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Original Research Article

Spectrum of Ovarian Lesions: An Institutional Study

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Abstract

Introduction: Ovary is the commonest site for developing non-neoplastic and neoplastic lesions. These lesions can occur in any age group from childhood to postmenopausal women.

Aims and Objectives: This study was conducted to analyse the histopathological features of all ovarian lesions and classify them.

Materials and Methods: Present study is a prospective study of 52 cases carried out over a period of one year from July 2016 to July 2017 . All patients admitted in gynaecologyward posted for oophorectomywith or without hysterectomywere included in the study. Salient findings related to individual case alongwith final histopathogical diagnosis were noted.

Results: There were total 58 lesions; out of which 37 were non-neoplastic; 13 were benign; and 8 lesions were of malignant variety. The most common age group involved was 40-59 years. The commonest symptom was abdominal pain and the right sided ovary was commonly involved. Follicular cyst was the commonest non-neoplastic lesion; whereas most common benign lesion was mucinous cystadenoma . Serous cystadenocarcinoma was the commonest malignant lesion.

Conclusion: Ovaries can be affected by variety of non-neoplastic and neoplastic lesions. Good clinical history and physical examination together with USG findings helps in probable diagnosis. Specific diagnosis is based mainly on routine gross and histopathological examination of the specimen. The study of macroscopic and microscopic features of different ovarian tumors enables categorization into morphological type which helps the gynecologists for proper management.

Keywords: Histopathology; Neoplastic Lesions; Non-Neoplastic Lesions; Ovarian Lesions.

Introduction

The ovaries are paired intra-pelvic organs of the female reproductive system. Each ovary consists of variety of cells that describes itsstructural complexity. This variety of cells can give rise to benign, malignant or borderline tumours. This is due to the complex structure of the ovary [1] as well as its typical functions. These occur with the cyclical changes that take place every month constantly [2].

The most common types of lesions encountered in the ovary include functional or benign cysts and tumours. Both ovarian neoplastic and non-neoplastic lesions possess a great challenge to gynecological oncologist. Some non-neoplastic lesions of the ovary usually present as a pelvic mass and mimic an ovarian neoplasm. Therefore, their proper recognition and classification is important to allow appropriate therapy [3].

The non-neoplastic lesions forming pelvic masses and mimicking ovarian tumours can be categorized into follicular cyst, simple cysts, corpus luteal cysts, endometriotic cysts and hemorrhagic cysts. WHO classification of ovarian neoplasms is based on the most probable tissue of origin, accordingly they are categorized as surface epithelial tumours, sex cord stromal tumours, germ cell tumours, metastatic tumours and tumours from ovarian soft tissue. Each category is further divided into subtypes.Ovarian carcinoma accounts for the greatest number of deaths from malignancies of female genital tract and is the fifth leading cause of cancer fatalities [4]. Distinction between non-neoplastic lesions and neoplastic lesions of ovary on histopathological basis is necessary since proper treatment depends upon the histological abnormality [5].

Materials and Methods

Present study is a prospective study of 52 cases carried out over a period of one year from July 2016 to July 2017 . All patients admitted in gynecology ward posted for oophorectomy with or without hysterectomy were included in the study. Detail clinical history was taken. Thorough physical examination was carried out. Findings of USG abdomen and pelvis were noted. Oophorectomy specimens (with or without hysterectomy) received in histopathology section of Central clinical laboratory were studied in detail. The ovarian specimens were analyzed macroscopically for various parameters like size, external surface, consistency, cut section appearance - Solid or cystic. If solid, its color, presence or absence of necrotic and hemorrhagic areas, if cystic - contents of cyst, number of locules, thickness of cyst wall, smooth or rough internal surface, presence of papillary excrescences, mention of solid areas etc. Grossing was done according to standard operating procedure and appropriate sections were submitted for tissue processing.

The tissues were processed by routine paraffin technique and sections were stained with haematoxylin and eosin. Microscopic slides were studied thoroughly and final histopathological diagnosis was given after discussing the case in our department. Neoplastic lesions were categorized as per WHO classification.

Results

Total 58 ovaries of 52 patients were analyzed in this study; out of which 36 lesions (62.1%) were non-neoplastic and 22 lesions (37.9%) were neo-plastic (Table 1).

The most common age group involved by non-neoplastic lesions of ovary was 20-39 years accounting for 48.6% incidence; whereas that of neoplastic lesions was 40-59 years (47.6%).

Out of all 52 cases, 46 specimens (88.5%) were unilateral and only 6 specimens (11.5%) were bilateral.

Out of all 58 ovarian specimens, 39 ovaries (67.2%) were cystic, 13 ovaries (22.4%) were solid and cystic and 6 ovaries (10.3%) were solid on gross examination (Table 2).

