International Journal of Clinical and Diagnostic Pathology

ISSN (P): 2617-7226
ISSN (E): 2617-7234
www.patholjournal.com
2020; 3(3): 163-167
Received: 16-05-2020
Accepted: 22-06-2020

Dr. Ramya Gandhi
Associate Professor, Department of Pathology, Sri Manakula Vinayagar Medical College and Hospital, Kalitheerthalkuppam, Madagadipet, Puducherry, India

Dr. Sriram V
Associate Professor, Department of Pathology Sri Manakula Vinayagar Medical College and Hospital, Kalitheerthalkuppam, Madagadipet Puducherry, India

Dr. Jayanthi C
Associate Professor, Department of Pathology Sri Manakula Vinayagar Medical College and Hospital. Kalitheerthalkuppam, Madagadipet Puducherry, India

Dr. Erli Amel Ivan
Professor & Head Department of Pathology Sri Manakula Vinayagar Medical College and Hospital Kalitheerthalkuppam, Madagadipet Puducherry, India

Corresponding Author:
Dr. Ramya Gandhi
Associate Professor, Department of Pathology, Sri Manakula Vinayagar Medical College and Hospital, Kalitheerthalkuppam, Madagadipet, Puducherry, India

Histopathological patterns of ovarian lesions in various age groups-3 year study in a rural population

Dr. Ramya Gandhi, Dr. Sriram V, Dr. Jayanthi C and Dr. Erli Amel Ivan

DOI: https://doi.org/10.33545/pathol.2020.v3.i3c.275

Abstract
Introduction: Ovarian lesions are commonly encountered and are complex in gynecological practice which can be either benign, borderline or malignant which constitutes a high fatality rate and it cannot be categorized clinico - radiologically. Definite diagnosis is of great importance for therapeutic and prognostic purposes. Histopathology gives accurate diagnosis in most of the cases.
Aims: To study the histopathological pattern of ovarian lesions in different age group and also to analyse the associated clinical and radiological findings.
Methods: A retrospective study conducted on 69 cases of ovarian lesions reported from June 2016–May 2019 in pathology department at Sri Manakula Vinayagar medical college and hospital, Puducherry
Results: Out of sixty nine ovarian lesions, 24 were non neoplastic and 45 were neoplastic lesions. Out of the neoplastic lesions 39 were benign and 6 were malignant. Among non-neoplastic lesions follicular cyst 12 was the most common lesion followed by endometriotic cysts 10. The majority of the cases were seen in the age group of 41-50 years.
Conclusion: Most ovarian lesions were common in the age group 20-50 years. Neoplastic ovarian lesions are more common than non-neoplastic lesion.

Keywords: ovarian lesion patterns, histopathology, ovarian neoplasms, surface epithelial tumor, malignancy

Introduction
Ovarian masses occur at all age groups and consist of both functional and pathological lesions. Most functional lesions like follicular cyst and corpus luteal cysts resolve spontaneously [1]. Pathological lesions of the ovary constitutes a complex area in gynecological practice which can be either benign, borderline or malignant which constitutes a high fatality rate [2]. The life time risk of ovarian cancer in a female range from 1.6% to 7% based on familial predisposition, which makes it as the most common cause of gynecological cancer related death and fourth most common cancer among females [3]. Bimanual examination is the clinical method of assessing a pelvic lesion. Even imaging modalities like Ultrasound, CT, MRI at instances may fail to delineate a benign from a malignant lesion [4]. Hence Histopathological examination of the resected specimen stands as a gold standard in categorizing the pathological ovarian lesion. Hence the present study was undertaken to evaluate the distribution of predominant histopathological patterns of ovarian lesions in various age groups and to assess the associated clinical and radiological findings.

Aims and Objectives
This study was aimed to find the histopathological pattern of ovarian lesions in different age group diagnosed in the pathology department of a tertiary care hospital over a 3 year period from June 2016-May 2019 and also to assess the associated clinical and radiological findings. We also aimed to compare our study findings with that of other studies in and out of the country.

