



**ORIGINAL RESEARCH PAPER**

**Obstetrics & Gynecology**

**THE STUDY OF ADNEXAL MASSES IN PREGNANCY AT TERTIARY CENTER**

**KEY WORDS:** Adnexal Mass, Pregnancy

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**ABSTRACT**

**BACKGROUND:** Adnexal masses occur frequently during the reproductive age and during pregnancy. The management of adnexal masses during pregnancy presents a difficult clinical decision. The abdominal surgery during pregnancy is risky to the mother and the foetus. On contrary, conservative management may result in the spread of cancer or serious complication such as the torsion or rupture of ovarian cysts.

**METHODS:** In observational study, 42 cases of adnexal masses in pregnancy were studied. These patients were evaluated with the respect to their size, tumor markers, histopathological report gestational age, and Perinatal outcome and treatment.

**RESULT:** In present study 38 % patients were between the age of 25-30 years. It was seen commonly in multiparous women. It was commonly observed in second trimester., 40% cases were found to have adnexal mass between 6-10 cm. CA-125 was estimated for 30 patients in present study most commonly found adnexal mass was mucinous adenoma and dermoid cyst

**CONCLUSION:** Majority of the adnexal masses are benign in nature. Dermoid cyst and mucinous cyst adenomas are the most common pathology found in adnexal masses in pregnancy. Operative management for adnexal mass is safe and hence most commonly performed in second trimester.

**INTRODUCTION**

The term adnexa refers to the region adjoining the uterus that contains the ovary fallopian tubes as well as associated vessels, ligaments and connective tissues.

The mass in adnexa may be symptomatic or found incidentally. The overall estimated incidence of adnexal masses in pregnancy ranges from 2 to 10%.<sup>1,2</sup>

Majority of adnexal masses are of ovarian origin, but can also be a Paratubal cyst, chronic fallopian tube mass, pedunculated fibroid etc.

Most small ovarian cysts in pregnancy are usually functional and can be managed expectantly. The management of adnexal masses during pregnancy presents difficult clinical decision. The abdominal surgery during pregnancy is risky to mother and the foetus. On the contrary conservative management may result in the spread of cancer or serious complications such as the torsion or rupture of ovarian cyst.

**MATERIAL AND METHODS**

An observational study of 42 cases of Adnexal Masses in Pregnancy was done at the department of obstetrics and Gynaecology- Y.C.M. Hospital, Tertiary Care Center, Pimpri, Pune, Maharashtra, India during the year 2012-2014. Informed consent was obtained from each woman involved in the study.

**INCLUSION CRITERIA**

- Antenatal patient with adnexal mass.
- Irrespective of time of detection whether antenatal or incidental at the time of surgery.
- Have no contraindications to study procedures, according to provider.

The following investigations were done in each case.

- Pelvic & clinical examination and findings.
- CBC, LFT, RFT, Sr. Electrolytes.
- Tumor markers (if applicable).
- Ultrasound and/or Doppler study.
- The details of surgery, if any, were taken.
- Histopathology findings in operated cases were noted.

On admission the detail history of all patients was taken.

**Exclusion criteria**

- Non pregnant patient with adnexal mass.
- Ectopic pregnancy.
- Heterotrophic pregnancy.
- Patient not keeping follow up.

**Management**

- Conservative
- Laparotomy
- Laparoscopy

Histopathological Examination.

**OBSERVATION AND RESULTS**

In present study total 42 cases were analyzed among 11261 number of deliveries in our institute, giving incidence of 0.37%.

**Table No. 1: Age wise distribution**

Age in years	No. of Cases	Percentage
< / = 20	08	19%
2 -25	10	23.8%
26-30	16	38%
>30	08	19%

In the study (n= 42), the mean age group for adnexal mass with pregnancy was 26-30 years.

**Table No. 2: Parity wise distribution**

Parity	No of cases	Percentage
Nullipara	13	31%
Para 1	16	38%
Para 2	11	26%
Para 3	02	05%

The above table (n=42) clearly shows that incidence of adnexal mass with pregnancy is maximum (38%) in cases with parity 1. The second most common were the primigravida patients accounting to 31%.

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**Table No.3: Distribution according to gestational age at the time of diagnosis.**

Gestational age(Weeks)	No. of cases	Percentage
≤10	13	31%
11-20	17	40.5%
21-30	10	24%
31-40	02	4.5%
≥41	00	00

In present study maximum numbers of cases were diagnosed of having adnexal mass with pregnancy in second trimester followed by the first trimester followed by the first trimester.

In present study 17 cases (40.5%) were diagnosed as having adnexal mass with pregnancy at 11-20 weeks of gestational age while 13 cases (31%) were diagnosed before 10 weeks of gestational age.

