Original Research Article

A Clinico-Pathological Study of Ovarian Tumors

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ABSTRACT

Introduction: Ovarian tumors are a group of neoplasms affecting the ovary and have a diverse spectrum of features according to the particular tumor entity. They include benign, borderline and malignant subtypes. Ovarian tumors are generally difficult to detect until they are very advanced in stage or size. The aim of present study is to determine the frequency of ovarian tumors and its distribution according to cell of origin and age group.

Materials and Methods: This study was done retrospectively in the department of Obstetrics and Gynaecology at Pacific Institute of Medical Sciences, Udaipur, Rajasthan. Total 80 patients were included in the study during the period of 1 year from May 2017 to May 2018. The patients who underwent surgery for ovariotomy alone or along with hysterectomy were included in the study Data regarding age, clinical symptoms, per-operative findings and histopathology were collected and statistically studied.

Results: Total 80 cases of ovarian tumors were studied over a period from May 2017 to May 2018. Of the 80 cases, 68 were benign, 3 were borderline and 9 cases were malignant. The age ranges from 18-80 years. Maximum numbers of ovarian neoplasm were reported at reproductive age groups (31-40). Most common presenting complaint was abdominal mass (40%) followed by abdominal pain (32.5%). The commonest histological patterns observed in the study were epithelial tumors (73.75%) including both benign and malignant epithelial tumors followed by germ cell tumor (22.5%).
Serous cyst adenoma was the commonest tumor in benign category (57.5%) while mucinous cystadenocarcinoma was commonest malignant tumor (5%) in present study.

Conclusion: The major limitation of this study includes the small sample size and short study period. However, a tentative conclusion can be drawn from the present study that ovarian tumors comprise one of the major neoplasms in female detected in this institution. Differentiation of a benign tumor from a malignant one is important for determining management and prognosis; hence further similar studies are warranted.

Key Words: ovarian tumors, germ cell, borderline, teratoma, serous, mucinous.

INTRODUCTION

Ovarian tumors are a group of neoplasms affecting the ovary and have a diverse spectrum of features according to the particular tumor entity. They include benign, low-malignant potential/borderline and malignant subtypes. Ovarian tumors that present in the reproductive age group are mostly benign while about 30% in the postmenopausal age group are malignant. [1]

Generally ovarian tumors are more prevalent in the upper socioeconomic groups, and are seen predominantly after 3rd decade. [2]

Ovarian tumors are generally difficult to detect until they are very advanced in stage or size, as the symptoms

are vague and manifest over time. The principal symptoms include: fatigue, shortness of breath, increased abdominal girth, weight loss, non-productive cough, bloating, and amenorrhea for premenopausal women and menstrual irregularity. Most ovarian neoplasm cause symptoms by exerting pressure on contiguous structures, resulting in increased urinary frequency, pelvic discomfort and constipation. Abdominal swelling results from enlargement of the tumor. Most benign tumors are cystic and finding of solid elements make malignancy more likely.

Ovarian tumors are subdivided into 5 main categories according to the WHO's classification system: (1) Epithelial tumors which account for 75% of all ovarian tumors, and 90-95% of ovarian malignancies. (2) Sex cord-stromal tumors which accounts for about 5-10% of all ovarian neoplasms. (3) Germ cell tumors, which accounts for about 15-20% of all ovarian neoplasms. (4) Metastatic tumors, accounting for about 5% of ovarian malignancies and usually arise from breast, colon, endometrium, gastric cancer and cervical cancers. (5) Others, a small number of other types of neoplasms which develop from ovarian soft tissue or non-neoplastic processes.

Carcinoma of the ovary ranks third among female genital carcinomas, occurring next to cervix and endometrium in frequency. [3] The ovarian cancer accounts for 3% of all malignancies and 6% of deaths from cancer in women, and almost one third of invasive malignancies of the female genital organs. [1] The aim of this study is to determine the frequency of ovarian tumors and its distribution according to cell of origin and age group.

MATERIALS AND METHODS

This study was done retrospectively in the department of Obstetrics and Gynaecology at Pacific Institute of Medical Sciences, Udaipur, Rajasthan. Total 80 patients were included in the study during the period of 1 year from May 2017 to May 2018. The patients who underwent surgery for ovariotomy alone or along with hysterectomy were included in the study. Ovarian tumors managed conservatively were excluded from the study. Data regarding age, clinical symptoms, details of the mass like size, laterality, per-operative findings and histopathology were collected and statistically studied. Histopathological examination of the specimens was conducted by the department of Pathology of the hospital following appropriate staining (haematoxylin and eosin staining). The histopathological reports (HPR) were based on WHO classification of ovarian tumors.

