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OVARIAN TUMORS;

CLINICO-PATHOLOGICAL PROFILES OF OVARIAN TUMORS IN A TERTIARY CARE HOSPITAL IN KARACHI

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ABSTRACT… Introduction: Ovarian cancers are the most common and fatal malignancies in females. In Pakistan the incidence of ovarian cancer is increasing. The evidence regarding the extent of problem is scarce in local population. **Objective:** To study clinico-pathological characteristics of ovarian tumors in females presenting in a tertiary care setup. **Study Design:** Cross sectional survey. **Setting:** Department of Pathology, Liaquat National Hospital, Karachi. **Methods:** There were total n=29 patients diagnosed with ovarian tumors. Women with primary ovarian tumors were identified and clinical, radiological and pathological records were assessed. Frequency of different types of pathologies were identified among these women. **Results:** Mean age was 48.55±13.20years. There were n= 10 benign, n=6 borderline and n=13 malignant cases. Most common presenting complaint was abdominal pain and abdominal distension. Papillary Serous Carcinoma were most common benign (n=8) and malignant tumors (n=6). At the time of presentation, malignant lesions already had attained a size of 15.5 cm with ascites n=7, mets to bowel in n=7 cases. Mortality was 30% in patients with malignancy while rests of the patients were lost to follow-up. **Conclusion:** Ovarian cancers are well known for being most lethal of gynecological malignancies. At the time of presentation these tumors already attain a significant size and metastasis. Further studies are warranted in this aspect.

Key words: Ovarian cancer, clinico-pathological features, ovarian tumor, malignant, benign, histopathology.

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INTRODUCTION

Ovarian cancer is very important malignant tumour in females and its incidence is increasing day by day and has high mortality rate. Though majority presents in later or final stages but still there is a judicious response to currently available chemotherapy and their use in multimodality setting.[1] The prevalence of ovarian tumour was 5.4% with a rate of malignancy 5.4%.[2]

Ovarian carcinoma is most common cause of mortality in females with gynecological cancer.[3] In Pakistan, the incidence of ovarian cancer is increasing alarmingly around 13.6% of all females with malignancies. Among them, >70% are diagnosed at later stages, making it highly difficult for the healthcare providers to manage this lethal ailment. The cancer comes second to breast carcinoma which is the most common cancer in Pakistani females.[4]

Usually, patients present with progressive stage and is usually undergo surgical resection and then chemotherapy may be applied. Recently, chemotherapeutic advances have prompted to improved survival, and a superior comprehension of hereditary hazard elements has allowed a customized way to deal with preventive techniques, as respective salpingo-oophorectomy specifically females.[5, 6]

The clinico-pathological characteristics of ovarian lesions in Pakistani population is scarce and very few work has been done in this regard. So this study was aimed to find the pattern of ovarian tumors in females belong to Karachi and presenting the most populated hospital (Liaquat national hospital) with ovarian carcinoma.

Objective

To study clinico-pathological characteristics of ovarian tumors in females presenting in a tertiary care setup.

MATERIAL AND METHODS

This cross sectional survey was conducted at Department of Pathology, Liaquat National Hospital, Karachi from 2013 to 2014. Medical records of 29 females who had history of ovarian tumors were assessed. Their demographic details were recorded including name, age, comorbidities, clinical presentation and type of surgery performed. Application of CA125 was assessed. Type of lesion was identified i.e. benign, borderline or malignant and specific type of lesion was detected. Involvement of nearby organs was also noted. Data was entered and analyzed through SPSS 21. Frequency of different types of pathologies were identified among these women.

RESULTS

The mean age of females was 48.55±13.20 years. There were 7 (24.1%) females who had age ranged 20-40 years, 8 (27.6%) were 41-50 years old while 14 (48.3%) were >50years old. Only one female had positive family history of ovarian cancer while 2 females had history of chalia / pan chewing history. One patient had hepatitis C. Diabetes was present in 9 (31%) females, 11 (37.9%) were hypertensive. Three (10.3%) females were nulliparous, 13 (44.8%) had parity 1-4 while 13 (44.8%) had parity >5. History of one abortion was found in 7 (24.1%) females while 7 (24.1%) had 2 abortions but remaining 15 (51.7%) patients did not have history of abortion (Table I).

In this study, 21 (72.4%) females had menopause and the mean duration of menopause was 16.0±19.80 years (Table II). Most of the females presented with abdominal pain (20 [69%]), followed by abdominal distension (12 [41.4%]), irregular cycle in 5 (17.2%) females, PV bleeding in 1 (3.4%) female was reported while 7 (24.1%) females had difficulty in urinating, however, 3 (10.3%) females had history of sudden weight loss (table III).

Specimens were received in cases who were primarily undergone for different surgeries. Mostly debulking was done (18[62.1%]), cystectomy was done in 5 (17.2%) cases and hysterectomy was done in 4 (13.58%) cases (table IV). Along with biopsy for ovarian tumor, lymph node dissection (15 [51.7%]), omentectomy (14 [48.3%]). Bowel adhesions was observed in 17 (58.6%) cases and bowel involvement was observed in 10 (34.5%) cases, ascites in 9 (31%), colostomy was done in 6 (20.7%) cases, liver was involved in 3 (10.7%) cases while pleural effusion was involved in 2 (6.9%) cases (table V).