Materials and Methods
It is a cross sectional study done for a period of 3 years from June 2016-May 2019 in the department of Pathology, in the patients undergone hysterectomy with bilateral salpingo oophorectomy for the ovarian lesions. This enabled us to study in detail the associated

histopathological findings in other organs of the gynecological system in patients with ovarian lesions. Hematoxylin and Eosin stained slides of ovarian lesions reported in the Pathology department for a period of 3 years were retrieved and examined. Relevant clinical and imaging findings were obtained from the medical records. Patients with abdominal pelvic masses other than of ovarian tumours diagnosed on histopathology were excluded from this study. The data collected included the clinical features like pain, palpable mass clinically and menstrual disturbances. The clinical and radiological impression of the lesions was also analysed. The pathological findings noted were the laterality of the lesion, gross findings like size of the lesion, cut surface of the lesion and the content of the cyst fluid. The histopathological diagnosis of the ovarian lesions, and the relevant findings in cervix, endometrium, myometrium and the other ovary were recorded.

Results

During the study period a total of 69 cases of ovarian lesions diagnosed were included in this study. The age group of the patients was categorized into decades (from 11-60 years). Ovarian lesions were common in the age group 41-50 years (24/69) followed by 21-30 years (17/69) and 31-40 years (17/69). Regarding clinical features 55/69 (79.7%) patients presented with pain, 35/69 (50.7%) presented with mass abdomen. 27/69 (39.1%) of the patients presented with menstrual irregularities. The majority of the clinical diagnosis was made as ovarian cyst 23/69 cases followed by adnexal mass 12/69. The radiological diagnosis was inconclusive for 30/69 cases (43.5%). The frequency pattern of clinical features, clinical diagnosis and radiological diagnosis were shown in Tables.1-3.

The pathological findings noted in other organs were as follows: The cervix was normal in 61/69 cases (88.4%), other changes encountered were squamous metaplasia, polyps and CIN changes. The endometrium was normal in 59/69 cases (82.6%) and hyperplastic in 9/69 cases (13%) and a polyp in one case. The myometrium was normal in 46/69 cases (66.7%), had leiomyoma in 16/69 cases (23.2%) and adenomyosis in 7/69cases (10.1%). The opposite ovary was normal in 47/69 cases (68.2%), rest 22/69 cases (31.8%) had non neoplastic and neoplastic lesions. 51/69 cases showed fallopian tube with normal morphology, rest showed hydrosalphinx. The frequency pattern of histopathological findings noted in other organs was shown in Table 4. The analysis of the gross findings of the ovarian lesions showed that the majority of the lesions 52/69 (75.4%) were less than 10 cms in size and 56/69 cases (73.9%) had cystic cut surface and 12/69 cases (17.4%) had solid cut surface and 1/69 case (1.4%) had both solid and cystic cut surface. Majority of the cysts contained pure serous cyst fluid 32/69 cases (46.4%). The frequency pattern of gross findings of the ovarian lesions is shown in Table 5.

In a total of 69 ovarian lesions, 24 were non neoplastic and 45 were neoplastic. The frequency pattern of different non neoplastic, benign and malignant ovarian lesions diagnosed in each age group is shown in Table.6 and Figure.1. The neoplastic lesions were comprised of 39/45 benign and 6/45 malignant cases. In the non-neoplastic lesions, Follicular cyst (12/24) was the predominant lesion followed by the endometriotic cyst (10/24). In the benign category, serous cystadenoma (18/39) was the predominant category followed by mucinous cystadenoma (12/39). Malignant tumours reported were in the category of Germ cell tumours and Sertoli Leydig cell tumour. The frequency pattern of histopathological diagnosis of each ovarian lesion is shown in Table.7. Regarding the laterality of the ovarian lesions, 32/69 were on the right side, 28/69 lesions were on the left side and 9/69 lesions were bilateral. The frequency pattern of laterality of the different ovarian lesions diagnosed in each group is shown in Table 8.

Discussion

The commonest age group diagnosed with ovarian lesions in our study is between 20-50 years which is similar to many other Indian studies but in contrast with the western data.[5,6] In the western world, majority of the ovarian lesions were seen in the elderly age group. This variation could be attributed to lack of awareness, reduced life expectancy and low socio economic status in the developing and under developed nations.[7] Most of the females with ovarian mass present with abdominal pain and/or abdominal mass.[8] In our study also most of our patients presented with abdominal pain and abdominal mass. Many of our patients also presented with abnormal menstrual history. Hence an Abdominal and pelvic examination is mandatory in every patient presenting with abdominal pain in the gynecological OPD and appropriate investigations must be carried out to diagnose the ovarian lesion at an early stage [9].

