

# Clinical and histopathological outcome of adnexal mass in a tertiary care centre

Shrestha D,<sup>1</sup> Sharma J,<sup>1</sup> Chowdhary T,<sup>2</sup> Dhital A,<sup>1</sup> Shakya K<sup>1</sup>

<sup>1</sup>Dipty Shrestha, <sup>1</sup>Jyotshna Sharma, <sup>1</sup>Anju Dhital, <sup>1</sup>Kristina Shakya, Department of Obstetrics and Gynaecology, Kathmandu Medical College and Teaching Hospital, Sinamagal; <sup>2</sup>Taanya Chowdhary, Department of Obstetrics and Gynaecology, Paropakar Maternity & Women's Hospital, Thapathali, Kathmandu, Nepal.

## Abstract

**Introduction:** Adnexal mass in women of all age groups is a common presentation. Early diagnosis and intervention play an important role in the management of ovarian cyst as malignant mass is fatal and late diagnosis is associated with high mortality. Thus, timely evaluation and management is essential to improve the prognosis and survival rate of malignant ovarian mass.

**Objective:** To assess the pattern of outcomes in women presenting with adnexal mass in a tertiary care centre.

**Methodology:** A descriptive cross-sectional study was conducted in the department of obstetrics and gynecology of Kathmandu Medical College, from 1<sup>st</sup> January to 1<sup>st</sup> April 2025 after obtaining ethical clearance from the institutional review committee. All women with adnexal mass meeting the inclusion criteria were enrolled in the study. Convenience sampling method was used. The data was analysed by using statistical package for social sciences, IBM SPSS Statistics for Windows version 20 (IBM Corp., Armonk, N.Y., USA).

**Results:** Among 56 patients, 19 (33.9%) of them were in the age group of 20-30. Surgical intervention was done in 21 (37.5%) cases, among which total abdominal hysterectomy with bilateral salpingo-oophorectomy was done in 7 (33.3) patients, deroofting in 1 (4.8 %) patient, cystectomy in 9 (42.9%) cases, salpingo-oophorectomy in 3 (14.2%) cases and subtotal hysterectomy in 1 (4.8%) patient. The commonest histopathological examination finding was mature cystic teratoma 8 (39%) followed by serous cystadenoma 4 (19%).

**Conclusion:** Benign ovarian cysts are common in the reproductive age group and among them mature cystic teratoma and serous cystadenoma are the leading ones.

**Keywords:** laparoscopy; Magnetic resonance imaging; ovarian cyst; ultrasonography.

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## Address for correspondence

Dr. Dipty Shrestha  
Associate Professor,  
Department of Obstetrics and Gynaecology,  
Kathmandu Medical College and Teaching Hospital, Sinamagal,  
Kathmandu, Nepal.  
E-mail: shresdipty@gmail.com.

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## INTRODUCTION

The ovaries, fallopian tubes, and structures of the broad ligament form the uterine adnexa and any lesion arising from these areas are termed as an adnexal mass.<sup>1</sup> Majority of the adnexal masses are primary diseases of the ovary or fallopian tube, but pathological enlargements of structures involving the broad ligament, uterus, bowel, or retroperitoneum, or metastatic disease from another site, such as the breast or stomach may also present.<sup>2</sup> Ovarian cysts affects 8-18% of reproductive aged women globally. Their prevalence varies with age, and they may be benign or malignant, requiring careful assessment to determine appropriate management. Adnexal masses are often detected incidentally during routine pelvic examination or ultrasonography, as many cases remain asymptomatic. Diagnostic accuracy has improved with modern imaging techniques like ultrasonography (USG) and Magnetic resonance imaging (MRI), while biomarkers like CA-125, and beta-hcg help differentiate between benign and malignant conditions.<sup>3</sup>

Managing adnexal masses can be challenging due to their diverse etiologies and overlapping clinical features. To reduce morbidity and mortality, early diagnosis with biochemical and radiological investigation should be done.<sup>4</sup>

Thus, the objective of this study was to assess the pattern of outcomes in women presenting with adnexal mass in the department of obstetrics and gynecology of a tertiary care centre.

