

Criteria	1 st case	2 nd case	3 rd case	4 th case	5 th case
Tocolytics	Given	Given	Given	Not Given	Given
Hospital stay	5 days	5 days	5 days	4 days	5 days
Miscarriage/ Preterm labour	Pre term labour	Nil	Nil	Nil	nil
Delivery	Pre term labour	TVD	LSCS	TVD	TVD
Apgar Score 1/5m	8/10	9/10	8/10	9/10	9/10

TVD- term vaginal delivery

III. Discussion

Ovarian cysts were more likely to be surgically removed to resolve symptoms, avoid complications or because of the malignant potential.

Since the finding of an ovarian cyst during pregnancy now is mainly incidental, accurate diagnosis is important to identify those patients who are in need of surgery.⁶

Ovarian cysts in pregnancy are now relatively better appreciated due to the advent and access of high resolution Trans Vaginal Ultrasound.

Majority of ovarian cysts are asymptomatic and spontaneously resolve prior to 16th week of gestation. While few remain persistent, painful and progressive ovarian cysts imparts dilemma in the management as they can cause complications for the mother and fetus.

The appreciated choice of treatment is still in controversy for the asymptomatic ovarian masses in pregnancy.⁷

The high sensitivity and specificity of ultrasonography to characterize the morphology of pelvic masses make it an ideal tool to use as a first choice diagnostic tool since morphology is the most important determinant in distinguishing benign masses from malignancies.⁸

Most surgical options for ovarian cysts in pregnancy are managed ideally in the second trimester after organogenesis is complete decreasing the risk of fetal loss, eliminating the 15% to 20% background risk of spontaneous miscarriage and allowing for spontaneous regression of the mass.⁹

Due to the anatomical, hormonal and vascular changes, a higher incidence of torsion (7.0-28.0%) rupture (1.3-3.7 %) and infection (1.2-2.4%) of ovarian cysts has been reported in pregnant patients.¹⁰

The conservative management usually refers to serial clinical features monitoring with repeated ultrasonographic measurement.¹¹

CA125 testing routinely not done. Though MRI is preferable to CT scanning, but both modalities should be avoided in the first trimester.¹²

Once the decision is made for surgical management, the specific approach is the next consideration.

Until recently, most of these procedure were performed by exploratory laparotomy and do not differ with regard to fetal outcome that is, fetal weight, gestational age, growth restriction infant survival rate and fetal malformations.¹³

Now questions arise about the anesthetic complications and intra operative injuries based on increased size of gravid uterus, Trendelenburg position, the compromised diaphragmatic excursion after pneumo –peritoneum and carbon dioxide toxemia.

With availability of modern non teratogenic anesthesia ,acceptable intra abdominal pressure selection (10-12 mmHg)and optimal trendelenburg position, the laparoscopic procedure in pregnancy especially in 2nd trimester is a safe procedure and less cumbersome with experienced team.

The possible risks of laparoscopy include compression of uterine blood flow through elevated intra –abdominal pressure, fetal acidosis, fetal exposure to carbon monoxide from coagulation etc.

Due to restricted space available, as the gravid uterus and bowel loops encroaches over surgical field chances of uterine injury during port placement, Injury to adjacent vital organs, etc may not be under weighed.

The risks of hypercarbia and acidosis are reduced by keeping the operating time short and pressures as low as possible – not higher than 15 mmHg. Ventilation of the lungs needs to be carefully monitored and constantly adjusted to compensate for the pneumoperitoneum and positional changes.¹⁴

IV. Conclusion

The incidence of ovarian cysts in pregnancy are on rise. With the judicious and apt laparoscopy techniques used during dealing of surgeries in pregnancy, the outcome is heralded to be better. Hence laparoscopic ovarian cystectomy in pregnancy can be embedded amongst the options of surgical interventions and gives good surgical and obstetric outcome.

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