In our study we had a higher incidence of 39/69 benign cases followed by 24/69 non neoplastic cases and 6/69 malignant cases. The higher incidence of benign tumours compared to non-neoplastic and malignant lesions is also well documented in various other studies [10, 11]. But this finding is in contrast to the findings of other studies which reported that non neoplastic ovarian lesions are commoner than neoplastic ovarian lesions.[12-14] Among the non-neoplastic functional cysts in our study, follicular cysts was found to be the commonest. This finding is similar to that of study of Yasmin *et al* [15]. But this finding is contrast to that of Choi *et al* [16.] and Ashraf *et al* [17]. Majority of the follicular cysts are asymptomatic and usually resolve spontaneously. This variation can be attributed to environmental, hormonal and genetic influences.[18]Among the histopathological diagnosis of the neoplastic ovarian lesions, the commonest type of ovarian neoplasm reported in our study was surface epithelial tumours 30/45 neoplastic cases (66.7%) which is very closer to the observations made in several other studies i.e. 64%, 66% and 70% respectively.[19,20] Our study findings showed that serous tumours were more common than mucinous tumours (18 Vs 12 cases) which is similar to that of other studies [21, 22]. We did not come across any borderline tumors in our study.

In conclusion, the non-neoplastic and neoplastic ovarian lesions are histopathologically diverse and can occur predominantly in females of age group 20-50 years. A thorough clinical examination, accompanied by expertised radiological supplementation and an exact histopathological diagnosis can help in the correct management of these lesions.

Table 1: Presenting clinical features of the ovarian lesions.

Clinical Features	Mode of presentation
Pain	Present 55 (79.7%)
	Absent 14 (20.3%)
Mass	Present 35 (50.7%)
	Absent 34 (49.3%)
Abnormal Uterine bleeding	Present 37 (53.6%)
	Absent 32 (46.4%)
Menstrual history	Menopause 16 (23.2%)
	Amenorrhea 4 (5.8%)
	Menorrhagia 23 (33.3%)
	Normal 26 (37.6%)
PV findings	Normal 29 (42%)
	Mass felt 40 (58%)

Table 2: Clinical diagnosis made for the ovarian lesions

Clinical diagnosis	Number	%
Inconclusive	8	11.6
Ovarian tumour	3	4.3
Benign serous cystadenoma	2	2.9
mature cystic teratoma	4	5.8
Ovarian fibroma	3	4.3
Ovarian leiomyoma	7	10.1
Adnexal mass	12	17.4
Benign bilateral adnexal mass	3	4.3
Endometriotic cyst	1	1.4
Ovarian cyst	23	33.3
Complex cyst	3	4.3
Total	69	100.0

Table 3: Radiological diagnosis made for the ovarian lesions:

Radiological diagnosis	Number	%
Inconclusive	30	43.5
Dermoid cyst	5	7.2
Adnexal mass	17	24.6
Benign adnexal mass	3	4.3
Ovarian leiomyoma	2	2.9
Endometriotic cyst	1	1.4
Complex cyst	6	8.7
Ovarian tumour	5	7.2
Total	69	100

Table 4: Histopathological findings in other organs in ovarian lesions

Organ	Features	Number	%
Cervix	Within normal limits	61	88.4
	Squamous metaplasia	5	7.2
	Cervical polyp	1	1.4
	Leiomyoma	1	1.4
	CIN changes	1	1.4
Endometrium	Proliferative phase	38	53.2
	Secretory phase	21	29.4
	Hyperplasia	9	13.0
	Polyp	1	1.4
Myometrium	Normal	46	66.7
	Leiomyoma	16	23.2
	Adenomyosis	7	10.1
Opposite ovary	Normal	47	68.2
	Luteal cysts	2	2.9
	Simple serous cyst	6	8.7
	Follicular cysts	5	7.2
	Endometriotic cyst	3	4.3
	Hemorrhagic cyst	2	2.9
	Paraovarian cyst	1	1.4
	Sertoli tumour	1	1.4
Bilateral tubes	Normal	51	73.9
	Hydrosalphinx	18	26.1

Table 5: Gross findings of the ovarian lesions.

