Study of Ovarian Tumor in a Tertiary Care Center of Western Rajasthan

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Abstract: _Objectives: Ovarian tumors are an increasing cause for morbidity and mortality worldwide. The present study was conducted in Dr. SN Medical College Jodhpur to determine the incidence of various histological and morphological variants of ovarian tumor, their clinical presentation and age distribution._ _Material and Methods: The study was performed in the obstetrics and gynecology department of Dr. SN Medical College Jodhpur, Rajasthan from July 2022 to February 2023 and 100 HPR reports collected from the pathology department._ _Results: Total 100 patients were included in the study with the age range from 15 years to 70 years. Maximum patients were from the age group 41 - 50 years (25%). In the present study, abdominal pain (55%) was the most common presenting complaint followed by mass per abdomen with irregular periods (13%). Majority of the ovarian tumors belonged to benign tumors (95%) followed by malignant tumors (5%). As per WHO classification, surface epithelial tumors were found to be the commonest variety (76.12%), followed by Germ cell tumors (18.46%). Among the various known subtypes of ovarian tumors, serous cystadenoma (35%) was found to be the most common subtype followed by benign cystic teratoma (17%) and then serous cystadenocarcinoma (13%). Conclusion: Benign ovarian tumors are more common than malignant or borderline tumors. Among the histopathological subtypes of ovarian tumors, surface epithelial tumors are the commonest type followed by germ cell tumors. Differentiation between benign and malignant tumors is important to assure proper management and recovery. Similar studies with greater sample size are advisable in future._

Keywords: Ovarian tumors, Serous, Mucinous, Germ cell, Teratoma

1. Introduction

Ovary being a complex and unique organ has been described to be involved by wide varieties of neoplasms. No organ of the body except the ovary gives rise to such a galaxy of neoplasms. Ovarian cancer (OC) is the seventh most commonly diagnosed cancer among women in the world. Ovarian cancer is the 2nd most common gynecologic cancer that has the highest mortality rate.

Risk of developing ovarian cancer reduced by 50 percent if taking OCP pills equal to or more than 5 years. Get screened for genetic factors BRCA 1/2 in family history of ovarian cancer. If 1st degree relatives have hereditary Ovarian Cancer or BRCA1 mutation for them, annual screening is done by TVS +CA 125 level (35 - 40 yrs of age).

Only 15 percent of ovarian cancers are diagnosed at stage one. Five - year survival for stage one ovarian cancer is more than 90 percent but declines sharply as the cancer grows and spreads. The PAP test does not detect ovarian cancer. HPE in ovarian tumors is the gold standard.

2. Material and Methods

The present study was a prospective study carried out in the department of Obstetrics and Gynaecology of two tertiary healthcare centers of Western part of Rajasthan. (1) Mathuradas Mathur (MDM) Hospital, Jodhpur, Rajasthan and (2) Umaid Hospital, Jodhpur, Rajasthan. The study included a total of 100 cases of ovarian neoplasm received at the histopathology section of the pathology department.

Method of collection of data
All ovarian specimens including incisional and excisional biopsies as well as hysterectomy with unilateral/ bilateral salpingo oophorectomy specimens from clinically suspected ovarian neoplastic lesions were included in the study. A concise clinical history regarding age, parity, presenting complaints including pain in lower abdomen, mass per abdomen, menorrhagia, post menopausal bleeding and distension with duration of symptoms were taken in the present study along with the physical findings.

Inclusion Criteria
USG finding based ovarian neoplastic lesions were included in the present study. All specimen send for histopathological examination and HPR collected from pathology department

Exclusion Criteria
The normal ovaries and ovaries with non - specific findings like follicular cyst, cystic follicles, surface inclusion cysts, hemorrhagic inclusion cysts, endometriosis, and luteoma of pregnancy were excluded from the study.

3. Result and Observation

As per the Table - 1, a total of 100 patients were included in

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the study with the age range from 10 years to 90 years. Maximum patients of benign tumors were from the age group 41 - 50 years (24 cases) followed by 23 cases in 31 - 40 years and 20 cases in the age range of 21 - 30 years.

Table 1: Age Distribution (Benign Tumor)

Age Group (Years)	Number of Patient	Patient Percentage
21 - 30	20	21.05%
31 - 40	23	24.21%
41 - 50	24	25.26%
51 - 60	12	12.60%
61 - 70	16	16.80%
Total	95	100.00%

Then, by Table - 2, it can be said that maximum patients of malignant tumors were from the age group 51 - 60 years (3 cases) followed by 1 case in 61 - 70 years and 1 case in the age range of 41 - 50 years.

