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RESEARCH ARTICLE

A CLINICOPATHOLOGICAL STUDY OF OVARIAN TUMOURS

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ABSTRACT

Introduction: Ovarian Tumour is a complex wide spectrum of neoplasms involving a variety of histological tissues ranging from epithelial tissue, connective tissue, and specialised hormones secretion to germinal and embryonal cells. Almost 80% of ovarian tumours are benign and occur in the age group of 20-45 years.

Objective: To study the histopathology of Ovarian neoplasms with reference to WHO classification.

Material and Methods: This clinicopathological study was conducted in 60 women diagnosed with ovarian tumours from January 2015 to June 2016 in the department of Gynaecology and Pathology in Govt. Medical College and Rajindra Hospital Patiala. Ovarian tumours were categorised according to WHO Histopathological classification.

Results: In our study 41(68.33%) tumours were benign, 16(26.67%) malignant and 3(5%) were border line. Most common tumours were surface epithelial tumours 46(76.66%), followed by 9(13.33%)germ cell tumours, 4 (6.67%) sex cord stromal and 1(1.66%) metastatic tumours. Most common malignant tumours were serous carcinoma (13.33%).

INTRODUCTION

Ovarian tumours are a common finding in gynaecology mainly due to the increasing use of routine ultrasound technology. They are important because of their varied clinical and histopathological presentation. Ovarian neoplasm is the most fascinating tumour of women in terms of histogenesis, clinical behaviour and malignant potentiality. A female risk of having ovarian tumour at any time in her life is 6-7%, of having cancer is 1.5% and dying from ovarian cancer is almost 1%.[1] Worldwide, ovarian cancer is the sixth most common cancer in women. It is the seventh most common cause of death due to cancer.[2] Ovarian tumour is a complex wide spectrum of neoplasms involving a variety of histological tissues ranging from epithelial tissues, connective tissue, specialised hormone secreting to germinal and embroynal cells. Malignant tumours are more common in older women between the ages of 45 to 65 years. Almost 80% of ovarian tumours are benign and occur in the age group of 20 and 45 years.[3] Oral contraceptive use and increasing parity are known protective factors.[4] Early menarche, late menopause, nulliparity and delayed child bearing are associated with increased risk of ovarian cancers. Pregnancy appears to be more strongly protective for endometroid and clear cell carcinoma.[3]

Aims & Objective

To study the histopathology of ovarian neoplasm with reference to WHO classification.

MATERIAL AND METHODS

The present study was conducted in the Department of Obstetrics & Gynaecology and Department of Pathology, Government Medical College and Rajindra Hospital Patiala from January 2015 to June 2016. 60 women admitted with ovarian tumours were included in the study. After detailed history, examination and investigation, probable diagnosis was made and they were operated upon. All specimens were sent to pathology department and categorised according to WHO hispathological classification.[2]

RESULTS

Maximum number of Ovarian tumours 20(33.3%) were seen in the age group of 21-30 years, followed by 41-50 years 11(18.3%) and 10(16.77%) in the age group of 31-40 years.

Table No. 1 Demographic Profile of the patients (n=60)

Age Group in years	No. of Cases	Percentage
11-20	5	8.3%
21-30	20	33.3%
31-40	10	16.7%
41-50	11	18.3%
51-60	8	13.3%
61-70	5	8.3%
>70	1	1.7%
Total	60	100

Table No. 2 During the Phase of Life

Phase	No of patients	Percentage
Premenopausal	38	63.33%
Postmenopausal	22	36.67%

(Table No. 1) Majority 38(63.33%) were in the premenopausal and 22 (36.67%) were in the Post-menopausal phase of life. (Table No. 2)

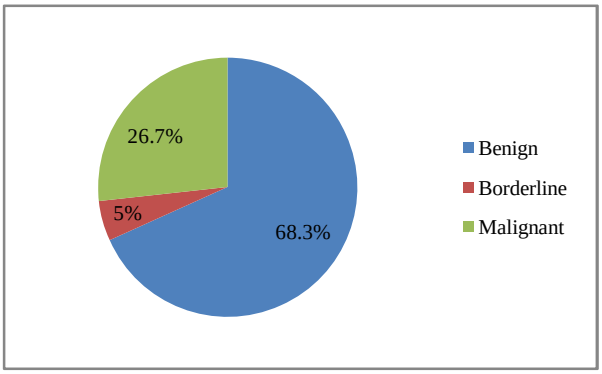

Fig 1 Distribution of Benign, Borderline and Malignant Ovarian Tumours

Out of 60 Ovarian tumours 41(68.33 %) benign, 16(26.67%) malignant and only 3(5 %) were diagnosed as borderline tumours. (Fig. 1))

Table No. 3 Incidence of Ovarian tumours as per nature of Neoplasms

Type of Tumour	Benign	Borderline	Malignant	Total	Percentage
SET	32	3	11	46	76.67
SST	1	0	3	4	6.67
GCT	8	0	1	9	15
Metastatic	0	0	1	1	1.66
Total	41	3	16	60	100

(SET-surface epithelial tumour, SST-sex cord stromal tumour, GCT-germ cell tumour)

We observed that surface epithelial tumours were maximum i.e. 46(76.67 %), followed by germ cell tumours 9(15 %). Sex cord and metastatic tumour were 4(6.66 %) and 1(1.66 %) respectively.

