

Histopathological Profile of Ovarian Masses

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Aims: The aim of this study was to evaluate the incidence of neoplastic as well as non-neoplastic ovarian lesions and to find out the frequency and age distribution of benign and malignant ovarian neoplasms.

Methods: A retrospective cross sectional study on a series of cases was performed in the Department of Pathology, Patan Academy of Health Sciences, Patan Hospital, Lalitpur, Nepal from April 2011 to March 2016. Data from the histopathology database were analyzed using SPSS version 16.0.

Results: During the study period, surgical specimens of 528 ovarian masses were received at our institution. Among them, 399 cases (76%) were neoplasms and 129 cases (24%) were non-neoplastic lesions. Benign, borderline and malignant neoplasms were 89.7%, 1.8% and 8.5% respectively. Benign neoplasms were more common in 21-30 years and malignant in 41-50 years age group. There were 156 (39.1%) surface epithelial tumors, 236 (59.1%) germ cells tumors and 6 (1.5%) sex cord stromal tumors. Mature cystic teratoma, followed by serous cystadenoma was the most frequently encountered benign tumor. Serous cystadenocarcinoma was most prevalent in the malignant group. Among the non-neoplastic masses, the most common was endometriotic cyst (55%) followed by corpus luteal cyst (29%).

Conclusions: Ovarian neoplasms are more common than non-neoplastic lesions. Malignant tumors affect older women more frequently than younger women. Mature cystic teratoma was the most frequently encountered benign tumor. Serous cystadenocarcinoma was most prevalent in the malignant group. Endometriotic cyst was the most common non-neoplastic lesion.

Keywords: non-neoplastic lesions, ovarian masses, ovarian neoplasm

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INTRODUCTION

The ovaries are paired reproductive organ located within the pelvic cavity. The ovary has three main histologic compartments: surface mullerian epithelium, germ cells and sex cord-stromal cells. Each compartment gives rise to distinct non-neoplastic and neoplastic entities. The incidence of ovarian cancer ranks only below carcinoma of the cervix and endometrium in the female genital tract.¹ It is a leading cause of death from gynecologic malignancy.² Early diagnosis is difficult due to its vague symptoms, intra-abdominal location and lack of ideal screening modality. Ovarian tumors exhibit a wide spectrum of histopathology which reflects the different cell of origin.³ Overall ovarian tumors can be classified into benign, borderline and malignant categories. A number of non-neoplastic lesions can occur in the ovary.¹

The current study aims to evaluate the incidence of neoplastic as well as non-neoplastic ovarian lesions and to find out the frequency and age distribution of benign and malignant ovarian neoplasms at Patan Academy of Health Sciences, Patan Hospital over a 5 year study period.

METHODS

This is a retrospective cross sectional study performed in the Department of Pathology at Patan Academy of Health Sciences, Patan Hospital, Lalitpur, Nepal. This study was conducted over a period of 5 years, from April 2011 to March 2016. Patients with ovarian masses surgically treated and whose surgical specimens were submitted for histopathological examination at our institution were included in the study, irrespective of the surgical modality undertaken. Thus, cystectomy, oophorectomy, salpingo-oophorectomy and total abdominal hysterectomy with unilateral or bilateral salpingo-oophorectomy samples were included in the study.

The specimens were fixed in 10% formalin. Gross examination was done and sections were taken from representative areas. The tissue was processed and stained with Hematoxylin and Eosin stain as

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per standard protocol. The slides were examined by pathologists. Histologic classification of tumors was done according to World Health Organization (WHO) guidelines. The variables were entered in a database and data was analyzed in SPSS version 16.0.

RESULTS

During the study period, 528 ovarian masses were surgically managed at our institution and their specimens received in histopathology laboratory. Among the ovarian masses, 399 cases (76%) were ovarian neoplasms and 129 cases (24%) were non-neoplastic lesions (Figure 1). Out of the neoplasms, benign, borderline and malignant neoplasms were 358 (89.7%), 7 (1.8%) and 34 (8.5%), respectively. Benign neoplasms were commonly observed in 21-30 years age group followed by 31-40 years. Borderline tumors were noted among patients in 21-60 years age group, without any particular age predilection. Maximum number of malignant neoplasms were found in 41-50 years age group. Benign tumors were more prevalent than malignant ones in all age groups. Malignant tumors were more common in older women. The distribution of ovarian masses in various age groups is shown (Figure 2).

