Tumors of Female Genital Tract: A Tertiary Care Hospital Based Comparative Analysis

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ABSTRACT

Introduction: The female genital tract is the site of large number of tumors of considerable diversity, some very common and some extremely uncommon. The embryology of the female genital tract is relevant to the histogenesis of various tumors arising in this region. This study is conducted to analyze the changing trends of female genital tract tumors in Government Medical College & Rajindra hospital, Patiala over a period of decade and compare it with national/international data.

Methods: This study was carried out on total 400 cases of female genital tract tumors, out of which, 200 consecutive cases of female genital tract tumors were from 2015 and results were compared with data taken from exactly similar study done in the department almost a decade ago to see emerging trends in frequency rates of tumors by the histological type within the site of origin. The tumors were classified according to WHO classification.

Results: A total of 400 cases were studied (biopsies & hysterectomy specimens) and histopathological results were analyzed. Out of 200 cases from 2015, 42 were malignant and 158 were benign. This was in comparison to 28 malignant tumors and 172 benign, out of 200 cases from 2005. Squamous cell carcinoma of cervix was most common invasive malignancy followed by ovarian carcinoma in both the groups. The major burden of benign disease was contributed by uterine lesion, leiomyoma in both the groups.

Conclusion: There has been increase in frequency rate of malignancy in female genital tract tumors in local region. Cervical carcinoma was the commonest female genital tract malignancy followed by ovarian cancer and endometrial cancer.

Keywords: Benign, Female genital tract, Malignant, Tumors.
Tumors of female genital tract have dissimilar pattern of distribution worldwide, with ethnic, environmental and geographical variations. Moreover their presentation varies from area to area. The most common type of female genital tract malignancies are cervical cancer, ovarian cancer and endometrial cancer. The other less common gynecological malignancies are vaginal carcinoma, vulval carcinoma, and fallopian tube cancer. As a group, they constitute the second commonest malignancy among females after the breast cancer.[2] Carcinoma cervix is the most common genital tract cancer followed by ovarian and endometrial malignancies in most countries.[3,4]

The present study reveals the relative frequencies of various benign tumors and cancers of female genital tract and also uncovers the changing trends in their frequencies in region over the decade.

Material and Methods
The study was conducted at the Department of Pathology, GMC, Patiala. Total 200 cases of female genital tract tumors received in 2015 (Group 1), were studied and results were compared with exactly similar study of 200 cases done in the department in 2005 (Group 2), to see emerging trends in frequency rates. World Health Organization (WHO) classification was used to do histopathological typing of the tumors. Data was entered in SPSS version 21 for sorting and analysis. Data was sorted for type of lesion (benign, malignant), different histopathological diagnosis and site of lesion.

Results
In the present study, out of 200 cases from year 2015, 158(79%) were benign and 42 (21%) were malignant in contrast to 172(86%) benign and 28(14%) malignant tumors in 200 cases from 2005. The most common site of benign tumors observed in the study was uterine corpus in both the groups, accounting for 150 cases in 2005 and 138 cases in 2015. Leiomyoma was the commonest benign tumor in both the groups. Most common site for malignant tumor was cervix followed by ovary and endometrium in both the groups (Table 1). Carcinoma cervix was the most common malignancy in both the groups accounting for 10(5%) cases in 2005 and 21(10.5%) cases in 2015. In both the groups, ovarian carcinoma was second most common malignancy accounting for 9(4.5%) and 12(6%) cases respectively. There was significant rise in frequency rate of malignant tumors over the period of ten years.

Squamous cell carcinoma was the most common type of cervical carcinoma and serous cyst adenocarcinoma was the commonest ovarian cancer in both the groups.

Table 1 Site wise distribution of malignant tumors of female genital tract

| Site of tumor          | No of cases (Group 1) Year 2005 | % of cases (Group 1) Year 2005 | No of cases (Group 2) Year 2015 | % of cases (Group 2) Year 2015 |
|------------------------|---------------------------------|--------------------------------|---------------------------------|--------------------------------|
| Cervix                 | 10                              | 35                             | 21                              | 50                             |
| Ovary                  | 09                              | 32                             | 12                              | 28.5                           |
| Uterus corpus          | 06                              | 21                             | 08                              | 19                             |
| Fallopian tubes        | 01                              | 3.5                            | -                               | -                              |
| Vagina                 | 01                              | 3.5                            | 01                              | 2.5                            |
| Vulva                  | 01                              | 3.5                            | -                               | -                              |
| Total                  | 28                              | 100                            | 42                              | 100                            |
Table 2 Distribution of tumors of female genital tract for year 2005 (Group 1)

