European Journal of Molecular & Clinical Medicine

ISSN 2515-8260 Volume 09, Issue 03, 2022

ORIGINAL RESEARCH

Histopathological Study of Ovarian Lesions at a Tertiary Level Hospital

Samir Ranjan Bhowmik[1], Ranbir Singh Chawla[2], Prabhat Kumar Lal[3]

[1]Associate Professor, Department of Pathology, Gouri Devi Institute of Medical Sciences, Durgapur, West Bengal, India.
[2]Consultant pathologist, Health World Hospitals, Durgapur, West Bengal, India.
[3]Associate Professor, Department of Community Medicine, Darbhanga Medical College, Darbhanga, Bihar, India.

ABSTRACT

Background:Ovary is a common site of both neoplastic and non-neoplastic lesions. Ovarian cancer presents with non-specific symptoms and majority of these are in advanced stage. The histopathological patterns of these lesions is helpful in treatment. Hence, the present study was done to determine the prevalence and distribution of various types of lesions of ovary.

Materials and Methods: The present study was cross-sectional descriptive in nature conducted on a total of 100 samples of ovary brought to the department of pathology for histopathology. The specimens were prepared using normal histopathological procedures and findings were noted.

Results: Corpus luteal cyst was the most common non-neoplastic lesion seen (49.1%). Serous cystadenoma (41.9%) was frequent benign lesion seen while Serous adenocarcinoma (4.7%) was the most common malignant lesion. 82.5% of the lesions were benign, 12.3% were malignant and 5.3% were borderline in nature.

Conclusion: Luteal cyst was common in non-neoplastic lesions. Serous cystadenoma was commonest benign tumour, whereas serous cystadenocarcinoma was frequent in malignant ones.

Keywords: Histopathology, Lesion, Neoplastic, Non-neoplastic, Ovary.

Corresponding Author: Dr. Samir Ranjan Bhowmik, Associate Professor, Department of Pathology, Gouri Devi Institute of Medical Sciences, Durgapur, West Bengal, India.
E-mail: drsamirranjanbhowmik@gmail.com

INTRODUCTION

Both benign and malignant lesions are commonly observed in the ovaries. They are very heterogeneous both within and across histologic groups, ranging from benign cysts to malignant tumours.[1] Ovarian tumours are the most frequent type of cancer in females, accounting for about one-third of all genital tract malignancies and ranks sixth among all cancers in this group.[2,3] The ninth most prevalent malignancy in women is epithelial ovarian cancer. The risk of ovarian cancer rises markedly with age. Around 70% of cancers develop during the reproductive years.[4]

Ovarian cancer is a silent killer. Most patients experiencing non-specific symptoms. The majority of ovarian malignancies are untreatable at the time of diagnosis, with a five-year survival rate being nearly 30%.[5] The histological findings of ovarian lesions can be used to aid in management. The precise cause of ovarian cancer is unknown. Hormonal and reproductive variables (family history of ovarian/breast cancer, nulliparity and late age at menopause) have all been linked to the disease.[6]

Germ cell tumours and specific sex cell tumours mostly affect adolescents and young adults Apart from this age group, the majority of primary ovarian neoplasms affect women in their 40s and 60s. Benign tumours are common between the ages of 20 and 40, whereas invasive carcinoma is more common between the ages of 50 and 70.[7]

Aims and objectives

The present study was done to determine the prevalence and distribution of various types of ovarian lesions in this area.

MATERIALS & METHODS

The present study was cross-sectional descriptive in nature. Samples were examined at the department of Pathology.

A total of 100 samples received during the study period were included. All ovarian biopsies including both neoplastic and non-neoplastic, obtained in the department from all age groups were included. Exclusion criteria was ovarian biopsies following chemotherapy and cytoreduction. The specimens were prepared using normal histopathological procedures, with 5 micron thick microsections and stained with H&E stains. Dewaxed and hydrated sections were stained with alum haematoxylin for 5 minutes after being dewaxed and hydrated with graded alcohol to water. Then they were rinsed in running tap water for 5 minutes or until the portions became blue. The parts were differentiated for 10 seconds in 1% acid alcohol before being rinsed thoroughly in tap water until they were blue again. Sections were immersed in ammonia water, then washed with tap water for 5 minutes before counterstaining with 1% eosin Y for 1 minute. The parts were then dried, cleaned, and DPX mounted for assessment of histopathological features.

RESULTS

A total of 100 cases were included in the present study. Age of the cases varied between 15 to 76 years. The age group of 31-40 years was commonly affected. In the age group of 15-45 years, benign tumours were common while malignant lesions affected the age group of 45 years and above.