The most common non-neoplastic lesion was follicular cyst accounting for 20 lesions (55.6%) followed by hemorrhagic cyst which was observed in 15 ovaries (41.7%) (Table 3). There was a single case of corpus luteal cyst.

As shown in table IV, out of total 22 neoplastic lesions, 14 lesions were benign and 8 lesions were malignant. Amongst 14 benign lesions, the most common was serous cystadenoma with 28.6% incidence followed by mature cystic teratoma accounting for 21.4% incidence; 2 lesions of fibrothecoma and mucinous cystadenomaa each and single case of fibroma, serous cystadenofibroma and Brenner's tumour were also encountered.

There were total 8 malignant lesions; out of which, the most common was serous cystadenocarcinoma

Table 1: Distribution ofall ovarian lesions

Distribution of lesions	No. of cases	%
Non-neoplastic lesions	36	62.1
Benign neoplastic lesions	14	24.1
Malignant neoplastic lesions	8	13.8

Table 2: Distribution ofcases according to gross features

Gross features	No. of lesions	%
Cystic	39	67.2
Solid and cystic	13	22.4
Solid	6	10.3
Total	58	100.0

Table 3: Distribution of non-neoplastic lesions

Non-neoplastic lesions	No. of cases	%
Follicular cyst	20	55.6
Luteal cyst	1	2.8
Hemorrhagic cyst	15	41.7
Total	36	100.0

Table 4: Distribution of Neoplastic lesions

All neoplastic lesions	No. of cases	%
Fibroma	1	4.8
Fibrothecoma	2	9.5
Mucinous cystadenoma	3	14.3
Serous cystadenoma	2	9.5
Mature cystic teratoma	2	9.5
Recurrent fibromatosis	1	4.8
Brenner's tumour	1	4.8
Serous adenofibroma with atypia	1	4.8
Serous cystadenocarcinoma	4	19.0
Mucinous cystadenocarcinoma	1	4.8
Mixed germ cell tumour	2	9.5
Krukenberg'stumour	1	4.8
Total	21	100

with 50% incidence followed by mixed germ cell tumour accounting for 25% incidence. Mucinous cystadenocarcinoma and Krukenberg'stumour eachhad 12.5% incidence.

Discussion

Ovarian cancer is the second leading cause of mortality among all gynecological cancers [6].

Due to similar clinical presentation, there is confusion in the diagnosis of non-neoplastic and neoplastic lesions of ovary, although it is diagnosed as a mass or cystic lesion on ultrasonography and hence removed prophylactically in routine oophorectomies and hysterectomies [7].

In present study, maximum number of non-neoplastic lesions were found in 2nd and 3rd decade of life; whereas that of neoplastic lesions were found in 4th and 5th decade of life. Similar findings were observed by Kar et al[8] and Pathade et al.[9] However, Ramachandran et al [10] reported maximum number of neoplastic lesions in 2nd and 3rd decade of life.

In present study, the incidence of non- neoplastic lesiosn (62.1%) was more common than neoplastic lesions (37.9%). Similarly, Zaman et al. [11] and Kanthikar et al [12] reported more non-neoplastic lesions than neoplastic lesions which is in contrast with the study reported by Prakash et al. [13] who reported more incidence of neoplastic lesions.

Follicular cyst was the commonest finding in non-neoplastic lesions with 55.6% incidence which is in concordance with studies reported by Kanthikar et al. [12] and Prakash et al [13]. However, both of the above mentioned authors reported their second most common lesions as corpus luteal cyst which has only 2.7% incidence in our study.

We reported more benign lesions than malignant lesions which correlates well with studies reported by Gupta et al. [14] and Prakash et al [13].

Most common benign lesion was serous cystadenoma in our study as well as studies reported by Thakkar et al. [1] and Prakash et al [13]. However, our second most common lesion was mature cystic teratoma which correlates well with study by Thakkar et al [1] but is in contrast with the study by Prakash et al [13]. Also none of the above authors reported any case of benign Brenner's tumour which has 4.8% incidence in our study.

The incidence of fibroma, fibrothecoma and serous cystadenofibroma are well in concordance with the study reported by Prakash et al [13].

Amongst all 8 malignant ovarian lesions, serous cystadenocarcinoma was the commonest, which correlates well with almost all studies mentioned above.

Conclusion

To conclude, number of various clinical parameters such as age of the patient, location/laterality of the lesion, on one hand and histological type of ovarian lesion on the other hand are all interrelated.

All these clinical and histomorphological parameters and advanced newer diagnostic modalities like immunohistochemistry and morphometric analysisif required can help in early diagnosis so as to plan the line of treatment which in turn have prognostic significance.

Also passive surveillance and community screening facility along with spreading awareness among public and doctors and educating people will be helpful in early detection of the ovarian lesions.

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