Table 2: Age Distribution (Malignant Tumor)

Age Group (Years)	Number of Patient	Patient Percentage
21 - 30	0	0%
31 - 40	0	0%
41 - 50	1	20%
51 - 60	3	60%
61 - 70	1	20%
Total	5	100.00%

Morphological study (Table - 3) shows that out of 100 cases, 95 cases belong to benign ovarian tumors and 5 cases belong to malignant tumors.

Table 3: Morphological Types in Study

Type of Tumor	Number of Patient	Patient Percentage
Benign	95	95%
Malignant	5	5%
Total	100	100.00%

In the present study, abdominal pain (55%) was the most common presenting complaint followed by mass per abdomen with irregular periods (13%), heavy menstrual bleeding (11%), pain abdomen with mass abdomen (9%), distention of abdomen with ascites (8%), and infertility (4%).

Table 4: Clinical Presentation in the Study

	Number of Patient	Patient Percentage
Pain Abdomen	55	55%
Mass Pain Abdomen with Irregular	13	13%
Heavy Menstrual Bleeding	11	11%
Pain Abdomen with Mass Abdomen	9	9%
Distension of Abdomen with Ascites	8	8%
Infertility	4	4%
Total	100	100.00%

As per the table - 5, Ovarian tissues were sent to the pathology department in the form of Unilateral salpingo oophorectomy samples and Total abdominal hysterectomy specimens.

Table 5: Type of Specimen sent for HPE

Types of Specimen	Number of Specimen	Percentage
Total abdominal hysterectomy (TAH)	52	52%
Unilateral salpingo oophorectomy	48	48%
Total	100	100.00%

In the Histopathological findings (Table - 6) of the present study, Surface epithelial tumors were 74%, followed by germ cell tumors (26%). Majority of epithelial tumors were serous tumors (52%), followed by mucinous tumors (22%). Serous cystadenocarcinoma was the most common malignant surface epithelial tumor. Majority of germ cell tumors were benign cystic teratoma (dermoid cyst) (25%) followed by immature teratoma (1%).

Table 6: Histopathological Findings

Type of Tumor	Number of Patient	Patient Percentage
Serous Cystadenoma	49	49.00%
Benign cystic teratoma	25	25.00%
Mucinous cystadenoma	21	21.00%
Serous Cystadenocarcinoma	3	3.00%
Immature teratoma	1	1.00%
Mucinous Cystadenocarcinoma	1	1.00%
Total	100	100.00%

Figure 1: Gross specimen of Serous Cystadenoma

Figure 2: Gross specimen of Benign cystic teratoma
(Dermoid Cyst)

4. Discussion

The peak incidence of ovarian tumors in the present study was in the 5th decade (25%). The most common presenting symptom was abdominal pain (55%), followed by menstrual irregularities and mass abdomen (13%). Most cases were benign (95%), followed by malignant.

In the present study, Surface epithelial tumors were 74%, followed by germ cell tumors (26%). Majority of epithelial tumors were serous tumors (52%), followed by mucinous tumors (22%). Serous cystadenocarcinoma was the most common malignant surface epithelial tumor. Majority of germ cell tumors were benign cystic teratoma (dermoid cyst) (25%) followed by immature teratoma (1%).

5. Conclusion

Ovarian tumor is usually presented as pain abdomen and menstrual abnormality in females of the third to fifth decade of age group. The study was conducted in western part of Rajasthan and the results concluded that most of the ovarian tumors are benign tumors followed by malignant tumors. Surface epithelial tumors were found to be the most common variety followed by germ cell tumors in present study.

Among the subtypes of ovarian tumors, serous cystadenoma is the most common subtype followed by benign cystic teratoma and then mucinous cystadenoma. The major limitation of this study includes the small sample size and short study period, a tentative conclusion can be drawn from the results about incidence of various subtypes of ovarian tumor in western Rajasthan. Differentiation of a benign tumor from a malignant one is important for determining better management and prognosis; hence further similar studies. This concludes that with increasing age, the percentages of malignant ovarian neo - plasms tend to increase. In addition, there's a noticeable increase in the rate of ovarian cancer within the western region. Therefore, studying the factors that could possibly have contributed to this increase in incidence and their association with the histopathological types are crucial.

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