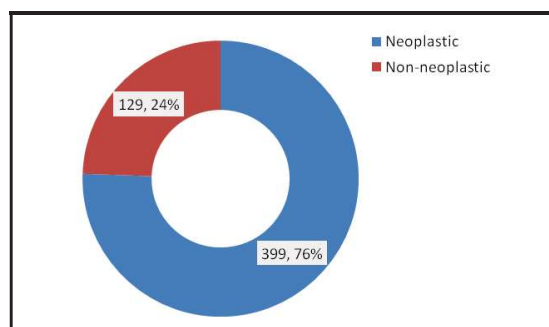


Figure 1. Incidence of neoplastic and non-neoplastic ovarian masses

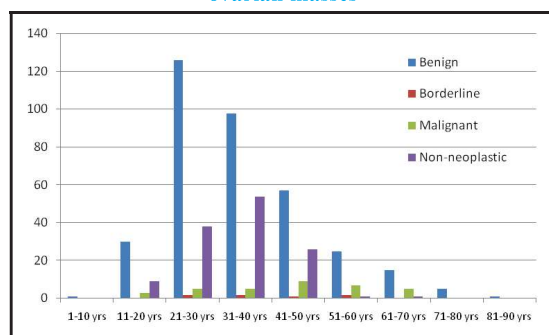


Figure 2. Distribution of ovarian masses in various age groups

Germ cell tumors were most common (59.1%) followed by surface epithelial tumors (39.1%) and sex cord stromal tumors (1.5%). Majority of the germ cell tumors were benign. Mature cystic teratoma was the most frequently encountered germ cell tumor. There were 3 cases of dysgerminoma and one case of choriocarcinoma. One case was a mixed germ cell tumor with components of MCT and yolk sac tumor. Among the surface epithelial tumors, serous cystadenoma was most common, followed by mucinous cystadenoma. Serous cystadenocarcinoma followed by mucinous cystadenocarcinoma was most prevalent in the malignant group. Granulosa cell tumor was the commonest sex cord stromal tumor. On the whole, mature cystic teratoma and serous cystadenocarcinoma were the most common benign and malignant tumors respectively. Metastatic tumors to ovary was rare, comprising of only a single case (Table 1). Among the non-neoplastic masses, the commonest was endometriotic cyst (55%) followed by corpus luteal cyst (29%). The non-neoplastic lesions were prevalent in 31-40 years age group. The histopathological pattern of non-neoplastic ovarian lesions is shown (Figure 3).

Table 1: Different histologic types of ovarian neoplasms

| Histogenesis | Histopathological types | Total number (399) |
|---|--------------------------|--------------------|
| Germ cell tumor 236 (59.1%) | Teratoma | 231 |
| | Mature | 223 |
| | Malignant transformation | 7 |
| | Immature | 1 |
| | Choriocarcinoma | 1 |
| | Dysgerminoma | 3 |
| | Mixed germ cell tumor | 1 |
| Surface epithelial tumor 156 (39.1%) | Serous | 100 |
| | Benign | 89 |
| | Borderline | 1 |
| | Malignant | 10 |
| | Mucinous | 51 |
| | Benign | 42 |
| | Borderline | 5 |
| | Malignant | 4 |
| | Clear cell carcinoma | 1 |
| | Transitional cell | 4 |
| Brenner | 3 | |
| Malignant Brenner | 1 | |
| Sex cord stromal tumor 6 (1.5%) | Granulosa cell | 3 |
| | Benign | 0 |
| | Malignant | 3 |
| Others 1 (0.3%) | Fibroma | 2 |
| | Sclerosing stromal tumor | 1 |
| | Metastatic | 1 |

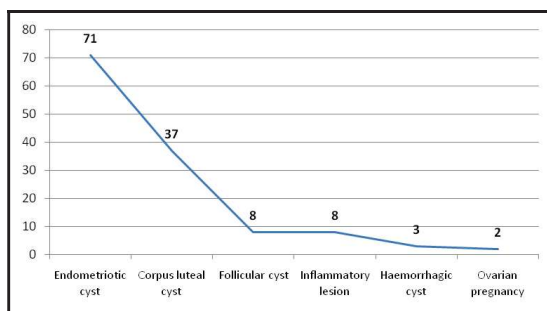


Figure 3. Histopathological pattern of non-neoplastic ovarian lesions

DISCUSSION

Out of the 528 ovarian masses included in our study, 399 cases (76%) were ovarian neoplasms and 129 cases (24%) were non-neoplastic lesions. Similar observations indicating that in ovary, neoplasms are more common than non-neoplastic lesions were reported in several studies.^{4,5} In contrast, non-neoplastic lesions were more prevalent in a study performed by Zaman et al.⁶ In a study by Kanthikar et al, the incidence of neoplastic and non-neoplastic lesions was similar.⁷ In our study, bulk of the ovarian tumors belonged to the benign category. This finding is consistent with that of Sharadha et al, Kayastha et al and Mansoor et al.^{4,8,9} In the present study, ovarian neoplasm was found over a wide age range. Maximum frequency of ovarian tumors were found in 21-40 years age group, corroborating data from many studies.^{4,10,11} Majority of the patients with benign tumors was in the age group of 21-30 years and malignancy was most prevalent in 41-50 years age group. This finding is in concordance with data of other studies which demonstrated that malignant tumors were more common in older women.^{12,13}

However, malignant tumors were observed in younger patients as well. Hence, malignancy should be ruled out in patients of all age groups.