Table1:showing non-neoplastic lesions (n=57)

Type of non-neoplastic lesion	**Number**	**%**
Corpus luteal cyst	28	49.1
Follicular cyst	16	28.1
Endometriosis	10	17.5
Tuberculosis	2	3.5
Inclusion cyst	1	1.8

Table2: showing types of neoplastic lesions (n=43)

Types of neoplastic lesions		**Number**	**%**
1.Surface epithelial tumours		31	72.1
A	Serous cystadenoma	18	41.9
B	Borderline serous tumours	1	2.3
C	Serous adenocarcinoma	2	4.7
D	Mucinous Cystadenoma	6	14
E	Borderline Mucinous tumours	2	4.7
F	Mucinous Adenocarcinoma	1	2.3
G	Endometrioid Adenocarcinomas	1	2.3

2.Sex cord stromal tumours		2	4.7
A	Fibroma	2	4.7
3.Germ cell tumours		9	20.9
A	Mature Teratoma (dermoid cyst)	7	16.3
B	Immature Teratoma	1	2.3
C	Dysgerminoma	1	2.3
4. Metastatic tumours		1	2.3

[Table 2] shows that 43% of ovarian lesions were neoplastic in nature. Serous cystadenoma accounted for 41.9% of lesions while Serous adenocarcinoma was seen in 4.7% cases. Borderline lesions were found in 5.3% cases.

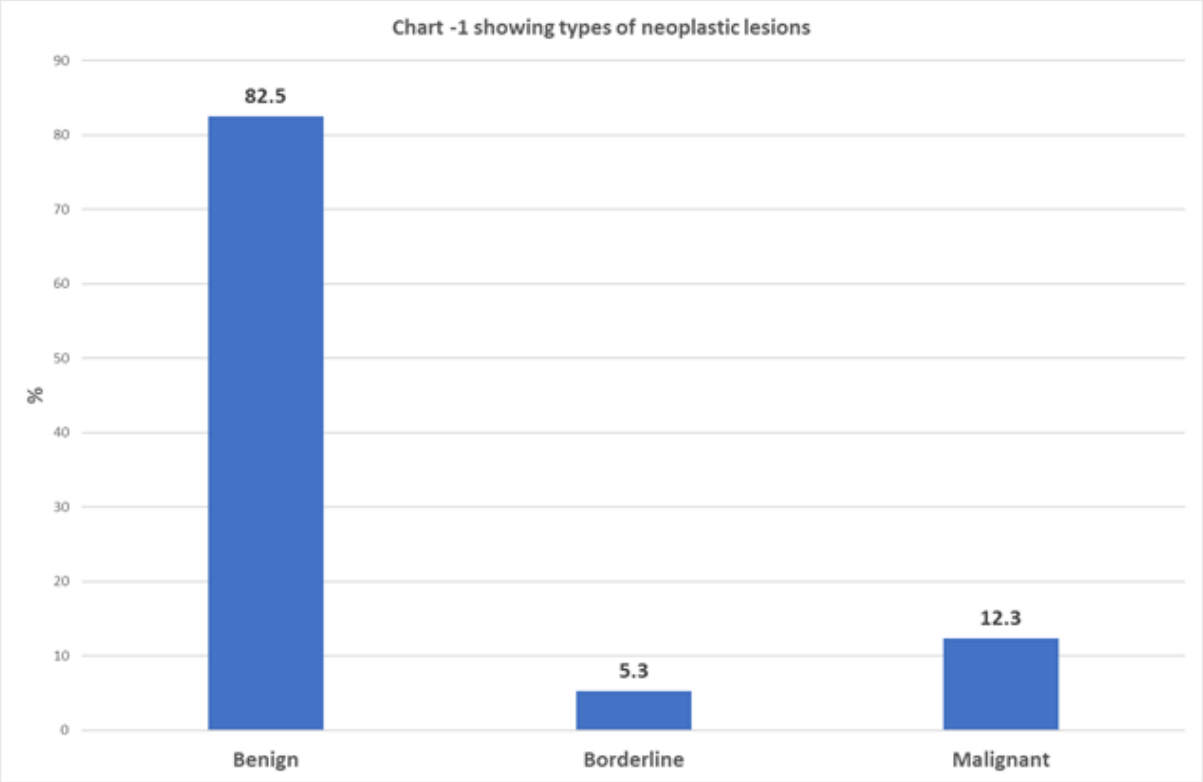

Figure 1: shows that 82.5% of the lesions were benign, 12.3% were malignant and 5.3% were borderline in nature.

DISCUSSION

A total of 100 cases were included in the present study. Age of the cases varied between 15 to 76 years. The age group of 31-40 years was commonly affected. In the age group of 15-45 years, benign tumours were common while malignant lesions were common in the age group of 45 years and above. Non-neoplastic lesions constituted 57% of all lesions. Corpus luteal cyst was the most common non-neoplastic lesion seen (49.1%) followed by follicular cyst (28.1%) and endometriosis (17.5%). 43% of ovarian lesions were neoplastic in nature in which 82.5% of the lesions were benign, 12.3% were malignant and 5.3% were borderline in nature. Serous cystadenoma (41.9%) was the most common benign lesion seen while Serous adenocarcinoma (4.7%) was the most common malignant lesion. Borderline lesions were seen in 5.3% cases.

