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HISTOMORPHOLOGICAL SPECTRUM OF OVARIAN TUMOURS: A TWO YEAR RETROSPECTIVE STUDY

Pathology

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ABSTRACT

Introduction: Ovarian tumours are a heterogenous group of neoplasms which account for one of the top five gynaecological malignancies in Indian women. The WHO classification of ovarian tumours is based on morphology with the recent molecular studies supporting the morphology based classification system. Ovarian neoplasms manifest at a late stage either stage 3 or 4 as the symptoms are delayed and non specific and even imaging modalities can be misleading and cytology has its own limitations, hence histopathology diagnosis remains the main stay in achieving an optimum treatment response.

Material and methods: This is a two year retrospective study carried out between December 2017 to December 2019 in the department of Pathology, Govt Medical College, Jammu. A total of 62 cases of ovarian tumours were studied. Non neoplastic lesions were excluded from the study. Gross examinations of the specimen along with clinical details were also taken into account for the final diagnosis given on H&E stained slides. All the ovarian tumours were classified based on WHO classification.

Results: Out of the total 62 ovarian tumours majority 47 (75.80%) were benign, 10 (16.10%) were malignant and 5 (8.10%) borderline. Age ranged from 13 to 70 years. Surface epithelial tumours (SET) were the commonest 39 (62.90%) followed by Germ cell tumours 19 (30.65%). Benign serous cyst was the commonest ovarian tumour among the SET and mature cystic teratoma in the Germ cell tumours. In the malignant category Papillary serous cystadenocarcinoma was the commonest followed by mucinous cyst adenocarcinoma.

Conclusion: A correct histomorphological diagnosis of ovarian tumours help gynaecologist in proper treatment of the patient and in institutes with limited provision of resources, histopathological study remains the gold standard.

KEYWORDS

ovarian tumours, serous, germ cell tumour, histopathology

INTRODUCTION

Ovaries are paired pelvic organs with complex anatomy and peculiar physiology with constant cyclical changes from puberty to menopause[1] and can show a great variety of ovarian tumours. The classification of ovarian tumours is based on morphology with the recent molecular studies supporting the morphology based classification system[2] and demonstrating that it accurately reflects both histogenesis /cell of origin and the underlying molecular abnormalities of the different ovarian tumour subtypes. Ovaries contain four major types of tissues, all of which can give rise to a variety of neoplasms. These four types are coelomic surface epithelial cells, germ cells, sex cords and ovarian stroma. Genetics, family history, increasing age, obesity, infertility are some of the risk factors associated with the development of ovarian tumours. Ovarian tumours manifest at a late stage either stage 3 or stage 4 so carry a poor prognosis[3,4] and earning itself the term silent killer.[5] Ovarian cancer ranks fifth in cancer deaths among women, accounting for more deaths than any other cancer of the female genital tract. A woman risk of getting ovarian cancer during her lifetime is 1 in 78. Various cancer registries have revealed an increasing trend in the incidence of ovarian cancer in India.[6]

MATERIAL AND METHODS

This is a 2 year retrospective study carried out between December 2017 to December 2019 in the Department of Pathology, Government medical college, Jammu. A total of 62 cases of ovarian neoplasms were studied. Non neoplastic lesions were excluded from the study. Data regarding gross details of the specimen like size, external surface, contents of the cyst, any solid or papillary areas were noted along with clinicoradiological correlation to give a final diagnosis based on histomorphological features on Haemotoxylin & Eosin stained slides. All the ovarian tumours were classified based on WHO classification.[7]

RESULTS :

Table No.1: Age distribution of Ovarian Tumours

Age (Years)	No. of Cases	Percentage (%)
Upto 20 years	07	11.30
21-30	10	16.13
31-40	18	29.00
41-50	10	16.12
51-60	12	19.35
>60	05	08.10
Total	62	100.00

Table No.2: Distribution of ovarian tumours

Distribution of Tumours	No. of Cases	Percentage (%)
Benign	47	75.80
Borderline	05	8.10
Malignant	10	16.10
Total	62	100.00

Table No.3: Distribution of ovarian tumours according to histological type.