## METHODOLOGY

A descriptive cross-sectional study was conducted in the department of obstetrics and gynecology at Kathmandu Medical College and Teaching Hospital (KMCTH) from 1<sup>st</sup> January 2025 to 1<sup>st</sup> April 2025 after obtaining the ethical clearance from the Institutional Review Committee (Reference No.2512202101). All the women including postmenopausal women presenting to the department of obstetrics and gynaecology with the diagnosis of adnexal masses fulfilling the inclusion criteria were enrolled. The inclusion criteria included all the women coming to the gynaecology outpatient department (OPD) of KMCTH with the findings of adnexal mass of any size diagnosed by USG or MRI. After diagnosis, tumour markers –CA- 125, Beta HCG, lactate dehydrogenase (LDH), Alphaprotein and carcinoembryonic antigen (CEA) were sent. Asymptomatic women with simple or hemorrhagic cyst or endometriotic cyst less than 5 cm were planned for conservative management and were managed with hormonal treatment. All the cases enrolled in the study were explained about the study and an informed consent was taken. A convenience sampling method was used for data collection. The sample size was calculated using the following formula:

The sample size calculation was done by using the following formula:

$$n = \frac{Z^2 \times p \times q}{e^2}$$

$$= \frac{(1.96^2 \times 0.167 \times 0.833)}{0.1^2}$$

$$= 53.4$$

Where,

n= minimum required sample size

Z= 1.96 at 95% Confidence Interval (CI)

p= prevalence taken 16.7% in reference to the article Study of ovarian tumours in Nepal Medical College Teaching Hospital. Nepal Med Coll J.<sup>5</sup>

q= 1-p

e= margin of error, 10 %

The minimum calculated sample size was 54. However, 56 cases were included in our study.

Demographic and clinical data were collected in the OPD and ward using a structured questionnaire which included demographic profile, general history, past and present obstetric history, history of past illness, family history, drug history. Baseline USG was taken into account along with other tumour markers. Whether the individual undergoes conservative management or any surgeries was also noted. As well as the histopathological examination (HPE) reports were followed and correlated. The data were analyzed using statistical package for social sciences, IBM SPSS Statistics for Windows version 20 (IBM Corp., Armonk, N.Y., USA). The descriptive statistics are presented as frequencies, charts and percentage.

## RESULTS

Among the total 56 patients with the adnexal mass, the more than one-third 19 (33.9%) were from 20-40 years of age followed by 41-50 years of age 15 (26.8%). Among the total 56 patients with adnexal mass, 30 (53.6%) of the women were multiparous followed by nulliparous 17 (30%) and primigravida 9 (16%). Among 56 patients with adnexal mass, only 6 (10.7%) of the women had menopause while 50 (89.3%) of the women had not had menopause yet (Table 1).

Among the 56 patients with adnexal mass, 30 (53.6%) had the right adnexal cyst, 23(41%) had left adnexal cyst and 3 (5.4%) had bilateral adnexal cyst (Figure 1).

Among the total 56 cases, 21 (37.5%) had surgery and among them 9 (43%) underwent cystectomy (Table 2). Histopathological examination sample was sent and the most common finding was mature teratoma in 8 (39%) patients followed by serous cystadenoma in 4 (19%) patients (Table 3)

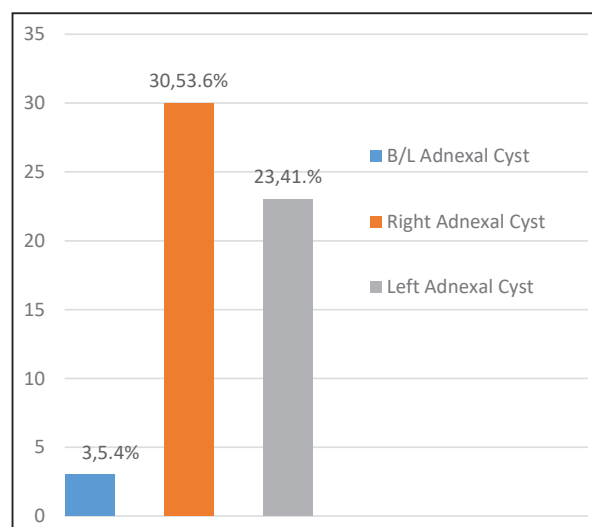


Figure 1: Status of adnexal mass.