Clinical Features	Features	Number	%
Size of the cyst	<5cm	26	37.7
	5-10cm	26	37.7
	10-15cm	9	13.0
	>15cm	8	11.6
Gross findings	Uniloculated cyst	51	73.9
	Multiloculated cyst	5	7.2
	Solid	12	17.4
	Solid and cystic	1	1.4
Content of the cyst fluid	Serous	32	46.4

	Mucinous	17	24.6
	Seromucinous	2	2.9
	Hemorrhagic	10	14.5
	Pultaceous material	8	11.6

Table 6: Ovarian lesions diagnosed in each age group

Age group	Non neoplastic	Benign	Malignant	Total	%
11-20	1	4		5	7.3
21-30	7	7	3	17	24.7
31-40	7	9		16	23.3
41-50	6	17	2	25	36
51-60	3	2	1	6	8.7
Total	24	39	6	69	100

Table 7: Histopathological diagnosis of ovarian lesions in each age group

Histopathological diagnosis	11-20	21-30	31-40	41-50	51-60	Total	%
Follicular cyst	1	4	2	3	2	12	17.4
Hemorrhagic cyst			1		1	2	2.9
Endometriotic cyst		3	4	3		10	14.5
Leiomyoma				1	1	2	2.9
Simple serous cyst				6		6	8.7
Benign serous cystadenoma	2	3	5	7	1	18	26.1
Benign Mucinous cystadenoma	1	5	1	4	1	12	17.4
Dermoid cyst	1	1	3			5	7.2
Germ cell tumour			1			1	1.4
Sertoli Leydig cell tumour		1				1	1.4
Total	5	17	17	24	6	69	100

Table 8: Laterality of the different ovarian lesions diagnosed in each age group

Histopathological diagnosis	Right	Left	Bilateral	Total	%
Follicular cyst	7	3	2	12	17.4
Hemorrhagic cyst		1	1	2	2.9
Endometriotic cyst	4	5	1	10	14.5
Leiomyoma		2		2	2.9
Simple serous cyst	4		2	6	8.7
Benign serous cystadenoma	9	8	1	18	26.1
Benign Mucinous cystadenoma	4	7	1	12	17.4
Dermoid cyst	3	2		5	7.2
Germ cell tumour	1			1	1.4
Sertoli Leydig cell tumour			1	1	1.4
Total	32	28	9	69	100

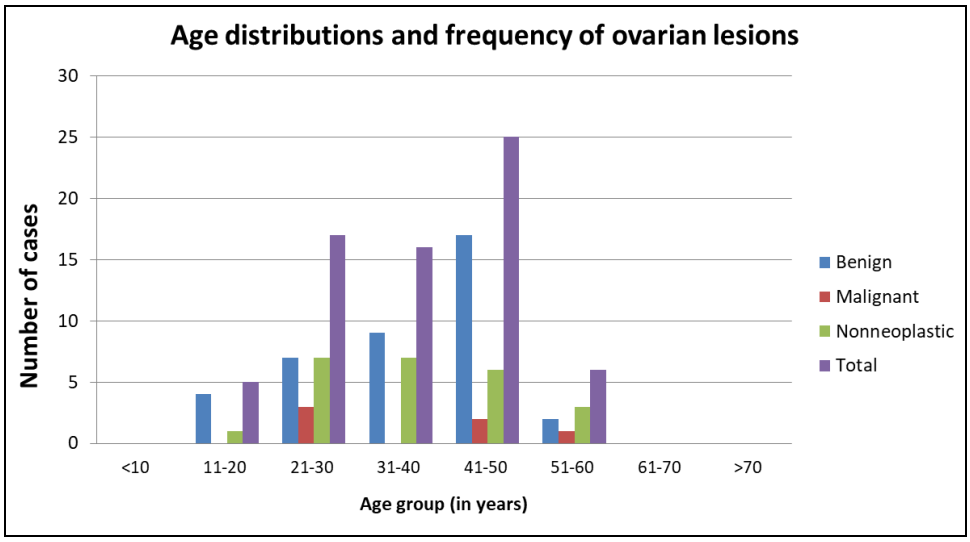

Fig 1: Ovarian lesions diagnosed in each age group

Conclusion

In our study we conclude that ovarian lesions are common in the age group 20-50 years. Neoplastic ovarian lesions are more common than non-neoplastic lesion. Follicular lesion is the most common non neoplastic lesion. Among the neoplastic ovarian lesions, surface epithelial neoplasms are most common histopathologically diagnosed entity, the commonest among is benign serous cystadenoma. As this study is a single centre based, multicentric studies with larger number of cases are required to reflect the real prevalent pattern of the ovarian lesion.