In our study, germ cell tumors were most common (59.1%) followed by surface epithelial tumors (39.1%) and sex cord stromal tumors (1.5%). In contrast, surface epithelial tumors were most commonly encountered category reported in many literatures.^{8,11,14} On the whole, mature cystic teratoma, followed by serous cystadenoma was the most frequently encountered benign tumor. However, in studies done by Mondal et al and Mansoor et al serous cystadenoma was the most common histological type. This difference could be attributed to genetic and geographic factors. Serous cystadenocarcinoma was the most common malignant tumor supporting previous findings reported in many literatures.^{9,10} Among the non-neoplastic masses, the commonest was endometriotic cyst (55%) followed by corpus luteal cyst (29%). The non-neoplastic lesions were prevalent in 31-40 years age group. Similar findings was observed in a study performed by Okugawa et al who reported that endometriosis was the most common non-neoplastic ovarian lesion.⁵ Follicular cyst, followed by corpus luteal cyst were most common in studies performed by Yasmin et al and Gupta et al.^{14,15}

CONCLUSIONS

Ovarian neoplasms are more common than non-neoplastic lesions. Malignant tumors affect older women more frequently than younger women. Mature cystic teratoma was the most frequently encountered benign tumor. Serous cystadenocarcinoma was most prevalent in the malignant group. Endometriotic cyst was the most common non-neoplastic lesion.

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Oligohydramnios in Low Risk Pregnancies at Western Regional Hospital, Pokhara

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Aims: This study is done to see the maternal and fetal factors associated with isolated oligohydramnios.

Methods: It is a retrospective observational study done at Western Regional Hospital, Pokhara. All cases of oligohydramnios except those with diabetes mellitus, hypertension, premature rupture of membranes, preterm labour and fetal congenital anomalies were included in the study. SPSS 16 and MS-Excel were used for data entry and analysis. Results were presented as graphs and tables.

Results: Sixty cases were enrolled in the study and the mean age was 25.6 years. Oligohydramnios was more prevalent among primigravida compared to multigravida (62% vs. 38%). Half of the women (n=30) delivered in between 37 to 40 weeks of gestation while 47% (n=28) of the women were post dates and two were post term. LSCS was the most common mode of delivery in this study (n=48). Anhydramnios was detected in seven women (12%) during caesarean section and rest had scanty liquor (41 in LSCS and 12 in vaginal delivery). One fifth of them (n=12) had low birth weight and there were no cases of growth retardation. Eighty two percent of women (n=49) had scanty clear liquor while only seven percent (n=4) had meconium stained scanty liquor. One had stillbirth and the rest had Apgar score of six or more including anhydramnios.

Conclusions: There were seven cases of anhydramnios and four cases of meconium stained liquor. All the live births had Apgar score of six or more. There was one stillbirth and neonatal admission each while no neonatal death in this study.

Keywords: amniotic fluid index, fetal outcome, oligohydramnios

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INTRODUCTION

Amniotic fluid (AF) is an essential component for well being of the growing fetus during the intra-uterine life. It is regulated by the trans-membranous flow (across the amnion), intra-membranous flow (across the fetal vessels), transfer of water across the fetal skin (up to 22-25 weeks), fetal lung secretions, fetal urine (after second trimester) and swallowing. It maintains the even temperature, cushions the fetus from trauma and prevents the cord compression. It helps in development of musculoskeletal, gastrointestinal and pulmonary systems of the fetus.¹ Sonographic assessment of AF can be done by measuring single deepest pocket, amniotic fluid index (AFI) or a qualitative estimate. AFI (Phelan and co-workers, 1987) is the most commonly used method which is calculated by summing up the vertical depths of the largest pocket in each four quadrants.^{1,2}

Oligohydramnios is defined as the AFI of 5 cm or less. It affects 1-2 percent of pregnancies. It

is either idiopathic or associated with conditions like fetal growth restriction, fetal anomalies, ruptured membrane, utero-placental insufficiency and drug use.¹ It is often seen in association with maternal conditions like diabetes, hypertension or fetal conditions like congenital malformation and intrauterine growth restriction. Each of these conditions can predispose the fetus to the adverse fetal outcome. Overall prognosis is variable and largely depends upon the underlying etiology. Meconium aspiration, perinatal asphyxia and still births are at times more common in these cases which may not be solely due to the reduced liquor volume itself. Higher rates of induction, instrumental deliveries and caesarean sections are in practice for better perinatal outcome in cases of oligohydramnios. This study was carried out to see the maternal and fetal factors associated with isolated oligohydramnios.

METHODS

It is a retrospective cross sectional study done at Western Regional Hospital Pokhara from January to March 2017. Study approval was taken from the hospital. All diagnosed cases of oligohydramnios at

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