

Histopathological Evaluation of Non-Neoplastic and Neoplastic Ovarian Lesions: A One Year Prospective Study in tertiary Care Hospital

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Abstract

Introduction: Adnexal masses are most common disease in gynaecology of which ovarian tumors represent 2/3rd of these cases. Ovarian lesions can be present in any age group and also present in a wide spectrum of histomorphological patterns. Many ovarian tumours are asymptomatic in the early stages and are unfortunately diagnosed in the advanced stage. The diagnosis of ovarian tumor helps to plan the treatment modality like chemotherapy, radiotherapy and surgery depending upon stage of the tumor and age of the patient. **Materials and Methods:** This is a prospective study of 85 ovarian lesions at tertiary care hospital within one year period. The specimens of ovarian masses sent from gynaecological department are processed by routine paraffin techniques. Microscopic examination was done on sections stained with Haematoxylin and Eosin. **Result:** The total 85 cases of ovarian neoplasms were studied during study period, out of which 45 were non-neoplastic lesions and 40 lesions were neoplastic. Follicular cysts were the commonest non-neoplastic lesion; 27 cases (60%), followed by endometriosis 11 cases (24.44%). Out of the 40 neoplastic ovarian lesions benign cases were 28 (70%), borderline cases were 3 (7.5%) and malignant cases were 9 (22.5%). Mucinous cystadenoma, followed by serous cystadenoma were most common lesions in benign neoplasm and serous cyst adenocarcinoma was the most common malignant lesion. **Conclusion:** Tumor-like lesions are more common than ovarian tumors mimicking ovarian neoplasm which manifest a variety of gross and histological features. Their histopathological study is still the gold standard method in diagnosing most of the ovarian lesions.

Keywords: benign; Malignant; Ovarian tumors.

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Introduction

Ovary is unique in variety of lesions that can arise from it. The classification and understanding of histogenesis of ovarian neoplasms is the most difficult and challenging to the gynaecological pathology.

Ovarian neoplasms consist of 3% of total female malignancies. It is the fifth most common cause of cancer related death in females.¹ Therefore diagnosis of variety histomorphological patterns of ovarian neoplasms plays vital role in their treatment and prognosis.²

The pathology of ovarian neoplasm is one of the most complex areas in gynaecology. This is because many tumors can originate from ovary. The tissue from which the ovarian neoplasm arises is often uncertain and the mode of development of the presumptive tissue is often disputed.³

Ovarian tumors are usually detected at a late stage and are large in size, because of their presentation with mild symptoms.⁴ The clinical behavior of this tumors varies widely, from an excellent prognosis to rapid progression and poor prognosis, most probably reflecting variation in the tumor, biological properties.⁵

Clinical manifestation and response to the treatment differ from one tumor to others. Ovarian tumors cannot be differentiate from only clinical and radiological features and absence of proper screening methods, the histomorphological spectrum is important for treatment and prognosis.⁶

Any age group is affected by ovarian tumors. A number of epidemiologic studies have evaluated a variety of risk factors for ovarian tumour. To date, these risk factors include: age, chronic inflammation and non-steroidal anti-inflammatory drug (NSAID) use, diet, ethnicity, hysterectomy, infertility, drug use, obesity, low parity, smoking, and talc use/ asbestos exposure.⁷

Ovarian tumors are unique among gynaecological tumors in that they can be hormonally active, producing estrogens or androgens.

Aims and objectives

To analyse the frequency of ovarian neoplasms and their clinico-histological features.

To provide diagnosis of various tumors and tumorlike lesions of ovary for further management of patient.

Materials and Methods

This study of clinicopathological evaluation of ovarian lesions was conducted at SMIMER hospital, Surat. It was prospective study within one year period.

The specimens received in pathology department, from surgical exploration of patients were examined grossly and fixed by 10% formalin overnight. Proper history about age, clinical features, radiological findings and clinical diagnosis were recorded.

Sections obtained by grossing were processed by routine paraffin blocking and H&E staining. After microscopy, the lesions are classified as per WHO classification of ovarian tumors.

Results

The total 85 cases of ovarian neoplasms were studied during study period, out of them 45 were non-neoplastic lesions and 40 lesions were neoplastic.

All age groups were observed in this study. Out of them benign tumor were common in the age group of 20-40 years and malignant tumors cases were common in older age (>40 years) (Table 1).

Table 1: Age-wise distribution of ovarian lesions

Age group	Non neoplastic ovarian lesions	Neoplastic ovarian lesions
10-20	03	01
21-40	15	15
41-60	24	20
>60	03	04
Total	45	40

Non-neoplastic lesion were more common than neoplastic ovarian lesions, which were present in 45 (52.94%) cases. Follicular cysts were the commonest

non-neoplastic lesion, followed by endometriosis (Table 2).

