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Original Article

Histomorphological Study of Ovarian Tumors: An Institutional Experience of 2 Years

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Abstract

Background: Ovarian tumors have various histomorphological patterns. Histopathological examination plays an important role is classifying ovarian tumors for a better prognosis. Ovarian tumors are classified into surface epithelial tumors, germ cell tumors, and sex cord-stromal tumors. This study was done to know various histomorphological patterns of ovarian tumors.

Aims and Objectives: The aim of this study was to study the histopathology of lesions of the ovary with regard to the standard classification of ovarian tumors and to determine the relative incidence of these histomorphological patterns among different age groups of patients.

Materials and Methods: A 2-year prospective study carried out at SVS Medical College and Hospital, Mahabubnagar, Telangana, in the Department of Pathology from June 2015 to May 2017. On microscopy, histomorphological patterns of ovarian tumors were noted. Sections were given and slides were stained hemotoxylin and eosin, and special stains were done wherever necessary.

Results: Out of total 50 cases, 82% were benign and 18% were malignant. Histologically, surface epithelial tumor was the most common (80%), followed by germ cell tumors (16%) and sex cord-stromal tumors (4%). Age incidence of benign tumors was age group of 21-40 years and malignant 41-65 years.

Conclusion: Surface epithelial tumors were most common followed by germ cell tumors. The majority of tumors were reported among the age group of 35-45 years.

Key words: Microscopy, Ovarian tumors, Surface epithelial tumors

INTRODUCTION

Ovarian neoplasm is the most common tumors among women; fortunately, 90% are benign.[1] Ovarian cancer is the most frequent cause of death from gynecological cancers and the fourth most frequent cause of death from cancer in women in Europe, United States, and Eastern India.[2,3] Main etiology behind ovarian tumors is risk factors that are increasing age, positive family history, increase the age of reproduction, high socioeconomic classes, and nulliparity.[4] Ovarian tumors are insidious in onset and usually diagnosed at a late stage. They are rare in young age group.[5] They commonly present with abdominal pain, a lump, or menstrual irregularities.[6]

Depending on the type of the ovarian tissue where the neoplasm develops, ovarian tumors are classified into three primary classes: Epithelial tumors 90%, germ cell tumors 3%, and sex cord/stromal tumors 6%.[7,8]

The purpose of this study was to assess the incidence, morphological, gross, histopathological pattern, and incidence of the age distribution of ovarian tumors in SVS Medical College.

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MATERIALS AND METHODS

The present prospective 2-year study was carried out in the Department of Pathology, SVS Medical College,

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Mahabubnagar, Telangana, India, from June 2015 to May 2017. The samples included the specimens from the Department of Gynecology at our institute along with specimens from outside.

The specimens were allowed to fix in 10% buffered formaline for 24-48 h. After fixation, multiple bits were taken from representative areas of the tumor and the accompanying tissue. Special attention was given to solid areas adjacent to the ovarian surface and papillary projections. They were processed for histopathological examination, and paraffin blocks were made. The blocks were cut at 3-5 um thickness and stained with hematoxylin and eosin stain; special stains were carried out whenever needed.

RESULTS AND OBSERVATIONS

A 2-year prospective study of ovarian tumors was studied at the Department of Pathology, SVS Medical College, Mahabubnagar, Telangana, from June 2015 to May 2017.

Out of 50 ovarian tumors included, 82% (41/50) were benign and 18% (9/50) were malignant (Table 1).

Surface epithelial tumors were most common (80%) followed by germ cell tumors (16%) (Table 2).

Out of 40 cases of surface epithelial tumors, serous tumors comprised about 75% (30/40) and mucinous tumors about 25% (10/40) (Table 3).

Out of 40 cases of surface epithelial tumors, serous cystadenomas comprised about 62.5% (25/40), serous cystadenocarcinoma 12.5% (5/40), mucinous cystadenomas about 17.5% (7/40), and mucinous cystadenocarcinomas 7.5% (3/40).

Germ cell tumors comprised about 16% (8/50) all of them are mature teratomas (Table 2).

Sex cord-stromal tumors comprised only 4% (2/50) of all ovarian tumors (Table 2). In 2 cases of sex cord stromal tumors one is granulosa cell tumor and another is fibroma.

Age range from 15 to 65 years with majority of cases included, among 36-45 years, 30 (60%) cases. The youngest patient of our series was a female of 15 years with dermoid cyst, and the oldest patient was 65 years, a case of serous cystadenocarcinoma ovary.

Serous cystadenomas (20), mucinous cystadenomas (5), benign cystic teratomas (4), and granulosa cell tumor (1) were most common among 36-45 years of age group. One case of fibroma and 3 cases of benign cystic teratomas were among 46-55 years of age. Three cases of serous cystadenocarcinoma and 1 case of mucinous cystadenocarcinomas were among 56-65 years of age group (Table 4).

On gross examination, among 50 cases, cystic 78% (39/50), solid 16% (8/50), and both cystic and solid areas 6% (3/50) (Table 5).

Based on the site of involvement, majority of the tumors were unilateral about 76% (38/50) with right side predominance, bilateral in 24% (12/50).

