Research Article

Histopathological pattern of ovarian lesions: A Hospital based study in Batticaloa, Sri Lanka

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Summary

Ovarian tumours are one of the most common neoplasms encountered in females. A five and a half year retrospective study was carried out in a tertiary care hospital to find out the frequency, age distribution and histopathological spectrum of ovarian lesions. There were 537 ovarian specimens sent for histopathological evaluation either as a solitary specimens or as part of total abdominal hysterectomy (TAH) from January 2012 to June 2017. Benign neoplastic lesions constituted most lesions diagnosed (49%). Among neoplastic ovarian lesions 80.1% cases were benign, 3.7% cases were borderline and 16.2% cases were malignant. Among benign ovarian neoplasms, 43.3% were serous cystadenomas; 30.0% were benign cystic teratomas and 22.4% were mucinous cystadenomas. Majority of malignant neoplasms were serous cystadenocarcinomas(58.5%) followed by mucinous cystadenocarcinoma, clear cell carcinoma, dysgerminoma and germ cell tumour.

Keywords: ovarian tumour, types, histopathology

Introduction

Ovaries are complex intra-pelvic organs of the female reproductive system and are a common site for both benign and malignant neoplasms in all age groups right from the intrauterine period to post-menopausal age group [1]. The complex anatomy of ovary and its peculiar physiology with constant cyclical changes from puberty to menopause is composed of a number of cell types each of which can give rise to tumours [4]. Almost 80% of the ovarian neoplasms are benign and it is also a common site for primary

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malignancy, although metastasis to ovaries can also occur [2]. Ovarian tumours are one of the major health problems confronting the General practitioners and Gynaecologists in particular.
Ovarian carcinoma represents the sixth most common female cancer, the second most common cancer of the female reproductive system, and the fifth leading cause of death due to cancers in women [3].

Ovarian cyst can be physiological or pathological. Physiological cysts are mainly follicular cysts and luteal cysts which are benign in nature. Pathological cysts are mainly ovarian tumours which can be benign, borderline or malignant. Benign ovarian tumours are more common in young females and malignant tumours are more common in elderly females [5]. When an ovarian cyst is found, it is essential to recognize benign from malignant tumours.

The World Health Organization Histological Classification of ovarian tumours separates ovarian neoplasms according to the most probable tissue of origin: surface epithelial (65%), germ cell (15%), sex cord-stromal (10%), metastases (5%) and miscellaneous. Surface epithelial neoplasms are further classified by cell type (serous, mucinous, endometrioid) and atypia (benign, borderline or malignant; malignant may be invasive or non-invasive) (6)

The ovary is anatomically situated within the pelvis which is not easily accessible. Further the symptoms of ovarian tumours are nonspecific. Therefore, identification of a high-risk population for ovarian malignancy and ideal screening methods are not available. Ovarian neoplasms present in various clinical forms and surprisingly many as vague, non-gynaecological complaints. Many ovarian neoplasms are asymptomatic in the early stages and some are unfortunately diagnosed in the advanced state due to the same reason. The high mortality rate of ovarian cancer is due to its late detection, thus earning itself the term “Silent Killer” [7].

Materials and methods

The study was undertaken as a retrospective study using existing patient data retrieved from the records of the Department of Pathology, Teaching Hospital, Batticaloa. The study was carried out to find out the different histological types of ovarian neoplasms and analyse their frequency and demographic details.

A total of 537 ovarian specimens were sent for histopathological evaluation from January 2012 to June 2017, either as solitary specimens or as part of total abdominal hysterectomy (TAH) specimens. The details of the histopathological diagnoses of the ovarian masses as well as the age distribution of the patients, were analysed using SPSS 21.

Results

Of the total 537 ovarian lesions 209 were non-neoplastic and 328 were neoplastic lesions (328). The distribution of the cases amongst these broad categories is given in Table 1. The distribution of non-neoplastic lesions is given in Table 2. Endometriotic cysts were the predominant non-neoplastic lesions diagnosed (127/209) followed by corpus luteal cysts (48/209).
Out of a total of 53 malignant cases, majority were (31 out of 53; 58.5%) serous cystadenocarcinoma followed by mucinous cystadenocarcinoma, clear cell carcinoma, dysgerminoma and germ cell tumour sharing 5 cases each. (Table 3)

Table 1: Distribution of ovarian lesions based on Histopathology diagnosis

Distribution of lesions of ovary	Number of cases	Percent age (%)
Non- neoplastic	209	38.9
Benign neoplastic	263	49.0
Malignant and Borderline neoplastic	65	12.1
Total	537	100.0

