Original Article

Indian Journal of Pathology: Research and Practice
Volume 5 Number 2, May - August 2016
DOI: http://dx.doi.org/10.21088/ijprp.2278.148X.5216.5

Clinicopathologic Study of Ovarian Tumours

Anagha P. Amale*, Archana Joshi, Sadhana Mahore***, Suyog Chopade******

*Assistant Professor, Department of Pathology, ******Associate Professor, Department of Pharmacology, Dr. Ulhas Patil Medical College & Hospital Jalgaon Kh. Jalgaon. Maharashtra. **Associate Professor, ***Professor & HOD, Department of Pathology, NKP Salve Institute of Medical College, Nagpur.

Abstract

Background: Ovarian tumors are common forms of malignancy in women & mortality rate because of ovarian malignancy is increasing now a days. Present study is thesis topic consist of retrospective & prospective study of 130 ovarian tumours was carried out at department of pathology, NKP Salve institute of medical science Nagpur from June 2005 to May 2010. Commonest tumour was surface epithelial stromal tumour constituting 97(74.61%) cases followed by germ cell tumors 24(18.46%) cases, sex cord stromal tumour 7(5.38 %) & metastatic tumor 2(1.53%)Out of 130 cases, 113(86.92%) were benign tumors & 15 (11.53%) were malignant surface epithelial tumour. Only 2(1.53%) were borderline.Commonest clinical presentation in all ovarian tumors was pain (49.23%) & lump (38.46%) in abdomen.

Keywords: Ovarian Neoplasms; Surface Epithelial Tumor; Bening; Malignant**.**

Introduction

Ovary is unique in the variety of lesions that can arise from it [1]. Ovarian cancer is the most lethal gynecologic malignancy [2]. Tumors of ovary are common forms of neoplasia in women [3]. Incidence of ovarian cancer is increasing all over the world. It represents about 30% of all cancers of the female genital organs [4]. It is the 5th most common cancer in women & the 5th leading cause of cancer death in women accounting for 50% of all deaths from cancers of female genital tract [5]. About 80% are benign & these occur mostly in young women between the age of 20 to 45 years. Malignant tumors are common in older women between the ages of 40 to 65 years [6]. Ovarian neoplasms have become increasingly important not only because of large variety of neoplastic entities but more because they have gradually increased the mortality rate in female genital cancers [7]. Being notoriously asymptomatic ovarian tumors are mostly diagnosed in advanced stage. The incidence, clinical appearance & the behavior of different type of ovarian tumors is extremely variable.It is generally impossible to diagnose the nature of ovarian tumors preoperatively just by clinical examination & even on exploration, hence one has to depend on the microscopic appearance of tumors for further management of ovarian neoplasm's. Ovarian germ cell tumors are rare tumors, occurring primarily in teenagers & girls in their early twenties where preservation of reproductive function is desirable .The malignant germ cell tumors, form 2-5% of all ovarian malignancies [8]. In young women, the most common ovarian neoplasm is germ cell tumour & among the older women epithelial cell tumour is common [9].

A systematic study of all ovarian neoplasms encountered in a large institute over a period of years is more likely to produce a significant amount of useful data as regards the clinical manifestations, the incidence of various type of ovarian tumors & type of treatment offered. This data can be utilized for the purpose of suggesting ways & means of early detection of ovarian neoplasms & also for a better therapeutic approach to problem [10]. This study was aimed at detecting frequency of various types of ovarian tumors, their classification according to WHO system, and to correlate histopathological type, grade & clinical features of patient.

Corresponding Author: Anagha P. Amale, Assistant Professor, Department of Pathology, Dr. Ulhas Patil Medical College & Hospital Jalgaon Kh. Jalgaon. Maharashtra-425309.
E-mail: anagha_amale@yahoo.co.in

Materials and Methods

A total of 130 specimens of various ovarian tumors were recived in 10% formalin. These were received as unilateral or bilateral oophorectomy, unilateral or bilateral ovarian cystectomy specimens and pan hysterectomy specimens. Along with these other tissues like omental and peritoneal biopsies, pelvic and para-aortic lymph nodes also were received in some cases. Relevant clinical data i.e, clinical symptoms and examination findings were obtained from the requisition forms sent along with the specimens and record section of the institute. Selection of casesIn retrospective study,cases of ovarian tumour admitted, investigated & operated at our institute between June 2005- May 2008 were studied.In prospective study, cases were selected from patients of all age group, admitted in gynaecology wards & clinically diagnosed as ovarian neoplasm or operated for other gynaecologic problem between the period June 2008-May 2010. Clinical findings were noted personally. Complete physical examination, lab investigations, radiological findings & intra-operative findings were noted.