Table 2: Non-neoplastic ovarian lesions observed in this study

Non-neoplastic ovarian lesions	Number of cases	Percentage
Follicular cyst	27	60%
Endometriosis	07	15.55%
Corpus luteal cyst	11	24.44%
Total	45	100%

In 28 benign ovarian neoplasms, most common seen lesion was mucinous cystadenoma followed by serous cystadenoma and cystic teratoma. Out of total 8 malignant cases, serous cystadenocarcinoma was noted in maximum numbers; in 4 cases,

followed by 3 cases of granulosa cell tumor.

Out of total 40 neoplastic ovarian lesions observed in present study, majority of patients had unilateral ovarian tumors and only 6 patients were of bilateral ovarian tumors (Tables 3-5).

Table 3: Neoplastic ovarian lesion observed in this study

Nature of tumors	Numbers of cases	% of cases
Surface epithelial tumors		
Serous cystadenoma	07	17.5
Borderline serous tumor	01	2.5
Serous cystadenocarcinoma	04	10
Mucinous cystadenoma	14	35
Borderline mucinous cystadenoma	02	5
Germ cell tumors		
Benign cystic teratoma	06	15
Dysgerminoma	01	2.5
Sex cord stromal tumors		
Granulosa cell tumor	03	7.5
Fibroma	02	5
Total	40	100

Table 4: Neoplastic ovarian lesions

Benign tumor	28	70%
Borderline tumor	03	7.5%
Malignant tumor	09	22.5%
Total	40	100%

Table 5: Broad classification of neoplastic ovarian lesions

Broad group	Number of cases	Percentage
Surface epithelial tumors	28	70
Germ cell tumors	07	17.5
Sex cord stromal tumors	05	12.5
Total	40	100



Fig. 1: Chocolate cyst (gross appearance)



Fig. 2: Granulosa cell tumor (gross appearance)

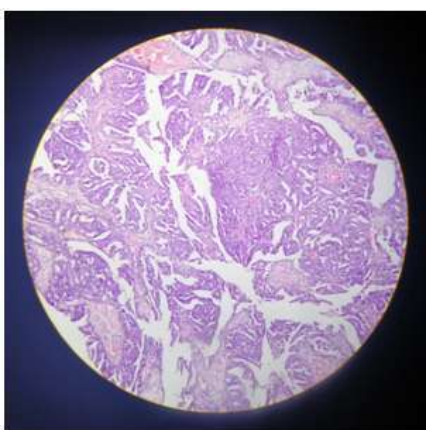


Fig. 3: Papillary carcinoma histology (H&Estain)

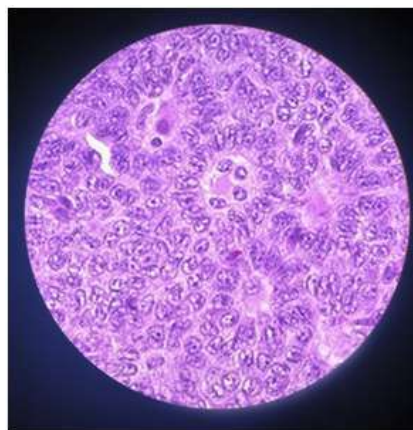


Fig. 4: Granulosa cell tumor histology (H&E stain)

Discussion

Ovarian malignancy is the second leading cause of mortality among all gynaecological cancers⁸.

In current study 85 non-neoplastic and neoplastic ovarian lesions were analysed to evaluate the histological findings and clinico-pathological features. In the present study, 45 neoplastic lesions were diagnosed from which most common was benign followed by, borderline malignancy and

malignant tumor.

On the basis of gross and microscopic findings, frequency of surface epithelial tumors were commonest (70%) followed by germ cell tumors (17.5%) and sex cord stromal tumor (12.5%). Similar observations were noted in other studies.

Ovarian malignancies are called as “silent killer” as majority of the primary ovarian neoplasm they remain asymptomatic until the advanced stage (Tables 6-7).

Table 6: Comparison of frequency of ovarian neoplasm

Type of tumor	Gupt et al., ⁹	Pilli et al., ¹⁰	Saxena et al., ¹¹	Couto F et al., ¹²	Present study
Benign	72.9%	75.2%	76.4%		70%
Borderline	4.1%	2.8%	-	2.33%	7.5%
Malignant	22.9%	21.8%	23.6%	-	22.5%

Table 7: Comparative incidence of overall ovarian neoplasm

Ovarian tumors	Samina et al., ¹³	Pilli et al., ¹⁰	Gupta et al., ⁹	Bhuvanesh et al., ¹⁴	Present Study
Surface Epithelial tumor	38.06	70.9	65.6	78.57	70
Germ cell tumor	19.35	21.2	23.9	10.85	17.5
Sex cord stromal tumor	8	6.7	8.3	7.14	12.5

Conclusion

Many primary and metaplastic tumors are frequent in ovary. Furthermore, ovarian lesions show complex and wide spectrum of clinical and histopathological features. Proper correlation of age, gross appearance, histopathological features, and classification according to the WHO classification help in early and accurate diagnosis as well as prognosis of ovarian tumors and appropriate treatment.

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