

Management of Adnexal Mass During Cesarean Section

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Aims: To find out the prevalence of adnexal mass during Cesarean Section, its management and histological profile.

Methods: This is a retrospective study conducted for 4 years from 2013 to 2017 at Paropakar Maternity and Women's Hospital, Kathmandu, Nepal. There were 18993 Cesarean Sections out of 72263 total births screened for adnexal masses from operation theatre register and record section.

Results: The incidence of adnexal mass during cesarean section was 0.31% (58 out of 18993). Among them 15.52 % diagnosed antenatally and 84.48 % were incidentally diagnosed during cesarean section. Among 58 cases, 6 (10%) were bilateral amounting to 64 adnexal masses among which 35 (54.69%) masses had cystectomy, 20 (31.25%) masses had oophorectomy, 6 (9.37%) had aspiration/ drilling done and 3(4.69 %) masses were left without intervention. Among those cases only 48 histopathological reports were available. All the masses were benign and the most common was benign mature cystic teratoma (34; 69.38 %) and the least common was fibroma (1; 2.04%).

Conclusions: Adnexal masses during cesarean section should undergo surgical removal.

Keywords: adnexal mass, cesarean section, histopathological profile, management

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INTRODUCTION

The adnexa of the uterus are comprised of ovary, fallopian tube, round and ovarian ligament and its connective tissue. The most common adnexal masses during pregnancy are ovarian in origin. It can be symptomatic or asymptomatic for years. Both benign and malignant masses may arise from the adnexa.

The incidence of adnexal mass in pregnancy ranges from 1 in 81 to 8000 pregnancies.¹ With the increasing use of ultrasonography during pregnancy, the adnexal masses are diagnosed early in first trimester. The incidence of adnexal masses is high in first trimester and it subsequently decreases during third trimester.² Adnexal mass in pregnancy can be complicated by torsion, rupture or bleeding / infection or obstruction during labour. However, most of adnexal masses are asymptomatic. Those masses diagnosed antenatally management depends upon the size, nature and its sonographic characteristics. In general, for persistent adnexal mass resection is planned at 14-20 weeks of gestation.³ Those masses that are diagnosed incidentally management considerations

include whether resection is necessary and its period of pregnancy. No clear guidelines are there on incidentally diagnosed adnexal masses during cesarean section. If there is clinical suspicion of abnormality, then the histological examination is preferred.

METHODS

This is a hospital based retrospective descriptive study conducted in Department of Obstetrics and Gynaecology and Pathology for four years from 14 April 2013 to 13 April 2017. Approval for the study was taken from the ethical committee of the hospital. The data were collected from the record section, operation records, admission and pathology record. The data extracted were age, parity, known or incidental diagnosis of adnexal mass, its management and histopathological profile. Descriptive data were generated as percentage and mean.

RESULTS

There were 72,263 births from 14/4/2013 to 13/4/2017 and 18,993 (26.28%) had cesarean section. Total adnexal masses were 58 (0.31%), 9 (15.52%) diagnosed antenatally whereas 49 (84.48%) cases diagnosed at the time of cesarean section. There were total 9 elective cesarean sections whereas 49 were emergency cases. The adnexal masses detected were 1 in 327 cesarean sections and 1 in 1246 total deliveries (Table-1). Mean maternal age was 26

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years ranging from 17 to 37. The mean gravidity was 1.8 (range=1-7). Fifty eight cesarean sections were done for obstetrics indication. The most common indication for cesarean section was fetal distress 25 (43.10%) (Table-2).

Table 1: Incidence of cesarean section and adnexal mass

Year	Total deliveries	Cesarean section	CS incidence	Adnexal mass	Adnexal mass incidence/CS
2016	18,993	5,017	26.41%	16	0.32%
2015	17,580	4,460	25.37%	16	0.36%
2014	19,278	4,918	25.51%	16	0.33%
2013	18,412	4,598	24.97%	10	0.22%
Total	72,263	18,993	26.28%	58	0.31%

CS = Cesarean Section

Table 2: Indications for cesarean section (N=58)

Fetal distress	25 (43.10%)
Breech	8 (13.80%)
Previous cesarean section with other comorbidities	8 (13.80%)
CPD	6 (10.34%)
Oligohydrannios	4 (6.90%)
Severe pre eclampsia with unfavourable cervix	2 (3.45%)
Chorioamnionitis	2 (3.45%)
Placenta previa II b	1 (1.72%)
Failed induction	1 (1.72%)
Ovarian cyst	1 (1.72%)

The size of the adnexal mass ranges from 1 to 15cm in diameter and 90% were unilateral (Figure 1).

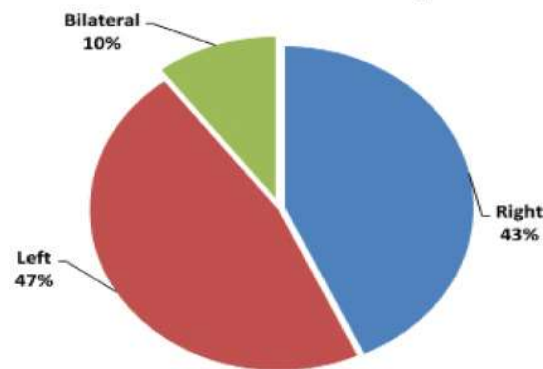


Figure 1. Location of the adnexal masses.