In present study out of 42 cases 31 patients operated and 11 patients were managed conservatively. There were 3 patients who were operated at postpartum period as patients delivered vaginally uneventfully.

Out of 31 patients who required operation, 16 patients (52%) were operated between 11 to 20 weeks of gestation.

**Table No.4: Distribution according to gestational age at the time of surgery**

Gestational age(weeks)	No. of cases	Percentage
≤ 10	01	03%
11-20	16	52%
21-30	04	13%
31-40	07	23%
≥ 41	00	00%

**Table No.5: Distribution according to size of adnexal mass at ultrasound**

Size	No. of cases	Percentage (%)
≤ 5	09	22%
6-10	17	40%
11-15	13	31%
16-20	03	07%
≥ 21	01	2.37%

In present study, we found one adnexal mass more than 20 cm. (2.37%) Maximum number of cases 17 (40%) had adnexal mass of size between 6-10 cm. 9 (22%) adnexal masses were less than 5 cm, which were subsequently managed conservatively.

**Table No.6: Distribution according to level of CA125.**

CA 125	No. of cases	Percentage
≤ 10	13	43%
11-25	17	57%
26-40	00	00%
41-55	00	00%
≥ 56	1	3.3%

In present study CA125 was studied in 30 cases. Maximum cases had CA125 value in the range of 11-25 mIU/ml. But only one patient had CA125 ≥ 56mIU/ml (3.3%).

**Table No.7: HPR (Histopathological Report) wise distribution**

HPR	No of cases	Percentage
Simple/Follicular cyst	04	13%
Mucinous cystadenoma	09	29%
Serous cystadenoma	06	19%
Teratoma	09	29%
Dysgerminoma	01	3.3%
Other	02	07%

In present study (42), 31 patients underwent surgery and 11 patients were managed conservatively. Out of total 42 cases, 9 cases were found to have Teratoma (Dermoid cyst). Out of 9 cases there were 4 had bilateral lesions. Another 9 patients were found to have Mucinouscystadenoma and 6 patients were diagnosed with serous cystadenomas. 4 cases were found to have simple cyst. One patient was diagnosed as Dysgerminoma.

There were 2 rare cases reported; one was having ectopic kidney with severe hydronephrosis which subsequently underwent nephrectomy. Other case was found to have enlarged uterine horn and the pregnancy was continuing in the other horn of the uterus.

**Table No.8: Complication wise distribution**

Complications	Percentage
Torsion	06%
Hemorrhage	01%
Rupture	00%
Infection	00%
Malignancy	01%

There were total 8 patients who had complications (18%); 6 patients had torsion and 1 patient had haemorrhage. 1 patient had malignancy.

**Table No.9: According to management of adnexal masses in pregnancy.**

Management	No. of cases	Percentage	
Conservative	11	26	
Operative	Emergency	07	17
	Elective	24	57

In present study out of 42 cases studied, 11 (26%) patients were managed conservatively. 31 (74%) patients were managed with operative intervention. 7 patients underwent emergency surgery and 24 patients underwent elective surgery.

In present study 33 patients who went up to term pregnancy, out of which 22 cases were delivered vaginally and 11 cases underwent LSCS. There were 3 patients who delivered vaginally but operated in postpartum period all the patients who underwent LSCS had obstetrical indications and none of them were operated for adnexal mass complication.

There were total 5 patients who had preterm delivery out of which 3 patients needed LSCS and 2 patients delivered vaginally. 2 patients had PPROM and delivered vaginally. Those patients needed LSCS had obstetrical indication Eg. Abruption placenta, primigravida with twin pregnancy with first non-vertex presentation, primi with breech presentation etc. Two patients had spontaneous abortion.

**Table No.10: Distribution according to Perinatal outcome of adnexal masses in pregnancy.**

Perinatal outcome	Mode of delivery	No. of cases	Percentage
Term	Vaginal delivery	22	52
	LSCS	11	26
Preterm	Vaginal delivery	02	05
	LSCS	05	12
Abortion		02	05

**DISCUSSION**

The true frequency of adnexal masses is impossible to determine because most adnexal cyst develop and resolve without clinical detection. The first trimester screening ultrasound can incidentally detect adnexal masses.

In present study (n= 42), 16 patients (38%) were between the age group of 25-30 years. Shirin Niroumanesh et al. also had similar result in 2009 in Iran <sup>2</sup>.

Apichart Chittacharoea et al also stated that mean age group was 28.9 ± 4.8 years. <sup>3</sup>

The incidence of adnexal masses in pregnancy in present study was maximum in multipara patient. There were 16 Para - 1, patients accounting for 38% of the total found with adnexal mass in pregnancy. The study conducted by Tayyaba Majeed et al. (2008) found multiparity (80%) as one of the factors for detection of adnexal mass in pregnancy. <sup>4</sup>

In present study, maximum number of patients was between 11-20 weeks of gestation with adnexal mass. Total 17 cases (52%) were at mean gestational age of 15 weeks at the time of diagnosis. Further, 13 cases (31 %) cases were detected to have adnexal mass with pregnancy before 10 weeks of gestational age.