Collection of Specimen

The specimen were received in 10% formalin & thorough gross examination was done. Gross examination was done according to grossing techniques mentioned in Ackermans surgical pathology, ninth edition. Measurements of ovary & weight size, shape, colors, superficial surface, cut surface noted. Special attention was given consistency of tumour whether it is cystic, solid or mixed, contents of cysts including nature of cystic fluid, presence of hair, teeth, papillary projections, solid areas were carefully examined for presence of cartilage, bone, necrosis, haemorrhage, calcification, fibrosis, fatty change. In cystic lesion all the locules were opened and character of fluid was examined .Sections from uterus, cervix, fallopian tubes, omentum and lymph node were examined to rule out any other lesion. The sections were taken from each 1cm of the maximum diameter of the tumour in prospective casesThe specimens were subjected to routine processing, paraffin blocks were prepared, cut and stained with routine hematoxylin and eosin stain. All the observation were recorded as per the proforma, reporting was done, histopathologic diagnosis was given according to WHO classification & cases were classified. All the cases were studied in detail and findings were tabulated. Study of cases was done by using the proforma. which consists of the relevant information about age presenting complains, size of tumor, bilaterality,Asitic fluid examination & peritoneal biopsy findings provisional diagnosis, operative findings and histopathological analysis.

Result

Commonest tumour was surface epithelial stromal tumour constituting 97(74.61%) cases followed by germ cell tumors 24 (18.46%)cases, sex cord stromal tumour 7(5.38 %) & metastatic tumor 2(1.53%) (Table1) Out of 130 cases, 113 (86.92%) were benign tumors & 15 (11.53%) were malignant surface epithelial tumour. Only 2(1.53%) were borderline.Commonest clinical presentation in all ovarian tumors was pain (49.23%) & lump (38.46%) in abdomen. Out of 130 ovarian tumours, 88 (67.69%) cases had short duration of symptoms (0-6months) & 39 (30%) cases had 7months to 1yr duration. Only 3 (2.30%) cases had more than 1 year duration (Table 2) Commonest benign ovarian tumour encountered was serous cystadenoma 62 (47.69%), followed by mucinous cystadenoma 21(16.15%) & mature cystic teratoma 19(14.61%) cases.Commonest malignant ovarian tumour encounterd was serous cystadenocarcinoma 5(3.84%) cases, followed by mucinous cystadenocarcinoma 3 (2.30%) cases & metastatic tumours 2(1.53%) cases.Benign tumours were commonly recorded in third & fourth decade & malignant tumours in fifth & sixth decades & borderline tumours in fourth decade. (Table 3) Out of 130 ovarian tumours, there were 107 (82.30%) cases of unilateral involvement of ovary & 23 (17.69%) cases bilateral. Out of 113 benign tumours, 95 (84.07%) were unilateral & 18(15.92%) were bilateral.In majority of ovarian tumours cases, 105 (80.76%) cases were cystic, 15(11.53%) cases were partly solid & partly cystic only 10(7.69%) cases were solid. Majority of benign ovarian tumours ie 102 (90.26 %) cases out of 113 benign tumours were cystic. In majority of ovarian tumours cases, 95 cases were parus women, 12 cases were nulliparus & 6 cases were unmarried. Largest tumour in this study was serous cystadenoma having diameter 17 cm, & had 4 litre of fluid In this study, youngest patient was 8 year old girl of dysgerminoma, & oldest patient was 80 year old case of serous cystadenocarcinoma. In surface epithelial stromal tumours, 86 cases were benign, 9 were malignant & only 2 cases were borderline. Majority of cases, 62(47.69%) were serous cystadenoma, followed by 21(16.15%) cases of mucinous cystadenoma. One case of mucinous cystadenomas was associated with mature cystic teratomas & another case of mucinous cystadenoma

was associated with benign brenner tumour. Mature cystic teratomas were third most common tumour in this study. All were cystic & commonly found in third decade. 1 Case of endometrioid tumour was found Rest of germ cell tumours were struma ovarii (2cases), dysgerminoma (1 case) yolk sac tumour (1 case) mixed germ cell tumour (1 case) Among the sex cord stromal tumours, adult granulosa cell tumours (4 cases)were commonest followed by fibrothecoma (2 cases) one case of fibrothecoma showed large area of collagen formation. A case of sertoli leydig cell tumour had secondary amenorrhea & presented with hoarseness of voice, facial hirsutism, & baldness. Her serum testosterone was done, it was increased 9.45IU & DHEAS- 1800 IU. In metastatic tumour of ovary, in case of krukenberg tumour, primary was detected in rectum & in desmoplastic round cell tumour, primary was detected in colon.

