Original Research Article

Clinicopathological study of benign ovarian tumours

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ABSTRACT

Background: The incidence of ovarian tumor amongst gynecological admissions have been reported to vary from 1-3%. About 75% of these tumors have been found to be benign. Ovarian malignancies represent the greatest clinical challenge of all the gynecological malignancies. During the reproductive years most of the ovarian tumors encountered are benign. About 2/3 of the ovarian tumors are encountered in this group only. The chance that an ovarian tumor is malignant in a patient younger than 45 years is 1 in 15. The differentiation of the benign from malignant tumors can go wrong even with imaging modalities. CA125 along with ultrasound are useful in differentiating benign from malignant tumors. Histopathological examination is gold standard for diagnosis of ovarian neoplasm.

Methods: The present study includes consecutive cases of histopathologically proven ovarian tumors of 3 years from June 2010 to May 2013 reported by the Department of Pathology of our tertiary care center. It includes total 150 cases. After careful study of gross findings, appropriate bits were taken from received ovarian specimen, followed by routine paraffin processing to make H and E stained slides. Special stains were used wherever needed.

Results: Majority of the cases 91 (60.67%) were benign, 53 (35.33%) were malignant and 6 (4.0%) were borderline. Surface epithelial tumours were the most common type (68.13%) of ovarian neoplasm in this study. Most of tumours in our study occurred in the age group of 21-40 years. Mucinous cystadenomas were most common benign surface epithelial tumour and most common benign tumors overall. There were 22 cases of benign germ cell tumor, all were mature teratoma. All the sex-cord stromal tumours were diagnosed in women older than 40 years. Most common benign lesion in our study is surface epithelial tumour and in age group of 21-40 years. 84% patients studied had symptoms at presentation, out of which 26% of patient presented with dull/dragging pain. Pan hysterectomy was the most common procedure for surgical management.

Conclusions: Most of ovarian neoplasm are benign with mucinous cystadenoma being commonest entity. Commonest age group is 21-40 years. Commonest benign germ cell tumor is Mature cystic teratoma. Commonest clinical symptom is dull/dragging pain. Pan hysterectomy was the most common procedure for surgical management.

Keywords: Dragging pain, Mucinous cystadenoma, Mature cystic teratoma, Pan hysterectomy

INTRODUCTION

The incidence of ovarian tumor amongst gynecological admissions have been reported to vary from 1-3%. About 75% of these tumors have been found to be benign. Ovarian malignancies represent the greatest clinical challenge of all the gynecological malignancies. During the reproductive years most of the ovarian tumors encountered are benign. About 2/3 of the ovarian tumors are encountered in this group only. The chance that an ovarian tumor is malignant in a patient younger than 45 years is 1 in 15. The bimanual examination is the most practical method of screening for an adnexal mass. Adjunctive diagnostic techniques like sonography, MRI and CT may help to delinate the nature of adnexal enlargement. The differentiation of the benign from
Malignant tumors can go wrong even with imaging modalities. CA125 along with ultrasound utilizing multivariate logistic regression analysis algorithms were useful in differentiating benign from malignant tumors. Ovary can give rise to a great range and variety of tumors than any other organ in the body. The tissue from which the ovarian tumor arises is often uncertain and the mode of development of the presumptive tissue is often disputed.

Aim and objectives was to study, diagnose and classify excised ovarian lesions and to further analyze benign ovarian tumors

**METHODS**

**Source of data**

The present study includes consecutive cases of histopathologically proven ovarian tumors of 3 years from June 2010 to May 2013 reported by the Department of Pathology of our tertiary care center. It includes total 150 cases.

**Inclusion criteria**

All consecutive cases of histopathologically proven ovarian tumors specimens received in the Department of Pathology of our institute during June 2010 to May 2013.

**Exclusion criteria**

All non-neoplastic or tumor-like lesions of the ovary were excluded.

After careful study of gross findings, specimens were fixed in formalin overnight. Appropriate bits were taken from received ovarian specimen, followed by routine paraffin processing to make H and E stained slides. Special stains were used wherever needed.

**RESULTS**

Out of total 150 cases majority of the cases 91 (60.67%) were benign, 53 (35.33%) were malignant and 6 (4.0%) were borderline (Table 1).

**Table 1: Distribution of benign ovarian tumors according to histopathological type.**

| Benign tumors          | Number of cases |
|------------------------|-----------------|
| Surface epithelial tumor | 62              |
| Sex cord stromal tumor  | 07              |
| Germ cell tumor         | 22              |

Study of those 91 benign ovarian neoplasm revealed 62 cases were surface epithelial tumors, 7 cases were sex cord stromal tumors and 22 cases were germ cell tumors (Table 2).

Out of total 91 cases 46 (50.54%) cases were in between age group of 21-40 years. Benign ovarian tumors are common in active reproductive age group, but sex cord stromal tumors occurs in late reproductive age group (after 40 years of age). In post-menopausal women malignant neoplasm of ovary were more common than benign (Table 3).

**Table 2: Distribution of benign ovarian tumors according to age group.**

| Age group     | Number of cases |
|---------------|-----------------|
| 10-20 years   | 7               |
| 21-30 years   | 20              |
| 31-40 years   | 26              |
| 41-50 years   | 21              |
| 51-60 years   | 11              |
| 61-70 years   | 5               |
| More than 70 years | 1              |
| **Total**     | **91**          |

Mucinous cystadenomas were most common benign surface epithelial tumor and most common benign tumors overall, followed by serous cyst adenoma. There were 22 cases of benign germ cell tumor, all were mature teratoma (Table 4).

