IJPRP

Indian Journal of Pathology: Research and Practice

Volume 7 Number 3, March 2018
DOI: http://dx.doi.org/10.21088/ijprp.2278.148X.7318.11

Original Research Article

Clinico Histopathological Study of Ovarian Tumors in a Tertiary Care Hospital: A Two Year Retrospective Study

Muram Reddy PenchalaReddy[a], Muram Reddy VijayaLakshmi[b], Vissa Shanthi[c], Nandam Mohan Rao[d], Byna Syam Sundara Rao[e], Grandhi Bhavana[f]

[a,b]Assistant Professor [c,d]Professor [e,f]Associate Professor, Pathology, Narayana Medical College, Nellore, Andhra Pradesh 524003, India.

Corresponding Author:

M. Penchala Reddy,
Assistant Professor,
Department of Pathology,
Narayana Medical College,
Nellore, Andhra Pradesh 524003,
India.
E-mail:
dr.penchalareddy15@gmail.com

(Received on 25.02.2018,
Accepted on 06.03.2018)

Abstract

Background: Ovarian tumors are the common forms of neoplasms in women. Ovarian cancers has the worst prognosis, because they are asymptomatic in early stages and are often detected at later stages.

Aim: To determine the incidence, age wise distribution of ovarian neoplasms and also to classify the ovarian neoplasms based on the histomorphological pattern.

Materials and Methods: This study was done in the Department of Pathology, Narayana medical college and Hospital, Nellore, AndhraPradesh, India for a period of two years from January 2016 to December 2017.Total 110 cases of ovarian neoplasms were studied.

Results: Out of total 110 cases, 90 cases (81.81%) were benign, 16 cases (14.54%) were malignant and 4 cases (3.63%) were borderline. Ovarian tumors were more common in 31-40 years age group. The most common presenting symptom was abdominal pain (46.5%). Surface epithelial tumors were the commonest, accounting for 80 cases (72.72%). Most of the ovarian tumors were cystic (75.45%). About 94.3% of tumors were unilateral.

Conclusion: In our study, most common ovarian tumors are surface epithelial tumors. Benign tumors are common in the young age, whereas malignant tumours are common in the post menopausal age group. As most of the tumors are diagnosed in late stages, early diagnosis of ovarian tumors is necessary, so as to decrease the morbidity and mortality.

Keywords: Benign; Classification; Ovarian Tumor; Prognosis; Surface Epithelial Tumors.

Introduction

Ovarian tumors are the common forms of neoplasms in women[1]. In gynaecological malignancies, ovarian cancers has the worst prognosis [2] and is responsible for mortality and in countries like Europe, united states and eastern India, it is the fourth leading cause of death [3].

Ovarian tumors are often detected at later stages and by the time they are diagnosed they are larger in size [4], because most often the ovarian tumors are asymptomatic in early stages [5]. Serum HCG, CA 125, Alphafetoprotein and placental alkaline phosphate are the useful tumor markers to diagnose ovarian tumors[1].

Nulliparity, family history of ovarian and breast cancers [1], hormone replacement therapy, tobacco consumption and mutation in BRCA1 and BRCA2 genes are the risk factors for ovarian tumors. Whereas the protective factors are multiparity and use of oral contraceptive pills[6,7]. As the diagnosis and prognosis of ovarian tumors depend

on its histological type, classification of ovarian tumors is very important [2].

Our study was done to determine the incidence, age wise distribution of ovarian neoplasms, symptomatology and also to classify the ovarian neoplasms based on the histomorphological pattern and also to assess its benign and malignant nature.

Materials and Methods

This study was done in the Department of Pathology, Narayana Medical College and Hospital, Nellore, AndhraPradesh, India. It was a retrospective study done for a period of 2 years from January 2016 to December 2017. Total 110 cases of ovarian neoplasms were studied.

Non neoplastic lesions of ovary were excluded from our study. The Specimens were received from the Department of Gynaecology. All the details like age, clinical history and symptomatology were recorded.