Table 1: Showing different histopathlogical types of benign, borderline, malignant tumours

Types of Tumour	No of cases	Percentage
I) Common epithelial tumours	97	74.61
A) Serous tumour	68	52.30
1) Benign Cystadenoma	63	48.46
2) Malignant	05	3.84
B) Mucinous tumours	26	20
1) Benign Cystadenoma.	21	16.15
2) Borderline	02	1.53
3) Malignant	03	2.30
C) Brenners tumour	01	0.76
1) Benign	01	0.76
D) Endometrioid tumour	01	0.76
E) Mixed epithelial tumour (MCA + Benign brenners)	01	0.76
II) Sex cord stromal tumours	07	5.38
1) Granulosa cell tumour	04	3.07
2) Fibrothecoma	02	1.53
3) Sertoli leydig cell tumour	01	0.76
III) Germ cell tumours	24	18.46
1) Teratoma	21	16.15
a.Mature cystic teratomas	19	14.61
b.Struma ovarii	2	1.53
2) Dysgerminoma	1	0.76
3) Yolk sac tumours	1	0.76
4) Mixed GCT	1	0.76
IV) Secondary metastatic tumour	2	1.53

Table 2: Showing clinical presentation

Sr. No.	Symptoms	No. of cases (n = 130)	Percentage
1	Pain in abdomen (P)	64	49.23 %
2	Lump in abdomen (L)	50	38.46%
3	Leukorrhoea (LK)	4	3.07%
4	Ascites (A)	3	2.30%
5	Menstrual disorder (M)	2	1.53%
6	Post menopausal bleeding (PM)	2	1.53%
7	Loss of weight & appetite (LW)	1	0.76%
8	Bleeding per rectum (BR)	1	0.76%
9	Hoarseness of voice, baldness Facial hirsutism (HF)	1	0.76%
10	Acute abdomen (AA)	1	0.76 %
11	Secondary amenorrhea. (AM)	1	0.76%

The common complaints in present study were Pain in abdomen in 49.23 % of cases & lump in abdomen in 38.46% of case.

Table 3: Showing frequency of benign & malignant tumours

Sr. No.	Types of Tumours	No. of cases	Percentage
1	Benign	113	86.92%
2	Borderline	02	1.53%
3	Malignant	15	11.53%

In this study, most common tumour encounterd was benign ie 86.92 %, & malignant 11.53 %

Table 4: Showing percentage of histopathological types of ovarian tumours by various studies

Sr. No	Studies	Year	SEST	GCT	SCST	Metastatic
1	Tyagi et al [11]	1977	63.86	23.08	5.38	8.38
2	Bhattacharya et al [12]	1980	61.60	24.80	6.80	6.80
3	Verma & Bhatiya [13]	1981	65.00	21.33	7.20	6.50
4	Gupta et al [14]	1986	54.67	31.18	7.06	6.18
5	Prabhakar & Maingi [15]	1989	60.69	27.00	8.00	2.95
6	Nakashima et al [16]	1990	50.30	34.80	6.10	4.80
7	Mukherjee et al [17]	1991	58.24	31.57	6.66	2.80
8	Renu Sarkar et al [18]	1996	66.80	27.89	5.26	-
9	Pilli GS et al [19]	2002	70.90	21.20	6.70	1.06
10	**Present study**	**2010**	**74.61**	**18.46**	**5.38**	**1.53**

Table 5: Showing percentage of bening, borderling & malignant ovarian tumours reported by various workers

Sr. No.	Authors	Year	Benign	Borderline	Malignant
1	Jagdeshwari et al [20]	1971	64.15	-	35.80
2	Tyagi et al	1977	75.40	-	24.60
3	Randhava & Lata [21]	1980	66.20	-	34.80
4	Gupta et al	1986	59.40	0.60	40.00
5	Prabhakar & Maingi	1989	66.00	2.30	31.60
6	Mukherjee et al	1991	63.50	-	36.50
7	Maheshwari et al [22]	1994	71.90	-	28.10
8	Renu Sarkar et al	1996	67.90	3.69	28.42
9	Pilli GS et al	2002	75.20	-	24.80
10	**Present study**	**2010**	**86.92**	**1.53**	**11.53**

Discussion

Present study is an analysis of ovarian tumours. In this study 130 cases are studied.Few of findings are comparable with Pilli GS et al, Tyagi et al. (Table 4 & 5) Surface epithelial stromal tumour was commenest variety of ovarian tumour which is comparable to pilli GS, sex cord stromal tumours are comparable tumour with tyagi et el & metastatic variety was least common & was comparable with pilli GS et el. It is concluded from this study that on morphological grounds, tumors originating from surface epithelium are the commonest variant. Amongst malignant ovarian tumors patients usually present in advanced stages of the disease & histopathological type of ovarian tumor correlated with the prognosis.