Table 2: Distribution of non-neoplastic lesions of the ovary

Non-neoplastic lesions	Frequency	Percentage (%)
Follicular cysts	34	16.3
Corpus luteal cysts	48	22.9
Endometriotic cysts	127	60.8
Total	209	100.0

Among the 328 neoplastic ovarian lesions 263 (80.1%) were benign, 12 (3.7%) were borderline and 53 (16.2%) were malignant. In 263 benign ovarian neoplasms, the most commonly seen lesion was serous cystadenoma(114/263; 43.3%) followed by benign cystic teratoma(79/263; 30.0%) and mucinous cystadenoma(59/263; 22.4%). The age distribution of the patients is given in Table 4. Patients in the age group of 20-39 years constituted the majority (277/537; 51.6%). Most of the benign neoplasms were

Table 3: Distribution of neoplasms of the ovary

Type of tumours	Number of cases
Epithelial tumours	
A. Serous tumours	
Serous cystadenoma	114(34.8%)
Borderline serous tumour	05(1.5%)
Serous cystadenocarcinoma	31(9.5%)
B. Mucinous tumours	
Mucinous cystadenoma	59(18.1%)
Mucinous cystadenocarcinoma	05(1.5%)
Borderline mucinous tumor	07(2.1%)
C. Clear cell carcinoma	05(1.5%)
Germ cell tumours	
Benign cystic teratoma	79(24.0%)
Dysgerminoma	05(1.5%)
Struma ovarii	01(0.3%)
Sex cord stromal tumours	
Granulosa cell tumour	05(1.5%)
Fibroma	11(3.4%)

observed in the age group of 20-39 years, while most of the malignant tumours were common in >40 year age group. (Table 5).

Table 4: Age distribution of the lesions

Age group (Years)	Frequency	Percentage (%)
<=19	30	5.6
20-39	277	51.6
40-59	188	35.0
>=60	42	7.8
Total	537	100.0

Table 5: Age distribution of neoplastic lesions

Neoplastic lesions	Age group (years)				Total
	<=19	20-39	40-59	>=60	
Benign tumours	16	131	98	18	263 (80.1%)
Borderline tumours	1	6	5	0	12 (3.7%)
Malignant tumours	1	11	21	20	53 (16.2%)
Total	18	148	124	38	328 (100%)

Discussion

Ovarian neoplasms have become increasingly important not only because of its large variety of histo-morphological patterns but also because they have increased mortality rate in female genital cancers. The incidence, clinical appearance and the behaviour of the different types of ovarian tumours is extremely variable. This study shows that most (49%) of the ovarian lesions are benign. In a study by Swagata Dowerah et al*,* 84% of the tumors were benign [11]. This finding is similar to that of Vaidya *et al* [12] who reported 82% benign growths in their study. Several other studies have also found a higher percentage of benign tumours as compared to malignant [10,12,13,14].

In our study incidence of non-neoplastic lesions was 38.9 %(209 out of 537). The finding was more or less similar to other studies where Kreuzer GF et al[15] reported 40.39% non-neoplastic lesions(82 out of 203 ovarian lesions) and Martinez-Onsurbe P et al [16] reported 55 out of 132 (41.67%) non-neoplastic lesions.

Endometriosis is a common condition found in women of reproductive age. The most common location of endometriosis is the ovary and posterior cul-de- sac [17]. In our study 127 cases of endometriomas out of 537 cases (23.6%) were reported. Al Fozen H and Tulandi T [17] in a study conducted over a 6-year period reported 340 lesions out of which 155 (45.59%) showed ovarian endometriosis.

This study shows that majority of the ovarian cancers were found in women more than 40 years of age. This is comparable to the study by R Jha et al [13] in which malignant ovarian tumours was more common above 40 years. In this study, benign serous cystadenomas were found to be more common than mucinous cystadenomas. Similar results were reported by Sumaira Yasmin, et al [18], Swagata Dowerah *et al [19] and* Zubair M et al [20]. However, a study by Ahmed et al found that the most common benign tumour was benign cystic teratoma (35.17%) [21]. Similar finding was also reported by Vaidya et al [12].

Conclusion

This study shows that most of the ovarian lesions are benign than malignant in all age groups. Surface epithelial tumours are the most common class of tumours. Considering individual tumours, the most common benign tumour in this study is serous cystadenoma whereas serous cystadenocarcinoma was the most common ovarian malignancy. Malignant ovarian tumours were more common above 40 years.

Conflicts of interest

None

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