The specimens were first fixed in 10% formalin followed by grossing. During grossing all the features of the neoplasms were noted. Later followed by processing and embedding. Paraffin embedded blocks were cut into 4 microns thin sections and were stained with haematoxylin and eosin. Special stains were done whenever necessary.

Histopathology reporting was done by two pathologists, separately to reduce observer bias. All the neoplasms were classified using WHO guidelines.

Results

Out of total 110 cases, 90 cases (81.81%) were benign, 16 cases (14.54%) were malignant and 4 cases (3.63%) were borderline. The incidence of ovarian tumors was studied as shown in Table 1.

Ovarian tumors were more common in 31-40 years age group accounting for 45 cases (40.90%). The youngest age of the patient was 15 years, oldest age of the patient was 65 years. The age distribution of ovarian tumors was shown in Table 2.

The most common presenting symptom was abdominal pain (46.5%) followed by abdominal lump (29.5%), menstrual irregularities (11.4%), infertility (5.6%), postmenopausal bleeding(5%), ascites(4%) and weight loss(3%). About 5% of cases were diagnosed incidentally during gross and microscopic examination of hysterectomy and salpingoophorectomy specimens.

Among all the ovarian tumours, surface epithelial tumors were the commonest accounting for 80 cases (72.72%), followed by germ cell tumors 20 cases (18.18%), sex cord stromal tumors 9 cases (8.18%)and metastatic tumor 1 case (0.9%).

The distribution of ovarian tumors according to the WHO classification was studied as shown in Table 3. Most of the ovarian tumors were cystic 83 cases (75.45%), solid 22 cases (20%), both solid and cystic consistency 5 cases (4.54%). The size of the ovarian tumors, ranged from 3 cms to 28 cms. About 94.3% of tumors were unilateral, showing right sided predominance and 5.7% of tumors were bilateral.

Table 1: Incidence of ovarian tumors

Age group	Benign	Borderline	Malignant	Total
11-20	3	-	1	4
21-30	17	1	1	19
31-40	41	2	2	45
41-50	17	1	4	22
51-60	10	-	5	15
61-70	2	-	3	5
Total	90	4	16	110

Table 2: Age distribution of ovarian tumors

Age group	No. of Cases	Percentage
11-20	4	3.63%
21-30	19	17.27%
31-40	45	40.90%
41-50	22	20%
51-60	15	13.63%
61-70	5	4.54%
Total	110	

Table 3: Distribution of ovarian tumors according to WHO classification

Histological type		Cases	Percentage
Surface epithelial tumors			
Serous	Benign	40	36.36%
	Borderline	2	2.2%
	Malignant	8	7.27%
Mucinous	Benign	12	10.90%
	Borderline	3	2.72%
	Malignant	3	2.72%
Endometroid	Malignant	2	1.81%
Transitional	Benign	2	1.81%
Clear cell	Malignant	1	0.9%
Germ cell tumors			
Teratoma	Mature	18	16.36%
	Immature	1	0.9%
	Monodermal	1	0.9%
Dysgerminoma		2	1.81%
Yolksac tumor		1	0.9%
Sexcord stromal tumors			
Granulosa cell tumor		4	3.63%
Fibroma		5	4.54%
Fibrothecoma		1	0.9%
Thecoma		1	0.9%
Sertoli leydig cell tumor		2	1.81%
Metastasis		1	0.9%

Table 4: Comparision of Histopathological types of ovarian tumors in different studies

Histopathological type	Ahmad et al [9]	Tejaswini [10]	Jha et al [11]	Present study
Surface epithelial tumors	63.50%	85.25%	52.2%	72.72%
Germ cell tumors	27.13%	9.72%	42.2%	18.18%
Sexcord stromal tumors	5.84%	3.95%	3.1%	8.18%

Discussion

Ovaries are the paired intrapelvic organs of the female reproductive tract [1]. Ovarian neoplasms are usually not diagnosed till advanced stage because of their anatomical location [2] and they are asymptomatic in majority of cases [7]. Ovarian tumors are complex in view of its histogenesis, clinical behaviour and malignant potential. It is the sixth most common tumor in females [8].