References

1. Warner BW, Kuhn JC, Bar LL. Conservative management of large ovarian cysts in children: The value of serial pelvic ultrasonography. Surgery.1992; 112:749-55.
2. Gerald DafeForae, Jonathan Umezulike Aligbe. A histopathological overview of ovarian lesions in Benin City, Nigeria: How common are the functional cysts? .Int J Med Sci Public Health. 2014; 4:265-68.
3. Kauff ND, Satagogan JM, Robson ME, Offit K. Risk reducing salpingo-oophorectomy in women with a BRCA1 or BRCA 2 mutation. N Engl J Med. 2002; 346:1609-15.
4. Retrospective Study of Clinical and Srinivas K., Harishbabu B, Malini KV. Pathological Features of Benign Ovarian Tumors. Sch. J. App. Med. Sci. 2015; 3(3A):1046-1050.
5. Histopathological pattern and relative frequency of ovarian masses in tertiary care hospital. Shreedhan G. Prajapati, Smita A. Shah, Nirali S. Amin, Hansa M. Goswami Int J Cur Res Rev. 2016; 8(4):29
6. Mariam Malik, Farooq Aziz. Malignant ovarian tumors: a study of 75 patients. Pak J Obstetric Gynaecology. 1999; 12(1, 2):83-6.
7. Quirk JT, Natarajan N. Ovarian cancer incidence in the United States. Gynaecol Oncol. 2005; 97:519-23, 1992-1999.
8. Presenting symptoms of epithelial ovarian cancer. Lataifeh I, Marsden DE, Robertson G, Gebski V, Hacker NF. Aust N Z J Obstet Gynaecol. 2005; 45(3):211-4.
9. Muhabat Q, Waheed F, Waqarunissa Jabeen N. Clinical Presentation of Ovarian Tumors. Open Journal of Obstetrics and Gynecology. 2016; 6:205-209.
10. Yasmin S, Aiman yasmin, Mohammad Asif. Frequency of benign and malignant ovarian tumors in a tertiary care hospital. J postgrad Med Inst. 2006; 20(4):393-7.
11. Khanum Z, Amanur Rehman. The prevalence and age distribution of ovarian cysts. Ann King Edward Med Coll. 2005; 11(4):392-3.
12. Wasim T, Majrroh A, Saddiq S. Comparison of clinical presentation of benign and malignant ovarian tumours. J Pak Med Assoc. 2009; 59:18-21.
13. Maliheh A, Mohammed H, Nadereh M, Mehdi Y, Fazareh G, Mojgan E. Surgical histopathology of benign ovarian cysts: A multicentre study. Iran J Pathol 2010; 5:132-6.
14. Guerriero S, Alcazar JL, Pascual MA, Ajossa S, Gerado M, Bargellini R *et al*. Diagnosis of the most frequent benign ovarian cysts: Is ultrasonography accurate and reproducible? J Womens Health (Larchmt) 2009; 18:519-27.
15. Yasmin S, Yasmin A, Asif M. Clinicohistological pattern of ovarian tumours in Peshawar region. J Ayub Med Coll Abbottabad. 2008; 20:11-3.
16. Choi HJ, Kim SH, Kim SH, Kim HC, Park CM, Lee HJ *et al*. Ruptured corpus luteal cysts: CT Findings. Korean J Radiol. 2003; 4:42-5.
17. Ashraf A, Shaikh AS, Ishfaq A, Akram A, Kamal F, Ahmad N. The relative frequency and histopathological patterns of ovarian masses. Biomed. 2012; 28:98-102.
18. Mackenna A, Fabres C, Alam V, Morales V. Clinical management of functional ovarian cysts: A prospective and randomized study. Hum Reprod 2000; 15:2567-9.
19. Ahmad Z, Kayani N, Hasan SH, Muzaffar S, Gill MS. Histopathological pattern of ovarian neoplasm. J Pak Med Assoc, 2000; 50:416-9.
20. Gatphol ED, Darnal HK. Pattern of ovarian neoplasm in Manipur. J Indian Med Assoc, 1990; 88:338-9.
21. Yasmin S, Yasmin A, Asif M. Clinicopathological pattern of ovarian tumours in Punjab region. J Ayub Med Coll Abbottabaad. 2008; 20 (4):11-13.
22. Prabarker, Maingi K. ovarian tumors-prevalence in Punjab. Indian J Pathology Microbiology. 1989; 32:276-81.