References

1. Nalini Gupta, Dipti Bisht, Anil Kumar Agarwal, Veena K Sharma. Retrospective and prospective study of ovarian tumours and tumour like lesions. Indian J Pathol Microbiol. 2007; 50(3): 525-527.
2. Robert J. Kurman, Ie-Ming Shih. The origin of epithelial ovarian cancer: A proposed unifying theory. Am J Surg Pathol. 2010; 34(3): 433-443.
3. Young RH. The ovary. Sternberg S, et al: Diagnostic Surgical Pathology, 5th edition, New York, Raven Press. 1994; 219.
4. K.R. Lee, F.A Tavassoli, C H Buckley. Surface epithelial- stromal tumours.Pathology & genetics of tumours of the breast & female genital organs, WHO classification of tumours; IARC press Lyon. 2003: 117-145.
5. Shahala Baloch,Meharunnissa Khaskheli,Arshad Mehmood Malik, Aneela Sheeba,Imdad A Khushk.Clinical spectrum & management of ovarian tumours in young girls upto 20 years of age.J Ayub Med Coll. 2008; 20(4): 14-17.
6. Crum CP.The female genital tract.Kumar V,et al. Robbins and Cotran Pathologic Basis of Diseases, 2004; 7th Edition: 1092-1104.
7. MM Bhatacharya, S D Shinde, V N Purandare. A clinicopathological analysis of 270 ovarian tumours. J Postgrad Med.1980; 26(2): 103-107.
8. Minocha Bharti, Sen Soumendra K, Dewan Rupali,

Banerjee Sutopa, Purba. Ovarian Germ cell Tumour-A clinical Profile and Management-4 year study. Journal of Obstet Gyneco Ind. January/ February 2003; 53(1): 62-5.

9. S. Kayastha. Study of ovarian tumours in Nepal medical college teaching hospital. Nepal Med Coll J. 2009; 11(3): 200-202.
10. MM Bhatacharya, S D Shinde, V N Purandare. A clinicopathological analysis of 270 ovarian tumours. J Postgrad Med. 1980; 26(2): 103-107.
11. Tyagi S P, Madan A, Hameed, Mohsin, Razvi. Incidence of ovarian tumors with reference to histopathological typing. Ind J Obstet Gynec. 1977; 28: 827.
12. Bhatacharya MM, Shinde S D, Purandare V N. A clinicopathological analysis of 270 ovarian tumours. J Postgrad Med. 1980; 26(2): 103-107.
13. Verma K, Bhatiya. The study of ovarian tumours. J Obstet Gynec, India. 1981; 31: 106.
14. Gupta SC, Singh PA, Mehrotra TN, Rekha Agrawal. A clinicopathological study of ovarian tumours. Ind J Pathol Microbiol. 1986; 29: 354-362.
15. Prabhakar BR & Kalyani Maingi. Ovarian Tumours – Prevalence in Punjab. Ind J Pathol Microbiol. 1989; 32; 4: 276-281.
16. Nakashima N, Nagasaka T, Fukata S, et al. Study of ovarian tumours treated at Nagoya University Hospital, 1965-1988. Gynecol Oncol. 1990; 37: 103-11.
17. Mukherjee C, Dasgupta A, Sengupta J, Ghosh RN. Ovarian tumours – 10 years study. J Obstet Gynecol, India. 1991; 41(5): 691-696.
18. Renu Sarkar. Ovarian Neoplasms- A 14 years study. J Obstet Gynecol, India. 1996; 46(1): 156-159.
19. Pilli GS, Suneeta KP, Dhaded AV, Yenni V V. A study of 282 patient of ovarian tumours of Belgaum. J Indian Med Asso. (2002)Jul; 100(7): 423-4.
20. Jagdeshwari N, Reddy Satyabhama, Rao KS. Incidence of ovarian tumours. J obstet Gynecol, India. 1971; 21: 727.
21. Randhawa I, Lata P. A study of ovarian neoplasms. J Obstet Gynecol, India. 1980; 30: 531.
22. Maheshwari V, Tyagi SP, Saxena K. Indian J Pathol & Microbiol. 1994; 37: 75.