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INCIDENCE OF MALIGNANCY AMONG OVARIAN MASSES: A CROSS-SECTIONAL STUDY IN A TERTIARY CARE HOSPITAL

Obstetrics & Gynaecology

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ABSTRACT

Introduction: Ovarian cancer is the 5th most common malignancy among women and ranks 2nd among all gynecological cancers in India.1 The symptoms of ovarian cancer are unclear, and ovarian cancer is known as the "silent killer". **Aims and Objectives:** To estimate the incidence of malignancy among ovarian masses in a tertiary care hospital in Kashmir. **Material and Methods:** A cross-sectional study was done over a period of 3 years from 1st Jan 2020 to 1st Jan 2023 at the Department of Obstetrics and Gynecology, LD Hospital, GMC Srinagar. All females with clinically or radiologically diagnosed ovarian masses and scheduled for laparoscopy/laparotomy were included in this study. The tissue biopsies thus obtained were sent for histopathological examination to the Department of Pathology. **Results:** In this cross-sectional study, 397 cases of ovarian masses who underwent laparoscopy/laparotomy were studied over a period of 3 years. Over two-thirds of those diagnosed with ovarian malignancy were 50 years or older. Surface epithelial tumors are the commonest tumors accounting for 294 cases, germ cells tumors are 84 cases, sex cord stromal tumors are 15 cases and metastatic tumors account for 4 cases. Out of 397 cases, 327 (82.4%) ovarian masses were benign, 4 (1%) were borderline and 66 (16.6%) were malignant. **Conclusion:** The burden of ovarian malignancy has increased, prompting the need for improvement in the screening and diagnosis of ovarian cancer at an early stage.

KEYWORDS

Ovarian cancer, Malignancy, Incidence, Kashmir

INTRODUCTION

Ovarian cancer is the 5th most common malignancy among women and ranks 2nd among all gynecological cancers in India.[1] The symptoms of ovarian cancer are unclear, and ovarian cancer is known as the "silent killer". It accounts for more deaths than any other cancer of the female reproductive system, owing to its late presentation and lack of availability of universal screening methods for early detection.[2] The incidence of ovarian carcinoma is greater in high-income countries compared to middle and low-income ones. A woman's lifetime risk of developing ovarian cancer is approximately 1 in 70.[3]In India, the incidence of ovarian cancer ranges from 4.5 – 5.5 per 100,000 women. An increasing trend has been observed since 1982 till date. Various factors affect the occurrence of ovarian cancer, of which genetic factors play the most important role. Pregnancy, lactation and oral contraceptive pills play a role in reducing the risk of this disease.

Ovarian tumors have been classified by WHO into various categories as mentioned below[4]:-

1) Surface Epithelial – stromal tumors

a) Serous tumors:
- Benign (cystadenoma)
- Borderline (serous borderline tumor)
- Malignant (serous adenocarcinoma)

b) Mucinous tumors:
- Benign (cystadenoma)
- Borderline (mucinous borderline tumor)
- Malignant (mucinous adenocarcinoma)

c) Endometrioid tumor:
- Benign (cystadenoma)
- Borderline (endometrioid borderline tumor)
- Malignant (endometrioid adenocarcinoma)

d) Clear Cell tumors:
- Benign
- Borderline
- Malignant (clear cell adenocarcinoma)

e) Transitional Cell tumors:
- Brenner tumor
- Brenner tumor of borderline malignancy
- Malignant Brenner tumor
- Transitional cell carcinoma (Non-Brenner type)

f) Epithelial Stromal:
- Adenosarcoma
- Carcinosarcoma (formerly mixed Mullerian tumors)

2. Sex Cord - Stromal tumors

a) Granulosa tumors:
- Fibromas
- Fibrothecomas
- Thecomas

b) Sertoli Cell Tumors:
- Leydig cell tumors

c) Sex cord tumor with annular tubules

d) Gynandroblastoma

e) Steroid (lipid) cell tumors

3. Germ Cell tumors

a) Teratoma:
- Immature
- Mature
- Solid
- Cystic (dermoid cyst)

b) Monodermal (eg Strumaovarii, Carcinoid)

c) Dysgerminoma

d) Yolk Sac tumor (Endodermal Sinus tumor)

e) Mixed Germ cell tumors

OBJECTIVE

To estimate the incidence of malignancy among ovarian masses in a tertiary care hospital in Kashmir.