**Table 1: Sociodemographic and obstetrical variable of patients**

Variables	n (%)
<b>Age (in years)</b>	
<20	2 (3.5)
20-30	19 (33.9)
31-40	13 (23.2)
41-50	15 (26.8)
>50	7 (12.)
<b>Parity status</b>	
Nulliparous	17 (30)
Primigravida	9 (16)
Multiparous	30 (54)
<b>Menopausal status</b>	
Yes	6 (10.7)
No	50 (89.3)

**Table 2: Treatment modalities used in cases with adnexal mass.**

Treatment modalities	n (%)
Conservative	35 (62.5)
Surgical	21 (37.5)
<b>Type of surgical treatment (n=21)</b>	
Deroofing	1 (4.8)
Cystectomy	9 (42.9)
Salpingo-oophorectomy	3 (14.3)
TAH with BSO	7 (33.3)
Subtotal Hysterectomy	1 (4.7)

**Table 3: Histopathological examination (HPE) Findings of Adnexal Mass. n=21**

Histopathological examination	n (%)
Mature cystic teratoma	8 (39)
Serous cystadenoma	4 (19)
Corpus luteal cyst	3 (14.2)
Haemorrhagic cyst	2 (9.5)
Endometrioma	1 (4.8)
Fibroma	1 (4.8)
Suppurative cyst	1 (4.8)
Mucinous cystadenoma	1 (4.8)

## DISCUSSION

In this study out of the total 3701 patients presenting to the Outpatient Department of Obstetrics and Gynaecology during the study period, women identified with adnexal mass were 56 (1.54%) The age of women with adnexal

mass ranged from 16 to 72 years. The majority of them were in the age group of 20-30 accounting for 33.92% followed by the age group of 41-50 years (26.78%) whereas postmenopausal women were only 12.5%. In a study done by S. Kayastha, the range of age is 18 to 70 years and out of 95 patients with ovarian tumour 90% were benign and 10% were malignant.<sup>5</sup> In a study by Pudasaini et al, the range of age was 6 to 70 years.<sup>6</sup> In a study by MJ Das et. al, the occurrence of adnexal mass in all age group was 8.62% of all gynaecological admissions and 1.08% of all patients attending Assam Medical College and hospital, Dirubgarg and mean age of the patient with adnexal mass was 38.61 years.<sup>7</sup> In another study by Kade ND et al, total of 100 patients were diagnosed to have adnexal masses, the patient age ranged from 18 to 65 with a mean of 36.6 years.<sup>3</sup> In a random sample of 335 asymptomatic women, aged between 25 and 40 years; the prevalence of adnexal lesion on ultrasound examination has been 7.8%. In comparison the ovarian cyst is 6.6 percent.<sup>8</sup> Douglas L Brown et al studied 211 ovarian masses in patients aged between 16 and 78 years with the mean age of 39.<sup>8</sup> In the present study, out of 1250 admissions in the gynecology ward, the incidence of adnexal masses undergoing surgical intervention was 8.62%. 92.41% were ovarian in origin of which 20.68% were non neoplastic, 20.68% were malignant and 51.04% were benign neoplasms.<sup>7</sup> In this study most of the women were multiparous (53.57%). In contrast to this finding, was the finding of S. Kayastha where 58.9% tumors occurred in nulliparous and low parity (1 to 2) women.<sup>5</sup> Simple cysts and haemorrhagic cysts in women of reproductive age group are mostly physiologic.<sup>3</sup> In this study right sided adnexal mass was seen in 53.57%. Left sided adnexal cyst accounted for 41.07% and bilateral was seen only in 5.35%. This finding was similar to the findings of the study by Kade ND, Wagh G where most of the adnexal pathologies were unilateral (83%) on presentation with 47% involving left side and 36% were on right side bilateral involvement was seen in 17% cases.<sup>3</sup> In a study done by Kayastha et al. there were 12 patients with bilateral tumors.<sup>5</sup> In a study by Pudasaini et al, out of total cases of ovarian cyst (both benign and malignant), bilateral involvement was found in 18.6% cases and among the surface epithelial tumours, serous cystadenoma was the commonest one (40.2%) followed by mucinous cystadenoma(9.8%).<sup>6</sup>