Age (Years)	48.55±13.20	
20-40 years	7	24.1%
41-50years	8	27.6%
51-70years	14	48.3%
Positive family history	1	3.4%
Chalia addiction None	2 27	6.9% 93.1%
Hepatitis B or C	1	3.4%
DM	9	31.0%
HTN	11	37.9%
Nulliparous Multiparity Grand multiparity	3 13 13	10.3% 44.8% 44.8%
Abortions Negative Positive	 15 14	 51.7% 48.3%

Table-I. Baseline characteristics of patients (n=29)

	Frequency
Menopause	21 (72.4%)
Mean duration of menopause	16.0±19.80

Table-II. Menstrual history

Symptoms	Frequency	Percent
Abdominal Pain	20	69.0%
Abdominal distension	12	41.4%
Irregular cycles	5	17.2%
Bleeding PV	1	3.4%
Difficulty Urinating	7	24.1%
Weight loss	3	10.3%

Table-III. Clinical presentation of patients

Symptoms	Frequency	Percent
Abdominal Pain	20	69.0%
Abdominal distension	12	41.4%
Irregular cycles	5	17.2%
Bleeding PV	1	3.4%
Difficulty Urinating	7	24.1%
Weight loss	3	10.3%

Table-III. Clinical presentation of patients

Primary Surgery	Frequency	Percentage
Lymph Node Dissection	15	51.7%
Omentectomy	14	48.3%
Bowel adhesion	17	58.6%
Bowel involvement Small Large Both	10 2 3 5	34.5% 6.9% 10.3% 17.2%
Ascites	9	31.0%
Colostomy	6	20.7%
Liver	3	10.7%
Pleural effusion	2	6.9%

Table-V. Involvement of other organs

The mean cell count expressed by CA125 s was 569.30±1771.52. There were 10 (34.5%) benign cases, 6 (20.7%) were borderline while 13 (44.8%) were malignant. The mean tumor size was 14.28±7.29cm. Eleven cases had right side ovary affected while 16 had left side ovary but there were 2 cases who had bilateral ovaries involved (table VI).

CA125 (n=26)	569.30±1771.52 units/mL	
Benign	10	34.5%
Borderline	6	20.7%
Malignant	13	44.8%
Size of lesion	14.28±7.29cm	
Site Right Left Bilateral	 11 16 2	 37.9% 55.2% 6.9%

Table-VI. Histopathological characteristics of lesion

In all tumors, most common type of lesion was Papillary serous (8[27.6%]), followed by Malignant papillary serous (6[20.7%]), mucinous in 4 (13.8%), teratoma in 2 (6.9%), malignant mucinous in 2 (6.9%), clear cell carcinoma in 1(3.4%), sex cord in 1(3.4%), granulosa in 1(3.4%), transitional cell carcinoma in 1(3.4%), endometroid in 1(3.4%), malignant teratome in in 1(3.4%), while malignant sex cord in 1(3.4%) case (table VII).

Table VIII contains histopathological characteristic of ovarian cancer tumor. Fig 1 showed that 6 (20.7%) patients could not survive due to ovarian cancer while 23 (79.3%) were alive.

Type of lesion	Frequency	Percentage
Benign Papillary serous	8	27.6%
Malignant papillary serous	6	20.7%
Benign Mucinous	4	13.8%
Benign Teratoma	2	6.9%
Malignant mucinous	2	6.9%
Clear cell carcinoma	1	3.4%
Benign Sex cord	1	3.4%
Granulosa	1	3.4%
Transitional cell carcinoma	1	3.4%
Endometrioid	1	3.4%
Malignant teratoma	1	3.4%
Malignant sex cord	1	3.4%
Total	29	100.0%

Table-VII. Type of ovarian tumor

	Frequency	Percent
Capsule Intact Ruptured Involved	 23 5 1	 79.3% 17.2% 3.4%
Contrast ovary Normal Tumor present Ovary not present	 15 6 8	 51.7% 20.7% 27.6%
Uterus Involved Uterus not involved	2 27	6.9% 89.7%
Uterine polyps	6	20.7%
Cervix	1	3.4%
Omentum	8	27.6%
Lymph node involvement	2	6.9%
Fallopian tubes None Left Bilateral	 27 1 1	 93.1% 3.4% 3.4%

Tale-VIII. Histopathological findings of ovarian tumor

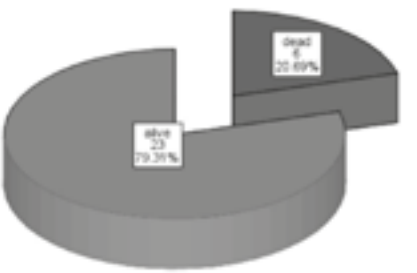

Fig-1. Survival of ovarian cancer patients

DISCUSSION

The development of ovarian cancer is unknown due to lack of a tumor evolution model.[7] Knowledge of embryology and microscopic anatomy of ovary is important to understand the various cancer types that develop inside ovary.[8]

In our study, we included reports of 29 females with ovarian malignancy. The mean age of females was 48.55±13.20 years. More than 75% females fall in age >40years which is age of menopause and postmenopausal and 21 (72.4%) females had menopause and the mean duration of menopause was 16.0±19.80 years. Among risk factors, there is only 1 female who had positive family history of ovarian cancer while 2 females had history of chalia / pan chewing history. Most of the females presented with abdominal pain (69%), followed by abdominal distension (41.4%), irregular cycle in 5 (17.2%) females, while PV bleeding was reported by 1 (3.4%) female.