Histological Type	No. of Cases	Percentage (%)
Surface Epithelial Tumours	39	62.90
Germ Cell Tumours	19	30.65
Sex Cord Tumours	03	4.84
Metastatic Tumours	01	1.61
Total	62	100.00

Table No.4: Distribution of Surface Epithelial Tumours (SET)

Type of tumour	No. of Cases	Percentage (%)
Serous Tumour	**28**	**45.16**
Benign	19	30.65
Borderline	05	8.06
Malignant	04	6.45
Mucinous tumour	**10**	**16.13**
Benign	08	12.90
Borderline	0	0.00
Malignant	02	3.23
Malignant Brenner tumour	**01**	**1.61**
Total	**39**	**62.90**

Table No.5: Distribution of Germ Cell Tumours

Germ Cell Tumour	No. of Cases	Percentage (%)
Mature Cystic Teratoma	18	29.03
Immature Teratoma	0	0.00
Dysgerminoma	01	1.62
Total	19	30.65

Table No.6: Distribution of Sexcord stromal tumours (SCST)

Sexcord stromal tumour	No. of Cases	Precentage (%)
Granulosa cell tumour	01	1.62

Fibroma	02	3.22
Total	03	4.84

DISCUSSION

Ovarian tumours form a complex group of neoplasms with varied histological features. The vast majority of these are benign and occur mostly in young women between the age of 20-45 years.[3] In our study also, 75.80% of the tumours were benign, followed by malignant tumours 16.10%, and borderline 8.10%. Benign serous cyst and Mature cystic teratoma or Dermoid cyst being the commonest. This observation correlates with the studies of Singh S et al[8], Couto F et al[9], and Kuladeepa AVK et al[10].

In the present study, age ranged from 13-70 years with the maximum cases seen in 31-40 years of age and this was supported by the study done by Swamy GG et al[11]. Most common ovarian tumour in our study was Surface epithelial 62.90% followed by Germ cell Tumour 30.65%, Sexcord stromal tumour 4.84% and Metastatic 1.61% and this corresponds to study done by Garg N et al[12].

Among the Surface epithelial tumours, Benign serous cyst was commonest followed by benign mucinous cyst. Among the malignant surface epithelial tumours, Papillary serous cyst adenocarcinoma was commonest seen in 4 cases and all above 50 years of age. In our study incidence of Papillary serous cyst adenocarcinoma was found to be 6.45% which is similar to the study done by Sharma I et al.[13] There were 5 cases of borderline serous tumour and no case of borderline mucinous tumour. It is important to separate them from the obviously invasive tumours because of their vastly better prognosis.[2] Our study showed 1 case of malignant Brenner tumour that constituted 1.61% of the total surface epithelial tumours. It was seen in a 50 years old female with large unilateral ovarian mass and on cut section contains both solid and cystic areas along with yellowish viscous fluid. Microscopically it showed definite stromal invasion along with cystic nests of transitional epithelium (urothelium with nuclear atypia)

In the present study, majority of Germ cell tumours were benign and include 18 cases of Mature cystic teratoma. These results were closer to the findings of Agarwal P et al.[14] Malignant tumours include a single case of dysgerminoma seen in 20 years old young girl. In our study Sex cord stromal tumours were benign mostly this is in comparison with study of Badge SA et al.[15]

Our study showed 1 case of metastasis to ovary and constituted 1.61% of all ovarian tumours this was similar to the findings of Gupta N et al[16], Jha R & Karki S.[17] This occurred in a case of 50 years old female presenting with ascites and ovarian mass.

CONCLUSION

Ovarian tumours are silent killers presenting a clinical challenge. Accurate diagnosis of ovarian tumours can be given in all the cases correlating the clinicoradiological findings and histomorphological features which remains the gold standard.

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