**Table 3: Distribution of benign surface epithelial ovarian tumors according to histopathological type.**

| Surface epithelial tumors | Number of cases |
|---------------------------|-----------------|
| Serous                    | 27              |
| Mucinous                  | 30              |
| Seromucinous              | 01              |
| Transitional cell         | 02              |
| Adenofibroma              | 02              |
| **Total**                 | **62**          |

All the sex-cord stromal tumors were diagnosed in women older than 40 years. Most common benign lesion in our study is surface epithelial tumor and in age group of 21-40 years (Table 5, Table 6).

Out of 91 patients 77 (84%) had symptoms at time of admission, while 14 were asymptomatic (incidental-pan hysterectomy done for other reason). Among 77 patients who had symptoms, dull aching dragging pain per abdomen was most common symptom (Table 7).
Table 5: Distribution of histopathological subtypes of tumors according to age at presentation.

| Age group       | Surface epithelial tumor | Sex-cord stromal tumor | Germ cell tumor |
|-----------------|--------------------------|------------------------|-----------------|
| Up to 20 yrs    | 3                        | 0                      | 4               |
| 21-40 years     | 33                       | 00                     | 12              |
| 41-60 years     | 19                       | 07                     | 06              |
| 41-60 years     | 07                       | 00                     | 00              |
| Total           | 62                       | 07                     | 22              |

Table 6: Distribution of cases according to clinical presentation.

| Clinical presentation                  | Number of cases |
|----------------------------------------|-----------------|
| Dull/dragging pain per abdomen          | 24              |
| Acute pain per abdomen                 | 16              |
| Abnormal bleeding per vaginum          | 04              |
| Lump per abdomen                       | 07              |
| Weight loss/anorexia                   | 00              |
| Constipation                           | 05              |
| Bleeding per rectum                    | 00              |
| Infertility                            | 01              |
| Other                                  | 04              |
| Asymptomatic                           | 14              |

Table 7: Distribution of tumors according to laterality of occurrence.

| Laterality | Number of cases |
|------------|-----------------|
| Right side | 52              |
| Left side  | 26              |
| Bilateral  | 13              |

Out of 91 cases 78(85%) cases were unilateral, where as 13 (15%) cases were bilateral .ou of 78 cases 52 cases were unilateral (Table 8).

Table 8: Distribution of cases according to gross dimensions.

| Size       | Number of cases |
|------------|-----------------|
| 0-5cm      | 11              |
| 6-10cm     | 34              |
| 11-15cm    | 24              |
| More than 15cm | 22       |

In this study, the most common age group was 21-40 years, and majority of benign lesions were more than 6cm in size; But in post menopausal women, an ovarian tumor less then 5cms in size is 95% benign in nature, if size is 5-10cm there is 88% likelihood of that neoplasm to be beign and if size over 10 cms ,only 40% such tumors are benign (Table 9). In this study, pan hysterectomy was the most common procedure for surgical management, followed by salpingo-oophorectomy.

Table 9: Distribution of ovarian tumors according to the surgical procedure adopted for management.

| Procedure                                      | Number of cases |
|                                               |-----------------|
| Pan hysterectomy                              | 31              |
| Total abdominal hysterectomy with salpingo-oophorectomy | 20              |
| Salpingo-oophorectomy                         | 23              |
| Oophorectomy                                  | 07              |
| Cystectomy                                    | 10              |

DISCUSSION

Out of total 150 cases majority of the cases 91 (60.67%) were benign, 53 (35.33%) were malignant and 6 (4.0%) were borderline. Findings of present study are in concordance with studies done by Ahmad et al, Gupta et al and Swamy et al.5,7

Surface epithelial tumors were the most common type (68.13%) of ovarian neoplasm in this study. This agreed with findings of other studies by Zaman et al, Gupta et al and Pilli et al.8,6,9 Germ cell tumors (24%) were the second most common type of tumors, followed by sexcord stromal tumors (7.69%) which agreed with findings of Pilli et al, Swamy et al, Jha et al and Gupta et al.9,7,10,6

Most of tumors in our study occurred in the age group of 21-40 years, that is similar to studies done by Pilli et al, Shah et al and Jha et al.9,11,10

The 84% patients studied had symptoms at presentation, out of which 26% of patient presented with dull/dragging pain; which agreed with the findings of Wasim et al, Yasmin et al and Shah et al.11,12,13

Laterality analysis showed right side (57%) involvement is more common than left side, this finding is similar with findings of Srinivas K et al, and Pilli et al.14,9

In this study, pan hysterectomy was the most common procedure for surgical management, which is agreed with findings of Shah et al.11

CONCLUSION

Majority of the cases were benign, surface epithelial tumors were the most common type of ovarian neoplasm in this study. Most of tumors in our study occurred in the age group of 21-40 years. Mucinous cystadenomas were most common benign surface epithelial tumor and most common benign tumors overall. All benign germ cell tumor were mature teratoma. All the sex-cord stromal tumors were diagnosed in women older than 40 years. Most common benign lesion in our study is surface epithelial tumor and in age group of 21-40 years. Majority of patients with ovarian neoplasm had symptoms at time of admission, and dull aching dragging.
pain per abdomen was most common symptom. Pan hysterectomy was the most common procedure for surgical procedure done as management.

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**Conflict of interest:** None declared

**Ethical approval:** The study was approved by the Institutional Ethics Committee

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