Table No. 4 Hispathological type of Ovarian Neoplasms as per WHO classification

According to tissue of origin	According to cell type	Benign/Borderline/ Malignant	No. of cases	Percentage
Surface Epithelial Tumours (46)	Serous (35)	Benign	26	43.33%
		Borderline	1	1.67%
		Malignant	8	13.33%
	Mucinous(9)	Benign	5	8.33%
		Borderline	2	3.33%
		Malignant	2	3.33 %
	Endometroid(2)	Benign	1	1.66%
		Malignant	1	1.66%
Germ Cell Tumours(09)	Mature Teratoma	Benign	8	13.33%
	Dysgerminoma	Malignant	1	1.66 %
Sex Cord Stromal Tumour(4)	Fibroma	Benign	1	1.66%
	Granulosa cell Tumour	Malignant	3	5%
Metastatic			1	1.66%

In our study, most common benign tumour was serous cystadenoma 26(43.33%) and most common malignant tumour was serous adenocarcinoma (13.33%) Next to serous cystadenoma mature cystic teratoma showed incidence of 13.33% among benign ovarian tumours. (Table No. 4)

Out of 60 ovarian tumours, 36(60%) were cystic, 11(18.33%) were solid and 13(21.67%) were of mixed consistency i.e. partly solid and cystic. (Table No. 5)Majority of the cystic tumours were benign (94.44%) whereas malignancy rate was much higher in tumours with solid and mixed consistency (72.72% and 61.54%)

Table No. 5 Consistency of Ovarian Neoplasms

Consistency	Benign	Borderline	Malignant	Total (Percentage)
Cystic	34 (94.44%)	1 (2.78%)	1 (2.78%)	36 (60%)
Solid	3 (27.27%)	0	8 (72.73%)	11 (18.33%)
Mixed	3 (23.08%)	2 (15.38%)	8 (61.54%)	13 (21.67%)

Table No. 6 Laterality of Ovarian Neoplasms

Type of neoplasm	No of cases	Unilateral	Bilateral
Benign	41	38 (92.68%)	3 (7.32%)
Borderline	3	2 (66.67%)	1 (33.33%)
Malignant	16	12 (75%)	4 (25%)
Total	60	52 (86.67%)	8(13.33%)

In the present study we observed, 52 (86.67 %) of the tumours were unilateral and 8(13.33%) were bilateral. Among malignant tumours 4 (25%) were bilateral whereas in benign tumours only 3 (7.32%) were bilateral. (Table No. 6)

DISCUSSION

The present study was carried out in 60 women diagnosed with ovarian tumours. The maximum number of tumours occurred in 21 to 30 years (33.33%), followed by 31-50 years (18.33%) and 31-40 years (16.7%). Similar age range was reported by Saxena *et al*(1980)[5] and Jagdeshwari *et al*(1971)[6]. Out of 60 Ovarian tumours, 68.33 % cases were benign, 26.67% were malignant and only 5% were borderline. These results are in comparison with Pilli *et al* (2002)[7], Gupta *et al* (2007)[8] and Yasmin *et al* (2006)[9].

All 60 Ovarian Tumours were categorised according to WHO histopathological classification. Maximum 76.66% were surface epithelial tumours followed by germ cell tumour 15%. 6.66% were sex cord stromal tumours and 1.66% were metastatic tumours in our study which is in concordance with the studies by Pilli *et al* (2002)[7], Kar *et al* (2005)[10], Pachori *et al* (2016)[11], Tejeswani *et al* (2013)[12]and Yogaumbal *et al* (2014)[13] where epithelial tumours were most common followed by germ cell tumours.

Most common benign tumours were serous cystadenoma (43.33%) in present study which is comparable to studies by Misra *et al* [14] and Maheshwari *et al* [15] and Nayak *et al*(2014) [16]Most common malignant tumour was serous adenocarcinoma (13.33%) which is comparable to study of Pilli *et al* [7], Gupta *et al*[8], Dowerah *et al* (2014) [17] and Yogambal *et al* (2014) [13]. Germ cell tumour was the second most common group of ovarian tumours. Out of 9 cases mature cystic teratoma accounted for 8(13.33%) of total neoplastic tumours. The study is comparable to Couto *et al* [18] and Nayak *et al*[16] who also reported incidence of 13.97%.

We observed, 52(86.66%) tumours were unilateral and 8 (13.33%) were bilateral. These results are similar to those of Prabhakar *et al* [19], Kar *et al* [10] and Jha *et al* (2008) [20].

60% tumours were cystic and 18.33% solid and 21.66% were of mixed consistency in present study which is comparable to the study of Gupta *et al* [8] and Mishra *et al* [14].

CONCLUSION

We concluded that despite of continuous improvement in diagnostic methods, it is often impossible to clinically differentiate between benign and malignant conditions and

histopathology remains the mainstay for not only for diagnosis but also for prognosis of ovarian tumours.

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