RESULTS

Total 80 cases of ovarian tumors were studied over a period from May 2017 to May 2018. Of the 80 cases, 68 were benign, 3 were borderline and 9 cases were malignant. (Table-1) The age ranges from 18-80 years. Maximum number of ovarian neoplasm were reported at reproductive age groups (31-40), 25 cases followed by 41-50 years, 23 cases and the least common age groups are 10-20 and 71-80 with only1 and 2 cases respectively. (Table-2) Most common presenting complaint was abdominal mass (40%) followed by abdominal pain (32.5%). (Table-3)

Table.1 Frequency of benign and malignant ovarian tumor

S.No.	Type of neoplasm	No.of cases (%)
1	Benign	68 (85%)
2	Borderline	3 (3.75%)
3	Malignant	9 (11.25%)

Table.2 Age wise distribution of ovarian tumor

S.No.	Age ranges (years)	No.(%)
1	10-20	1 (1.25%)
2	21-30	16 (20%)
3	31-40	25 (31.25%)
4	41-50	23 (28.75%)
5	51-60	9 (11.25%)
6	61-70	4 (5%)
7	71-80	2 (2.5%)

Table.3 Clinical features of ovarian tumor

S.No.	Clinical Features	No. (%)
1	Abdominal mass	32 (40%)
2	Abdominal Pain	26 (32.5%)
3	Menstrual disturbances	14 (17.5%)
4	GIT disturbances	4 (5%)
5	Urinary disturbances	2 (2.5%)
6	Low back ache	2 (2.5%)

Of 80 tumors, 65 were cystic, 12 were mixed and 3 were solid. The commonest histological patterns observed in the study were epithelial tumors (73.75%) including both benign and malignant epithelial tumors followed by germ cell tumor (22.5%).

Serous cyst adenoma was the commonest tumor in benign category (57.5%) while mucinous cystadenocarcinoma was commonest malignant tumor (5%) in present study. (Table. 4)

Table.4 Distribution of cases according to the classification

S.No.	Type of Neoplasms	No.	%
1.	Surface epithelium tumors	59	73.75%
	Benign		
	Serous cystadenoma	46	57.5
	Papillary serous cystadenoma	1	1.25
	Mucinous cystadenoma	5	6.25
	Borderline		
	Mucinous borderline	1	1.25
	Malignant		
	Mucinous cystadenocarcinoma	4	5.0
	Serous cystadenocarcinoma	1	1.25
	Endometrioid carcinoma	1	1.25
2.	Germ cell tumors	18	22.5%
	Benign cystic teratoma	14	17.5
	Immature teratoma	1	1.25
	Dysgerminoma	2	2.5
	Yolk sac tumor	1	1.25
3.	Sex cord stromal tumors	2	2.5%
	Granulosa cell tumor	1	1.25
	Sertoli Leydig cell	1	1.25
4.	Metastatic tumors	1	1.25%
5.	Others	0	0

DISCUSSION

According to present study 85% were benign, 3.75% borderline and 11.25% malignant. Gupta *et al*. reported 72.9% benign, 4.1% borderline and 22.9% malignant tumors. [4] The major fraction of ovarian neoplasm in the study done by Mondal SK et al (2011) comprises benign tumors (63.1%), followed by malignant (29.6%) and borderline tumors (7.3%). [5] In another study, 80.3% of the true ovarian neoplasms were benign while malignant ovarian tumors constituted 19.7%. [6]

The tumors were seen the age group from 18-80 years with maximum number of cases in 31-40 years, 31.25%%, followed by 41-50 years, 28.75%. Similar observations were made by R Jha et al. [7]

According to the present study the most common symptom with which the patients presented was abdominal mass followed by abdominal pain. This is in concordance with the study of Couto et al [8] and Maheshwari et al. [9] In contrast to another retrospective analysis by Jamal et al [10] the commonest mode of presentation was bleeding per vaginum, followed by pain abdomen, pelvic mass and gastric intestinal symptoms. The exact nature of all ovarian tumor cannot be confirmed preoperatively just by clinical examination.

Histologically, surface epithelial tumors are the commonest which is consistent with Mondal SK et al. [5] Germ cell tumor was the second major group of tumors in the present study (22.5%) which comprised of benign cystic teratoma (17.5%), dysgerminoma (2.5%), Yolk sac tumor (1.25%) and immature teratoma (1.25%). Germ cell tumor was the second major group of tumors in the study (23.1%) Mondal SK et al. [5]

In present study, the most common benign tumor was serous cyst adenoma 46 cases (57.5%) followed by benign cystic teratoma (17.5%). Mucinous cystadenocarcinoma was most common malignant tumor in present study (5%).The other authors like Maheshwari et al, [9] Pilli et al [11] and Prabhakar et al [12] showed an incidence of 0.25 %, 4%, and 5% respectively.

There was 1 case of Endometrioid carcinoma (1.25%), similar incidence was seen in studies by Prabhakar et al [12] (1.1%). Studies by Maheshwari et al [9] and Dawar [13] showed higher incidence (3.65% and 5.7% respectively). There was one case of granulosa cell tumour accounting 1.67% of total neoplastic lesions. Incidence was slightly less compared to the study done by Ramachandra et al [14] with granulosa cell tumour accounting for 2.7%.

There was 1 case of metastasis to ovary (1.25%) with primary in colon.

CONCLUSION

Benign ovarian tumors are more common than borderline or malignant. Surface epithelial tumors are the commonest followed by germ cell tumors. The major limitation of this study includes the small sample size and short study period. However, a tentative conclusion can be drawn from the present study that ovarian tumors comprise one of the major neoplasms in female detected in this institution. Amongst malignant ovarian tumors late reporting is common and patients usually present in advanced stages of the disease. Differentiation of a benign tumor from a malignant one is important for determining management and prognosis; hence further similar studies are warranted.

Conflict of interest:

No conflicts of interest exist for these authors. No relevant financial relationship exists between the authors and procedures or products used in this manuscript.

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