Routine sonographic assessment (transabdominal and /or transvaginal) of woman in early pregnancy is done for dating, viability and determination of the number of fetuses, as well as the measurement of nuchal fold thickness. This has led to an increase in the diagnosis of coexistent adnexal masses. Hence, the majority of the cases are diagnosed before or at early second trimester.

In study conducted by Apichart Chittacharoea et al. median age of elective exploratory Laparotomy was 16 weeks and 11 weeks was for emergency Laparotomy. <sup>3</sup>

Ergenoglu et al. studied adnexal masses in pregnancy and found median age at the time of operation to be 34.5 weeks. <sup>5</sup>

Maraca Tosun et al. reported mean gestational age at the time of operation to be 20 weeks. <sup>6</sup>

In present study exploratory laparotomy most commonly performed between 11- 20 weeks of gestation.

Apichart Chittacharoea et al. reported 44 % cases having adnexal mass between 7-10 cm. comparable to present study where 40 % cases were found to have adnexal mass between 6-10 cm. <sup>3</sup>

Ergenoglu et al. found that the median size of adnexal mass in diameter was 8.3 cm. <sup>5</sup>

Migraci Tosun et al. stated mean diameter of adnexal masses was 8.7cm. <sup>6</sup>

In present study, 30% patients were studied with Ca 125 tumor marker. Only one patient reported to have value more than the 3-fold value.

According to Spitzer et al., Ca 125 level has limited diagnostic utility in the ante partum and postpartum period. <sup>7</sup>

Kim Hoover et al. reported that most common adnexal mass during pregnancy is Dermoid cyst (25%). <sup>8</sup>

Mature teratoma (Dermoid cyst) (27.3%) and Mucinous adenomas (27.3%) were reported by MigraciTosun et al. in pregnancy <sup>6</sup>

Apichart Chittacharoea et al. observed mature cystic Teratoma (38%) is the most frequently found adnexal mass during pregnancy. <sup>3</sup>

In our study the most commonly found adnexal mass during pregnancy are mucinous cystadenoma and dermoid cyst

accounting for 29 % each. The next most common mass is serous cystadenomas (19%). Only one histopathology report was suggestive of malignancy (3%).

The study conducted by Shirin Niroumanesh et al. reported 4 out of 13 cases that had ovarian torsion and underwent emergency surgery <sup>3</sup>.

George mGraham III et al found torsion is the most common acute complication of adnexal masses in pregnancy which required surgical management (5-44%). <sup>9</sup>

In our study, 6 out of 42 (14%) cases had torsion and 2 patients had (5%) had hemorrhage; who underwent emergency Laparotomy.

In present study 11 cases were managed conservatively. Rest of 31 cases was managed surgically.

There were 28 cases operated in antenatal period and 3 cases were operated in postpartum period. 7 cases were operated on emergency basis. Remaining 24 cases were operated electively.

Two patients were operated by laparoscopically and 29 cases underwent exploratory Laparotomy.

According to Leiserowitz GS et al. laparoscopic surgery for diagnosis and management of adnexal masses in pregnancy is a reasonable option. <sup>10</sup>

There was no difference in adverse pregnancy outcome in both, elective and emergency group <sup>3</sup>.

In present study (n=42), almost 78% patients delivered at term and 17% patients had preterm Labour. Almost 59% patients delivered vaginally (term and preterm) and 38% patients underwent emergency LSCS. None of the patients in this study had to undergo LSCS in view of adnexal mass obstructing Labour. Two had spontaneous first trimester abortion.

**CONCLUSION:**

The incidence of adnexal pregnancy is 1 in 268 pregnancies.

Adnexal mass is most commonly found in 26-30 years of age group among pregnant women.

Adnexal mass is common in multiparous patients i.e. with parity 1.

Majority of the adnexal masses during pregnancy are benign in nature.

Indications for emergency operative interference during pregnancy were complications of the adnexal masses Eg. Torsion, hemorrhage.

Ultra sound is the first line of investigation and modality of choice for the diagnosis of adnexal masses in pregnancy. MRI is preferred in large adnexal masses which suspicion of malignancy.

Operative management for adnexal mass is safe and hence most commonly performed in second trimester.

Dermoid cyst and mucinous cystadenoma of the ovary are the most common pathology found in adnexal masses in pregnancy

Torsion is the most common complication occurring with the adnexal masses in pregnancy.

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**CONFLICT OF INTEREST:**None declared.

**ETHICAL APPROVAL:** The study was approved by the Institutional Ethics Committee.

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