| Site              | Nature of tumor | Histological Typing                      | No of cases | Percentage |
|-------------------|-----------------|------------------------------------------|-------------|------------|
| Cervix            | Benign          | Cervical leiomyoma                       | 02          | 1          |
|                   | Malignant       | Squamous cell carcinoma                  | 10          | 5          |
| Ovary             | Benign          | Serous cystadenoma                       | 06          | 3          |
|                   | Malignant       | Mucinous cystadenoma                     | 05          | 2.5        |
|                   |                 | Brenner tumor                            | 01          | 0.5        |
|                   |                 | Serous cystadenocarcinoma                | 04          | 2          |
|                   |                 | Mucinous cystadenocarcinoma              | 02          | 1          |
|                   |                 | Clear cell adenocarcinoma                | 01          | 0.5        |
|                   |                 | Malignant Brenner                       | 01          | 0.5        |
|                   |                 | Dysgerminoma                             | 01          | 0.5        |
| Uterus corpus     | Benign          | Leiomyoma                                | 147         | 73.5       |
|                   | Malignant       | H.Mole                                   | 03          | 1.5        |
|                   |                 | Adenocarcinoma                           | 02          | 1          |
|                   |                 | Leiomyosarcoma                           | 01          | 0.5        |
|                   |                 | Mixed mesodermal tumor                   | 01          | 0.5        |
|                   |                 | Endometrial stromal sarcoma              | 01          | 0.5        |
|                   |                 | Choriocarcinoma                          | 01          | 0.5        |
| Fallopian Tube    | Benign          | Hydatids of Morgagni                    | 03          | 1.5        |
|                   | Malignant       | Adenocarcinoma                           | 01          | 0.5        |
| Vagina            | Benign          | -                                        | -           | -          |
|                   | Malignant       | Squamous cell carcinoma                  | 01          | 0.5        |
| Vulva             | Benign          | Intradermal nevus                        | 01          | 0.5        |
|                   | Malignant       | Squamous cell carcinoma                  | 01          | 0.5        |
| Total             |                 |                                          | 200         | 100        |

Table 3 Distribution of tumors of female genital tract for year 2015 (Group 2)

| Site              | Nature of lesion | Histological typing                      | No of cases | Percentage |
|-------------------|------------------|------------------------------------------|-------------|------------|
| Cervix            | Benign           | Leiomyoma                                | 01          | 0.5        |
|                   | Malignant        | Squamous cell carcinoma                  | 21          | 10.5       |
| Ovary             | Benign           | Serous cystadenoma                       | 09          | 4.5        |
|                   | Malignant        | Mucinous cystadenoma                     | 04          | 2          |
|                   |                 | Dermoid cyst                             | 06          | 3          |
|                   |                 | Serous cystadenocarcinoma                | 07          | 3.5        |
|                   |                 | Mucinous cystadenocarcinoma              | 02          | 1          |
|                   |                 | Granulosa cell tumor                     | 02          | 1          |
|                   |                 | Mixed germ cell tumor                    | 01          | 0.5        |
| Uterus corpus     | Benign           | Leiomyoma                                | 136         | 68         |
|                   | Malignant        | H.Mole                                   | 02          | 1          |
|                   |                 | Adenocarcinoma                           | 07          | 3.5        |
|                   |                 | Choriocarcinoma                          | 01          | 0.5        |
| Fallopian tube    | Benign           | -                                        | -           | -          |
|                   | Malignant        | -                                        | -           | -          |
| Vagina            | Benign           | -                                        | -           | -          |
|                   | Malignant        | Squamous cell carcinoma                  | 01          | 0.5        |
| Vulva             | Benign           | -                                        | -           | -          |
|                   | Malignant        | -                                        | -           | -          |
| Total             |                 |                                          | 200         | 100        |

Discussion
The female genital tract comprises a complex structure with respect to embryology, histology and the potential for malignancy. The reported incidence of different types of tumors varies widely. Several studies on female genital tract tumors were done in the previous years to know incidence and prevalence of various tumors.[5-9] Majority of the tumors are benign, but the malignant tumors are on the rise with the passage of time.[10]
About 3/4th of the benign tumor burden was contributed by the uterine lesions in both the study groups. Most common of which was leiomyoma in both the groups. Second most common site for benign tumors was ovary in both the groups, accounting for 8 % in Group 1 and 9.5 % in Group 2. Serous cyst adenoma was the commonest benign tumor in both the groups. These findings were consistent with similar studies.  

In our study, cervical carcinoma was the commonest malignancy in both the groups. There were 10 cases (5%) in group 1 and 21 cases (10.5%) in group 2. Most common type of cervical cancer was squamous cell carcinoma in both the groups. Our study shows significant increase in the frequency of carcinoma cervix over a period of ten years but there was no change in pattern of common histological type. A study done by Nasreen F showed similar results.

Cervical cancer incidence is high and is increasing in women of Malwa region. Therefore the importance of established and accessible screening programs and awareness campaigns need more emphasis than it is being given currently. Over the past 50 years, organized screening programs in developed countries have contributed significantly to the decline in incidence and mortality from cancer of cervix. In contrast, largely due to lack of such programs in most parts of developing countries, cervical cancer remains one of the major killers of women in these countries.  

In our study, ovarian cancer was the second common genital tract malignancy accounting for 9 cases in group 1 and 12 cases in group 2. This result was in accordance with studies done by other authors. Papillary serous cyst adenocarcinoma was the commonest type of ovarian carcinoma in both the groups (Table 2 & 3). Ovarian cancer is reported to be the second major cause of death in women among female genital tract malignancies. About 70% of the patients with ovarian cancer present with the advanced stages of the disease due to non-specific symptoms of the disease and failure to detect the tumors early and absence of screening programs in our country.

**Conclusion**

Benign tumors are more common tumors of the female genital tract and are responsible for burden of gynaecological morbidity, and malignant tumors are on the rise with passage of time. Carcinoma cervix is the most common female genital tract cancer, followed by ovarian malignancy and endometrial carcinoma. The frequency of cervical and ovarian cancers among local population increased over the period of ten years. The frequencies of vulval, vaginal and fallopian tubes remained almost unchanged over the study period. Pattern and type of common cancers also remained unchanged.

The data presented in this study cannot be said to accurately represent community prevalence rates as cancer statistics go beyond hospital based data. However, it is recommended that policymakers view the menace of female genital tract cancers with special concern and appropriate screening and treatment methods are provided.

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