In this study, among the total 23 patients undergoing surgery; TAH with BSO was done in 8 patients, deroofing in 1 patient, cystectomy in 10 cases, salpingo-oophorectomy in 3 cases and subtotal hysterectomy in 1 patient. Thirty-seven (38.9%) patients underwent total

abdominal hysterectomy (TAH) with bilateral salpingo-oophorectomy (BSO), 10 (10.5%) had TAH with unilateral salpingo-oophorectomy (SO), 28 (29.0%) with SO, 10 (10.5%) had enucleation of the cyst, 8 (8.4%) had cystectomy and 2 (2.1%) patients underwent debulking operation.<sup>5</sup> This study revealed mature cystic teratoma (10.71%) was the commonest HPE finding among the women undergoing surgery followed by serous cystadenoma (5.35%). There were 69 (72.6%) surface epithelium ovarian tumors and 26 (27.4%) germ cell tumors. Among the surface epithelial tumour, maximum was serous cyst adenoma 38 (40.0%), 26 (27.4%) were mucinous cyst adenoma, 3 (3.2%) were Brenner and 2 (2.1%) were Fibroma. As for germ cell tumour, 24 (25.3%) Mature teratoma, 1 (1.1%) dysgerminoma.<sup>5</sup> A study by Mukut Jyoti Das et al, found that the most common tumour was serous cystadenoma (41.89%).<sup>7</sup> Also Sharma I et al in their study found serous systadenoma as the most common tumour (34%).<sup>9</sup> In a study by S O Shardha et al, serous cystadenoma was the most commonest benign tumour (67%) followed by mucinous (19%) and dermoid (11.6%).<sup>4</sup> In a study by Ashraf et al among non-neoplastic lesion, luteal cyst was most common (44.70%, 38/82) followed by simple serous cysts (35.29%, 30/82)<sup>10</sup> The commonest type of ovarian neoplasm seen in our study was surface epithelial tumor whether benign or malignant (42/100). A study by Bhattacharya et al. 4 cases of fibromas and 2 cases of fibrothecoma were found out of 270 cases of ovarian tumors.<sup>11</sup> In a study by Rai R, Bhutia PC, Tshomo U, mature cystic teratoma (15.7%) was the commonest type of germ cell tumor.<sup>12</sup>

Other benign cysts found in our study were haemorrhagic corpus luteal cyst (13.7%) and endometriosis(5.9%).<sup>6</sup> Though ovarian cyst and tumor can be diagnosed clinically, origin and nature of tumor cannot be determined clinically.<sup>8</sup> Histopathological examination of the ovarian tumor is must to find out the origin and the nature of the tumor.<sup>8</sup> Benign tumors can be safely removed by surgery and malignant tumors are managed according to the type, grading and stage of the tumor.<sup>8</sup> Ovarian neoplasia is dangerous as they are silent killers because they are diagnosed late with initial no symptoms. Most ovarian cancers are diagnosed at advanced stages, with 5-year survival as low as 10%. Early diagnosis provides 5-year survival rate up to 90%.<sup>12</sup> Nulliparity, early menarche, late menopause, Caucasian race, primary infertility, and endometriosis are contributing factors for ovarian cancer.<sup>13</sup>

The limitation of our study is that it is a single center study with small sample size, therefore the findings cannot be generalized to a wider population. A larger scale study is required further with more histopathological identifications and treatment variations.

## CONCLUSION

Benign ovarian cysts are common benign tumors in the reproductive age and its early diagnosis and treatment is beneficial and prevents morbidity

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