Benign ovarian tumors may occur in any age group but most common in the age group between 20 to 45 years, where as malignant tumors are more common in old age group between 45-65 years [8].

In our study, most of the tumors were benign (81.81%) of cases, whereas malignant accounts for 14.54% of cases and borderline 3.63% of cases. In a study done by Vinithawillis et al [5], benign tumors were the commonest (91.1%),followed by malignant (7.1%)and borderline (1.8%). Nirali et al [1] study also showed benign tumors as the commonest (84.5%), followed by malignant (13.2%) and borderline (2.3%). Our study was consistent with these two studies where benign tumors are the commonest.

In our study, most of the ovarian tumors were common in the age group between 31-40 years (40.90%). In a study done by Prakash et al [4], ovarian tumors were common in the age group between 20-39 years (53.4%) and Sheikh s et al [8] study showed maximum number of cases in 21-30 years (43.5%). Our study, Prakash et al[4] and Sheikh s et al[8] studies were similar showing maximum number of cases in child bearing age group.

Benign tumors were more common in the age group between 31-40 years. Out of total 90 benign cases, 41 cases were in this age group. Malignant tumors were more common in the age group between 51-60 years. Out of 16 malignant cases, maximum number of 5 cases were in this age group.

The WHO classification of ovarian tumors is based on their tissue of origin either surface epithelium or germ cells or stroma of ovary. So, they are classified as surface epithelial tumors, germ cell tumors and sex cord stromal tumors of ovary [8].

Surface epithelial tumors were the commonest in our study accounting for 72.72% followed by germ cell tumors (18.18%), Sex cord stromal tumors (8.18%) and metastatic tumor (0.9%). Table 4 showing comparision of histopathological types of ovarian tumors in different studies. In all these studies, surface epithelial tumors were the commonest type.

In our study, serous tumors were the commonest with maximum no of cases diagnosed as serous cystadenoma of ovary (36.36%) followed by mature cytic teratoma (16.36%) and mucinous cystadenoma of ovary (10.90%). In a study done by Vinitha willis et al [5] serous cystadenoma of ovary was the commonest (46.4%) followed by benign cystic teratoma (21.4%) and mucinous cystadenoma of ovary (17.8%).

However, Sheikh S et al study [8] constituted benign cystic teratoma as the commonest (30.6%), followed by serous cystadenoma (26.9%) and mucinous cystadenoma (15%). Our study was closer to the study done by Vinitha willis et al [5] in which serous cystadenoma was the most commonest type. Serous cystadenocarcinoma was the commonest malignant tumor in our study constituting for about 7.27% of cases, which was similar to the study done by Sheikh s et al [8], in their study serous cystadenocarcinoma was diagnosed in 7.8% of cases.

In Germ cell tumors, benign mature cystic teratoma was the commonest. The youngest patient of age 15 years in our study was diagnosed with mature cystic teratoma. The results of our study were comparable to the study done by Nirali Thakkar et al [1]. However, Immature teratoma and Monodermal teratoma was accounting for 0.9% of cases each in our study. Dysgerminoma (1.8%) and yolksac tumor (0.9%) were the other malignant germ cell tumors diagnosed in our study.

In sexcord stromal tumors, fibroma (4.54%) was the commonest tumor. The oldest patient in our study was diagnosed with fibroma. The other sexcord stromal tumors diagnosed in our series are Granulosa cell tumor (3.63%), sertoli leydig cell tumor (1.81%), fibrothecoma (0.9%) and thecoma (0.9%). In the studies done by Vinithawillis et al [5] and Nirali Thakkar et al [1], fibroma was the most commonest sexcord stromal tumor, similar to that of our study. One case of metastatic tumor to the ovary (0.9%) was diagnosed in our study with primary from colonic cancer.

In our study, abdominal pain was the commonest symptom (46.5%) seen in about half of the cases followed by abdominal lump (29.5%). Our results were similar to the studies of Agarwal et al [7] and Wasim et al [12]. Menstrual irregularities and post menopausal bleeding were noted in few cases. Some of the ovarian tumors were diagnosed incidentally while doing infertility checkup (5.6%) of cases. Ascites and weight loss were seen in malignant ovarian tumors.