Table 1: Distribution of ovarian tumors

Tumor	Number of cases (%)
Benign	41 (82)
Malignant	9 (18)
Total	50 (100)

Table 2: Histomorphological pattern of ovarian tumor

Type of tumor	Number of cases (%)
Surface epithelial tumors	40 (80)
Germ cell tumors	8 (16)
Sex cord-stromal tumors	2 (4)
Total	50 (100)

Table 3: Percentage distribution of surface epithelial tumors

Type	Number of cases (%)
Serous tumors	30 (75)
Mucinous tumors	10 (25)
Total	40 (100)

Table 4: Age-wise distribution of cases

Age in years	Number of cases (%)
15-25	2 (4)
26-35	10 (20)
36-45	30 (60)
46-55	4 (8)
56-65	4 (8)

Table 5: Consistency of ovarian tumors

Consistency	Number of cases (%)
Cystic	39 (78)
Solid	8 (16)
Cystic and solid	3 (6)
Total	50 (100)

Table 6: Comparision of histomorphological patterns of ovarian tumors

Histomorphological pattern	Ahmad *et al.*[12] (%)	Tejeswini[13] (%)	Panchal and Parikh[9] (%)	Jha *et al.*[10] (%)	Bhagyalakshmi *et al.*[14] (%)	Present study (%)
Surface epithelial tumors	543 (63.50)	237 (85.25)	39 (46.9)	84 (52.2)	214 (80.2)	40 (80)
Germ cell tumors	232 (27.13)	27 (9.72)	38 (45.7)	68 (42.2)	38 (14.2)	8 (16)
Sex cord-stromal tumors	50 (5.84)	11 (3.95)	3 (3.6)	5 (3.1)	11 (4.1)	2 (4)

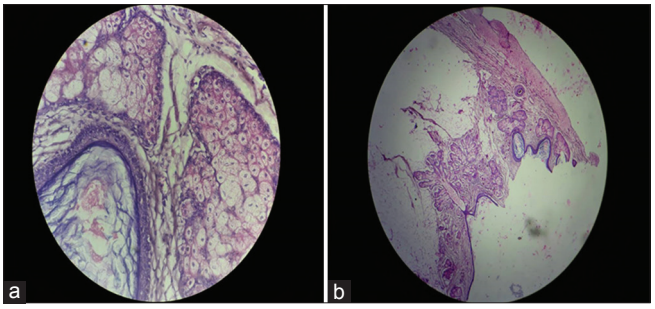

Figure 1: (a and b) Microscopic pictures of dermoid cyst high-power view and low-power view

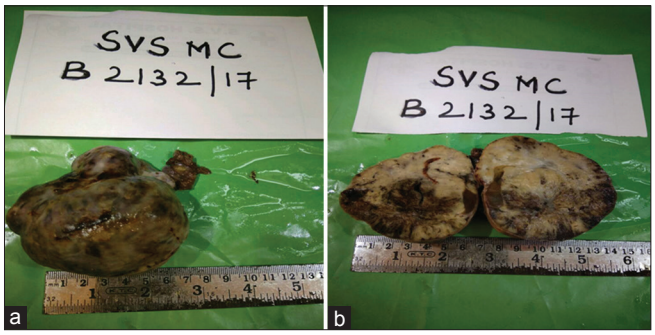

Figure 2: (a and b) Papillary serous cystadenocarcinoma gross and cut section

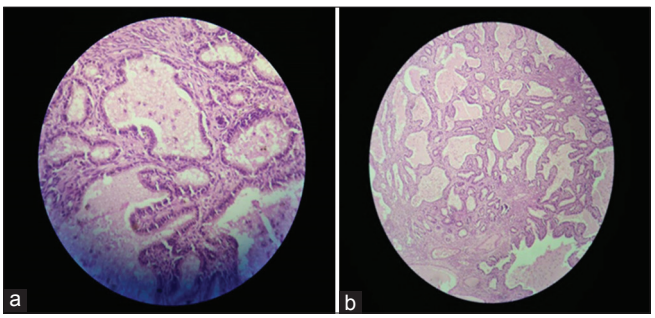

Figure 3: (a and b) Microscopic pictures of papillary serous cystadenocarcinoma high- and low-power view

DISCUSSION

In the present study, age range from 15 to 65 years with majority of cases included, among 36-45 years, 30 (60%) cases. The youngest patient of our series was a girl of 15 years with dermoid cyst (Figure 1) and the oldest patient was 65 years, a case of serous cystadenocarcinoma ovary (Figures 2 and 3).

In the present study, surface epithelial tumors were most common (80%) followed by germ cell tumors (16%). This is similar to the finding of Ahmad *et al.*, Tejeswini, Panchal and Parikh, Jha and Karki, and Bhagyalakshmi *et al.* (Table 6).

In the present study, cases were reported in the age group of 15-65 years. Majority was, among 35-45 years, 30 (60%) cases. In Panchal and Parikh study, age ranged from 10 to 86 years with mean age of 39.1.[9] Jha and Karki showed majority of the ovarian tumors, among 31-40 years age group, 43 (26.7%) cases.[10]

Ovarian tumors were unilateral in 76% of cases (38/50) and bilateral in 24% (12/50) with the same findings of Panchal and Parikh study which showed unilateral tumors in 65 (78.3%) cases and bilateralism was seen in 18 cases (22%).[9] In Janaki *et al.* study, most of the tumors were unilateral with right side predominance (66.42%).[11]

Teratoma was the most common germ cell tumor found in this study constituting 16% of all ovarian tumors which is comparable to the results observed by Janaki M *et al.*[11]

CONCLUSION

The histopathological examination of ovarian tumors is the most important method to differentiate between benign and malignant tumors and also in predicting the prognosis. This study concludes that surface epithelial tumors were most common followed by germ cell tumors. Majority of the tumors were reported among the age group of 35-45 years.

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