The treatment received during cesarean section was cystectomy in 35 (54.68%) masses, oophorectomy in 20 (31.25%), drilling or aspiration in 6 (9.37%) and conservative management in 3 (4.68 %) masses (Figure 2).

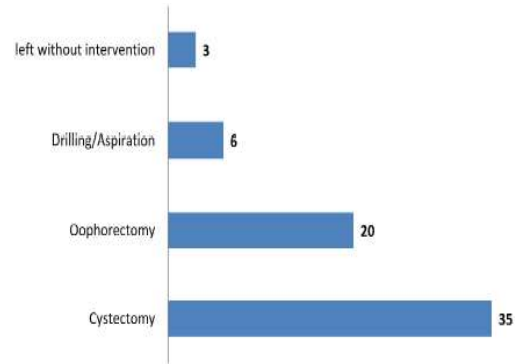


Figure 2. Management modality of adnexal mass

Two cases were left without interference – one case had bilateral cyst size about 3cm x 3cm with dense adhesion and in another case there was a broad ligament fibroid clinically.

Among the 54 masses sent for histopathological examination, only 49 reports were available.

The most common histopathological diagnosis was mature cystic teratoma in 34 (66.66 %) masses and 88% masses had pathological histology (Table-3).

DISCUSSION

The incidence of adnexal masses during pregnancy varies from 1 in 70 to 1 in 2318.⁴ It is attributed to the increasing use of ultrasonography and the increasing cesarean section rate. The frequency in our hospital is 1 in 1246 among total deliveries and 1 in 327 cesarean deliveries. The incidence of incidental adnexal masses during cesarean section is much higher than it was diagnosed antenatally. It could be attributed to the difficulty in visualizing the adnexal masses during third trimester or most patients were not diagnosed in their first and second trimesters, whereas some cases were unbooked and did not have any ultrasonography done antenatally. In various retrospective studies, the incidence of incidental adnexal mass during cesarean section was found to be 1 in 122 to 1 in 1447.⁵⁻⁸ In a 12 year retrospective study done by Cristian et al,⁹ found that with the increase in the cesarean section rate and their routine cesarean section technique involving exteriorizing the uterus for suture lead to

the diagnosis of more adnexal masses from 0.21-0.32% to near 1% whereas in our study the rate was almost constant 0.22 % to 0.36% (Table 1).

Table 3: Histopathological profile of adnexal masses (N = 49)

Mature cystic teratoma	34 (69.39%)
Benign Mucinous Cystadenoma	3 (6.12%)
Benign Serous Cystadenoma	3 (6.12%)
Benign Simple Cyst	4 (8.17%)
Luteinized Follicular cyst	2 (4.08%)
Benign Paramesonephric cyst	2 (4.08%)
Fibroma	1 (2.04%)

Like in many centers, we strongly prefer to surgically manage the adnexal masses during cesarean section in order to prevent repeat surgery later and exclude the possibility of malignancy.^{5, 8-11} The most common indication for cesarean section in our institute was fetal distress whereas in others it was previous cesarean section followed by fetal distress.^{9, 12, 13} There was one case of twisted hemorrhagic cyst 6 cm x 7 cm, in which histologically mature cystic teratoma was documented. Cyst size 6-10 cm was considered to be at increased risk of torsion but it was more common in the first trimester.^{14, 15} Koo et al concluded that mass diameter >15 cm are 12 fold higher risk of malignancy than mass <6 cm.¹⁴ Schwartz et al reported that masses >7 cm carry an increased risk of malignancy.¹⁶

Although the incidence of ovarian malignancy is very rare, the incidence varies from 0.04 to 0.08 per1000

deliveries.^{11, 17-19} So, careful evaluation of any adnexal masses should be done with ultrasonography and if needed magnetic resonance imaging should be done and appropriate management should be carried out, though the definitive diagnosis is through histopathological evaluation.²⁰ The reliability of tumor makers in diagnosis and characterization of tumors in pregnancy is debatable as during pregnancy elevations in tumor markers are mostly associated with the normal physiologic changes in pregnancy and presence of obstetric complications like preeclampsia, HELLP syndrome, miscarriage.²¹

Our study supports the most common adnexal mass to be mature cystic teratoma like previous studies^{5, 8, 9, 13, 15} whereas Baser et al and Nafiser et al observed the most common adnexal mass to be mucinous cystadenoma.^{6, 12} It was fortunate that all the adnexal masses came out to be benign in our cases.

In our study, there was 1 case (2.22%) of ovarian fibroma. Similar reports was shown by Furau et al and Hobeika et al.^{9, 10} Erdem et al reported a very rare case report of asymptomatic tubo-ovarian abscess during cesarean section performed for an obstetric indication.²²

CONCLUSIONS

Surgical removal of clinically pathological adnexal masses should not be left as such and better to encourage operating surgeon to excise at the time of cesarean section.

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