In our study, mostly the specimen was obtained through debulking (62.1%), 17.2% specimen were obtained through cystectomy and hysterectomy specimen were obtained in 13.58% cases. The mean cell count expressed by CA125 was 569.30±1771.52. But it is stated in previous experience that Tumor markers are non-specific and CA-125 is not the marker for the ovarian carcinoma only and it may be raised in other conditions as well.[4]

The histology of ovarian tumors displays a wide assortment of histological elements. Epithelial ovarian tumors, which are the larger part of dangerous ovarian tumors, are further gathered into histological sorts as takes after: serous, mucinous, endometrioid, clear cell, transitional cell tumors, carcinosarcoma, blended epithelial tumor, undifferentiated carcinoma, and others.[9]

In our study, there were 10 (34.5%) benign cases, 6 (20.7%) were borderline while 13 (44.8%) were malignant. The mean tumor size was 14.28±7.29cm. Ovarian malignancies are categorized in distinct morphologic groups depend on form of epithelium into tumors of serous, mucinous, endometrioid, clear cell, transitional, squamous, mixed and undifferentiated type.[10]

In our study, most common type of lesion was benign papillary serous (8[27.6%]), followed by malignant papillary serous (6[20.7%]). Chen et al., reported that serous tumors are epithelial-stromal tumors framed by cells that look like those of the inside coating of the fallopian tube. Most threatening serous tumors are at any rate halfway cystic. Harmful serous tumors make up 33% of all ovarian serous tumors and around half of all threatening ovarian neoplasms.[8]

In our study, benign mucinous in 4 (13.8%) and malignant mucinous in 2 (6.9%). It has been reported that benign mucinous tumors represent up to one-fourth of all benevolent ovarian neoplasms and 75–85% of all mucinous ovarian tumors. Marginal mucinous tumors most habitually happen between the fourth and 6th many years of life. Dangerous mucinous tumors speak to 5–10% of all threatening ovarian neoplasms.[11-13]

In our study, benign teratoma in 2 (6.9%) while malignant teratoma in 1(3.4%). In one study, these tumor represent ≥ 10% of ovarian cancer.[14]

In our study, clear cell carcinoma in 1(3.4%) while transitional cell carcinoma in 1(3.4%), benign sex cord in 1(3.4%) while malignant sex cord in 1(3.4%) case. The reviewing of sex string stromal tumors has been baffling. For some subtypes, complete histologic criteria for making the qualification amongst considerate and threatening tumors are inadequate.[15]

In our study, granulosa in 1(3.4%). Granulosa cell tumors are uncommon sex string ovarian tumors that are shaped by cells accepted to be gotten from those that encompass the germinal cells in the ovarian follicles. These signs incorporate endometrial hyperplasia and endometrial tumor, which are available in 5–25% of cases.[8]

In our study, endometrioid in 1(3.4%). Benevolent endometrioid tumors happen rarely and are

prevalently cystic. They speak to one-fifth of all endometrioid ovarian neoplasms. Dangerous endometrioid ovarian tumors might be cystic or prevalently strong. These tumors, which make up the second most regular dangerous ovarian surface epithelial-stromal tumor sort, represent around 80% of all ovarian endometrioid tumors and 10–25% of every single ovarian carcinoma.[11-13]

Mostafa et al., reported in their study that only 13.7% of the patients had positive family history. Malignant tumors constituted 75% of the cases, border line tumors 12.9%, granulosa cell tumor 6%, and germ cell tumors 4.3%, serous cystadenocarcinoma was seen in 58%.[3]

CONCLUSION

Ovarian cancers are well known for being most lethal of gynecological malignancies in a tertiary care hospital of Karachi. At the time of presentation these tumors already attain a significant size and metastasis. This was a retrospective study on very small sample size. Further studies are warranted in this aspect on large sample size to get more reliable evidence which can be applicable in future.

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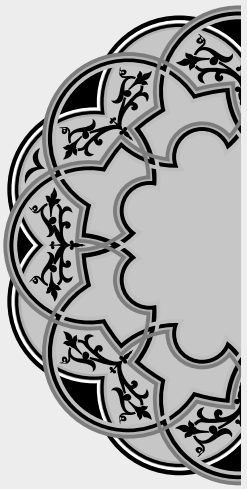

"We don't grow when things are easy, we grow when we face challenges."

Unknown

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
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2	Dr. Abdul Qadir	Compiling of results	
3	Affan Zia Bajwa	Guideline in writing	
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