Methodology

A cross-sectional study was done over a period of 3 years from 1st Jan 2020 to 1st Jan 2023 at the Department of Obstetrics and Gynecology, LD Hospital, GMC Srinagar.

Inclusion criteria:

All females with clinically or radiologically diagnosed ovarian masses and scheduled for laparoscopy/laparotomy were included in this study.

Exclusion criteria:

Women with known malignancies, on neoadjuvant chemotherapy, and females who were pregnant; were excluded from the study.

The tissue biopsies thus obtained were sent for histopathological examination to the Department of Pathology. The morphological features of tumors were studied in detail and classified based on WHO

classification and graded by the FIGO grading scheme.

Statistical Methods

The recorded data was compiled and entered in a spreadsheet (Microsoft Excel) and then exported to the Data Editor of Statistical Package for Social Sciences (SPSS Ver. 20. SPSS Inc., Chicago, Illinois, USA). Graphically the data was presented by bar diagrams and pie charts.

OBSERVATION AND RESULTS

In this cross-sectional study, 397 cases of ovarian masses who underwent laparoscopy/laparotomy were studied over a period of 3 years. Clinical details, radiological and other relevant findings of patients were recorded. The HPE reports were collected and data were statistically compiled.

Surface epithelial tumors are the commonest tumors accounting for 294 cases, germ cells tumors are 84 cases, sex cord stromal tumors are 15 cases and metastatic tumors account for 4 cases.

Table 1: WHO Classification of Ovarian Tumors

TYPE OF TUMOR	NO. OF CASES	PERCENTAGE
Epithelial Tumors	294	74.06
Germ Cell Tumor	84	21.16
Sex Cord Stromal Tumor	15	3.77
Metastasis	4	1.01
Total	397	100

Table 2: Histological Pattern:

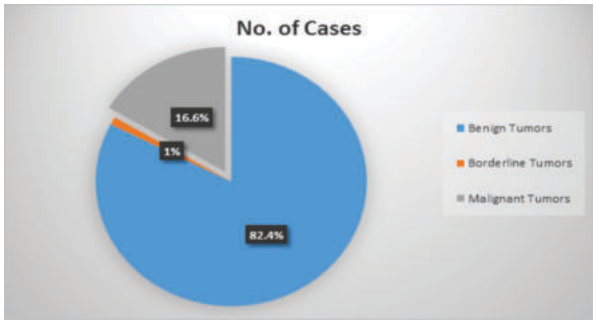
	TYPE OF OVARIAN TUMOR	FREQUENCY	PERCENTAGE
1	Surface Epithelial		
a	Serous		
	Benign serous cystadenoma	116	29.21
	Serous cystadenofibroma	22	5.54
	Borderline serous cystadenoma	1	0.25
	Serous cystadenocarcinoma	32	8.06
b	Mucinous		
	Benign Mucinous cystadenoma	90	22.67
	Borderline Mucinous cystadenoma	1	0.25
	Mucinous cystadenofibroma	1	0.25
	Mucinous cystadenocarcinoma	19	4.79
	Benign seromucinous cystadenoma	2	0.50
c	Endometriotic cyst	8	2.02
	Endometroid carcinoma	3	0.76
2	Sex Cord Stromal tumor		
	Fibroma	3	0.76
	Fibro thecoma	6	1.51
	Thecoma	1	0.25
	Granulosa cell tumor	5	1.26
3	Germ Cell Tumor		
	Mature cystic teratoma	77	19.39
	Immature teratoma	2	0.50
	Dysgerminoma	3	0.76
	Mixed germ cell tumor	2	0.50
4	Metastasis	4	1.01
	Total	397	100

Distribution of tumors:

Out of 397 cases, 327 ovarian masses were benign, 4 were borderline and 66 were malignant.