Most of the ovarian tumors in our study were cystic (75.45%), followed by solid (20%) and combined solid and cystic consistency 4.54%, which was similar to the study done by kancherla et al [3] with predominant cystic consistency (78%), followed by solid (16%), both solid and cystic consistency (6%).

The size of the ovarian tumors ranged from 3cm to 28cms. The largest ovarian tumor was mucinous cystadenoma of ovary. Smallest ovarian tumor was fibroma of ovary in our study.

In our study, most of the ovarian tumors were unilateral (94.3%) most commonly right side ovary was involved. Bilateral involvement was seen in 5.7% of cases . Bilateral involvement was seen in serous cystadenoma and metastatic tumor of ovary. In a study done by Kancherla et al [3], unilateral involvement was seen in 76% and bilateral involvement was seen in 24% of cases. The incidence of bilateral involvement in this study was high when compared to that of our study.

Conclusion

In our study, most common ovarian tumors are surface epithelial tumors. Benign tumors are common in the young age group, where an malignant tumors are common in the post menopausal age group. Differentation of ovarian tumors into benign and malignant is important for prognosis and treatment. As most of the cases are diagnosed in late stage, early diagnosis of ovarian tumors is necessary, so as to decrease the morbidity and morality. Hence, effective screening should be done in those people who have the risk factors for malignancy.

References

1. Nirali N. Thakkar, Shaila N. Shah. Histopathological study of ovarian tumors. International journal of science and research. 2015 oct;4(10):1745-1749.
2. Arpita J. Nishal, Kinnari S.Naik, Jigna Modi. Analysis of spectrum of ovarian tumors: a study of 55 cases. Int J Res Med Sci. 2015 oct;3(10):2714-2717.
3. Jyothi Kancherla, Raghu kalahasthi, KPA Chandra sekhar, Srikanth babu yarlagadda, S parimala Devi. Histomorphological study of ovarian tumors: An institutional experience of 2 years. International jounal of scientific study. 2017;5(3):232-235.
4. Akina Prakash, Sravan chinthakindi, Ramanan Duraiswami, Indira.V. Histopathological study of ovarian lesions in a tertiary care center in Hyderabad,India:a retrospective five year study. Int J Adv Med. 2017 June;4(3):745-749.
5. Vinitha willis, Rachel Mathew. A study on clinico histopathological patterns of ovarian tumors.Int J Reprod contracept obstet Gynaecol. 2016 Aug;5(8):2666-2671.
6. Modan B, Hartage P, Hirsh-Yechezkel G,Chetrit A, Lubin F, Bellen U et al. Parity, oral contraceptives and the risk of ovarian cancer among carriers and non carriers of a BRCA1, or BRCA2 mutation. N Engl J Med. 2001;345:235-240.
7. Purti Agarwal, Deepak Gangadhar Kulkarni, Preeti Rihal Chakrabarti, Sapna Chourasia, Monal Dixit, Kapil Gupta. Clinico pathological spectrum of ovarian tumors: A 5 year

experience in a teritary health care center.Journal of basic and clinical reproductive sciences. 2015;4(2):90-96.

8. Sheema Sheikh, Humaira Bashir, Summiya Farooq, Arshi Beigh, Farzana manzoor, Ruby Reshi. Histopathological spectrum of ovarian tumors from a referral hospital in Kashmir valley,Jammu and Kashmir,India.Int J Res Med Sci. 2017 May;5(5):2110-2114.
9. Ahmad Z, kalyani N, Hasan SH, Muzaffar S, Gill MS. Histological pattern of ovarian neoplasm. J Pak Med Assoc. 2000;50:416-9.
10. Tejaswini V.S tudy of morphological patterns of ovarian neoplasms. J Dent Med Sci. 2013;10:11-6.
11. Jha R, karki S. Histological pattern of ovarian tumors and their age distribution. Nepal Med Coll J. 2008;10:81-5.
12. Wasim T, Majrroh A, Siddiq S. Comparision of clinical presentation of Benign and malignant ovarian tumors.J pak med Assoc. 2009;59:18-21.