Shrestha et al (2021) conducted a study in Nepal and observed that 74.8% of the ovarian lesions were neoplastic. Germ cell tumors (37%), epithelial tumors (33.9%) and

endometriotic cyst (18.1%) were the common types seen. Mean age in benign lesions was 38.1 years, in malignant lesion, it was 47.1 years and in non-neoplastic lesions, it was 36.9 years. Serous tumors were bilateral in 23.8% cases.[8]

Maru et al (2019) found in Gujarat that 89% of the ovarian lesions were unilateral and remaining 11% bilateral. Benign lesions were seen in 52%, non-neoplastic cysts in 44% and Borderline & Malignant Neoplasms in 4%. Follicular Cyst was commonest non-neoplastic lesion and was commonly bilateral. Serous Cystadenoma was the commonest benign lesion, and it was also bilateral frequently. They concluded that ovarian lesions presented with a variety of histological features. Histopathological examination continues to be important in diagnosis and management of these.[9]

Baru et al (2017) conducted a clinicopathological study of ovarian lesions in Odisha and found that age group of 21 to 45 years was most commonly involved. 40.7% of the lesions were benign, 2.78% were borderline and 56.48% were malignant. In benign lesions, the mean age was 42.84 years, in borderline lesions, it was 46.66 years and in malignant ones, it was 32.6 years. The commonest ovarian tumour was epithelial tumour (78.7%).[10]

Jose et al (2021) studied 100 cases of ovarian lesions. They observed the proportion of neoplastic lesions to be 51% and that of non-neoplastic to be 49%. 51% of the non-neoplastic lesions were corpus luteal cysts. Among the neoplastic lesions, 52.4% were benign, 3.2% were borderline and 27.8% were malignant. Serous cystadenoma was the most common benign ovarian neoplasm followed by mucinous cystadenoma. Serous cystadenocarcinoma (35.3%) was the commonest malignant lesion.[11]

Maurya et al (2018) conducted a study in Uttar Pradesh and found that follicular cyst was the commonest non-neoplastic finding (51.7%), followed by corpus luteal cyst (30.61%) and endometriosis (15.64%). 74.35% were benign, 4.27% borderline and 21.36% were malignant. Serous cystadenoma was commonest benign lesion (45.29%) followed by dermoid cyst (17.09%) and mucinous cystadenoma (10.25%). Serous adenocarcinoma (4.27%) was common among malignant lesions.[12]

Similar results were seen by Bodal et al (2014) who reported that the proportion of non-neoplastic lesions was 60% and that of neoplastic lesions was 40%. Luteal cyst was the commonest non-neoplastic lesions. 75% were benign; 1.66% borderline and 23.34% were malignant in the neoplastic lesions. Benign serous cyst was the most prevalent benign tumour and serous cystadenocarcinoma was commonest malignant lesion. They concluded that ovarian lesions present many challenges. While the morphology provides diagnostic clues, H & E stained slides help in specific diagnosis.[13]

Verma et al (2019) also observed similar trend in Haryana. The lesions seen were non-neoplastic (39%), benign (45%), borderline (5%) and malignant (11.25%). In this study, follicular cysts constituted 67.7% of nonneoplastic lesions followed by corpus luteal cysts and endometriotic cysts. Surface epithelial tumour (69.38%) dominated in neoplastic lesions followed by germ cell tumours (18.36%). Bilateral lesions were seen in 26.98% and unilateral lesions were seen in 73.01%. Age varied from 16 to 61 years in non-neoplastic lesions and 18-75 years for neoplastic lesions. The commonest clinical presentation of non-neoplastic lesions was abnormal uterine bleeding while benign and malignant tumours commonly presented with pain abdomen.[14]

Kanthikar et al (2014) found solitary follicular cyst in 74.66% and corpus luteal cyst in 20%. The distribution of lesions was benign (78.57%), borderline (1.42%) and malignant (20%). Serous cystadenoma followed by benign cystic teratoma were common benign lesions seen. Serous cystadenocarcinoma was the most common malignant lesion followed by mucinous cystadenocarcinoma and metastatic tumours.[15]

As is apparent from the above discussion, benign tumours are more common than malignant ones. However, there are histopathological variations in prevalence of different subtypes. Appropriate investigation and diagnosis required for management of such cases.

CONCLUSION

In the present study, non-neoplastic lesions outweighed neoplastic ones. Luteal cyst was commonest non-neoplastic lesion. Benign lesions were commoner than malignant tumours. Serous cystadenoma was the most prevalent benign lesion, whereas serous cystadenocarcinoma was the most common malignant tumour. Surface epithelial tumours outnumbered all other histological varieties of ovarian tumours.

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