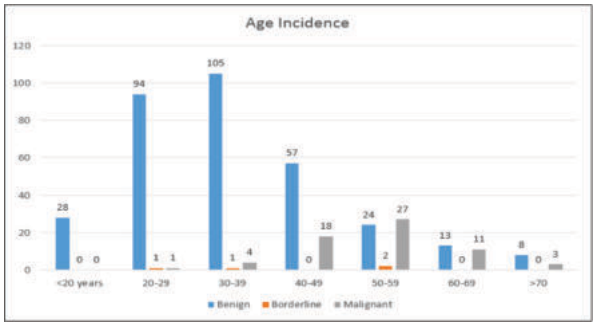
Table 3: Incidence of Ovarian Tumors

TYPE OF TUMOR	NO. OF CASES	PERCENTAGE
Benign tumors	327	82.4
Borderline tumors	4	1.0
Malignant tumors	66	16.6
Total	397	100



Demographic and clinical features:

Ovarian tumors were present in all age groups from 10 to 80 years. Over two-thirds of those diagnosed with ovarian malignancy were 50 years or older. The incidence of malignancy declined after 75 years of age.



Patients with ovarian tumors present with varied clinical features. Few patients are completely asymptomatic while others present with acute symptoms due to torsion of the ovary, the rest may have chronic symptoms. In our study, lower abdominal pain was the commonest symptom among all tumors (62%) followed by mass per abdomen (45%). Pressure symptoms like retention of urine, constipation, and dysuria were also encountered. Some patients also complained of constitutional symptoms like fever, backache, loss of weight, and appetite. Ascites was seen in 12 patients with malignancy.

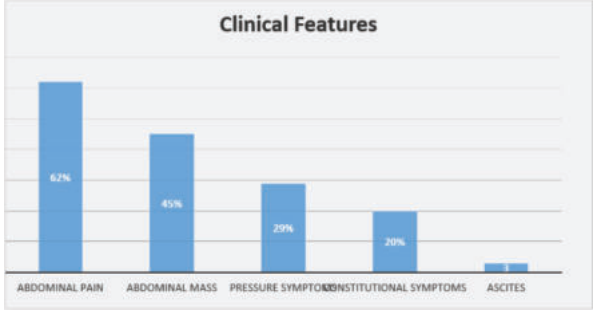


Table 4: Risk Factors

Risk Factors	Frequency	Percentage
Age > 60 years	57	14.4%
H/O Infertility	22	5.5%
H/O Endometriosis	35	8.8%
Late menopause	13	3.3%
Family History	25	6.3%
Obesity	44	11.1
H/O PCOS	55	13.9%
H/O PID	31	7.8%
Not identified	115	28.9%

Risk factors for Ovarian Malignancy included Age > 60 years in 14.4%, followed by a history of PCOS in 13.9% and Obesity in 11.1%. No risk factor was identified in 28.9%.

DISCUSSION:

A total of 397 cases of ovarian masses were studied in the Department of Obstetrics and Gynecology, GMC Srinagar for 3 years from 1st Jan 2020 till 1st Jan 2023. In the present study, out of 397, 327 (82.4%) ovarian masses were benign, 4 (1%) were borderline and 66 (16.6%)

were malignant. Similar results were observed by Swati et al[5] and Neha Garg et al[6] where benign tumors constituted 80.83% and 81.2%, borderline tumors constituted 1.67% and 1.2%, and malignant tumors constituted 17.5% and 17.6% respectively.

Our study's most common histopathological type of ovarian tumor was serous tumor, accounting for 116 (29.21%) out of 397 tumors. Amongst the malignant tumors, there were 32 (8.06%) cases of Serous Cystadenocarcinoma and 19 (4.79%) cases of Mucinous Cystadenocarcinoma which is comparable to the study done by Kanthikar et al[7] (8.57% and 4.28% respectively). In our study, 3 (0.76%) cases of Endometroid carcinoma were encountered compared to a study conducted by Kanthikar et al (1.42%). 6 (1.51%) cases of Granulosa cell tumor were found which is comparable to the study done by Kanthikar et al (1.54%). Immature teratoma is a rare entity and was found in 2 cases (0.5%). Metastatic tumors were 4 (1.01%) in comparison to the study done by Nalini et al[8] (2%).

CONCLUSION:

The burden of ovarian malignancy has increased, prompting the need for improvement in the screening and diagnosis of ovarian cancer at an early stage, especially in those with risk factors.

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