ORIGINAL RESEARCH PAPER

Volume-8 | Issue-3 | March-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

HISTOPATHOLOGICAL PROFILE OF GYNAECOLOGICAL NEOPLASMS IN MALWA REGION OF PUNJAB: A FIVE YEAR EXPERIENCE IN A TEACHING HOSPITAL

Pathology

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ABSTRACT

Introduction: The tumours of the female genital tract draw our attention due to their histologic diversity and significant cause of cancer morbidity and mortality worldwide. The most common type of female genital tract cancers are – cervical, ovarian and endometrial cancer while tumours of vagina, vulva and fallopian tubes are relatively rare. According to WHO, cervical cancer is the second most common cancer among women worldwide.

Aim: The aim of the study was to study the histologic diversity of tumours of the female genital tract in Southern Punjab as well as to evaluate the present scenario of tumours.

Material and methods: In the present all the neoplastic lesions confined to the female genital tract (uterus, cervix, ovary, fallopian tubes, vulva, and vagina) were included in the study while the non-neoplastic lesions of the female genital tract were excluded from the study. Routine H&E stained sections were studied.

Results: There were a total of 3438 tumours, out of which Benign tumours (55.3%) outnumbered the malignant ones (44.6%) with a tail of borderline tumours (0.3%). Carcinoma cervix (67.1%) was found to be the most common malignant tumour followed by ovarian carcinoma (16.4%) whereas in the category of benign tumours, Leiomyoma (87.3%) was the most common entity.

Conclusion: The tumours of the female genital tract show different patterns of distribution worldwide with ethnic, environmental and geographical variations. Carcinoma cervix is the most common gynaecological malignancy in the Southern Punjab while they are far less in the western world because of better screening programmes and vaccination against Human Papilloma virus (HPV). These studies need to be done to find out the differences in the epidemiological profile of cancers, to find out the incidence of cancer, and to study the risk factors associated with them. This may also suggest the preventive measures to deal with the increased incidence of cancer in this part of Punjab.

KEYWORDS

Leiomyoma, Squamous cell carcinoma, Adenocarcinoma, Cervix, Ovary.

INTRODUCTION:

Female genital tract tumours form an area of interest for Pathologists due to their vast histologic diversity and increasing trends in morbidity and mortality. The most common type of female genital tract cancers are cervical, ovarian and endometrial carcinoma while tumours of vagina, vulva and fallopian tubes are relatively rare. Tumours of female genital tract show different patterns of distribution worldwide, with ethnic, environmental and geographical variations. They account for ~10% of all cancers diagnosed in females.[1] As a group, they constitute the second commonest malignancy among females after the breast cancer.[2]

The Leiomyomas are the commonest gynaecological tumours with a prevalence of 70% to 80% in women who have reached the age of 50.[3] The Prevalence increases with age, peaking in women in their 40,s. Among the malignant tumours, carcinoma cervix is the most common genital tract cancer, accounting for ~ 80% of all cases worldwide, followed by ovarian and endometrial malignancies in most countries.[4,5] Evaluating the exact morphological type is essential in today's era of targeted therapy for cancer. Further studies on larger population groups are essential to evaluate the outcome with respect to histopathological typing, grading and staging of tumours.

MATERIALS AND METHOD

The present study is a prospective as well retrospective study conducted in the department of Pathology during the period 2013-2017. Clinical details regarding name, age, CR No., clinical presentation, site of lesion, provisional diagnosis were obtained from the requisition form submitted along with the surgical specimen in the department of Pathology.

All the neoplastic lesions confined to the female genital tract (uterus, cervix, ovary, fallopian tubes, vulva, vagina) were included in the study while the non-neoplastic lesions of the female genital tract were excluded from the study.

The grossing of the individual specimen pertaining to the female genital tract was done according to the standard protocols. After processing of the tissue specimens, routine hematoxylin & eosin stain was done.

RESULTS

The present five year study of tumours of the female genital tract showed a total of three thousand four hundred thirty eight cases (3438). Out of the total tumours of the female genital tract, benign tumours (55.3%) outnumbered the malignant tumours (44.6%) with a tail of borderline tumours (0.3%). A wide range of Age distribution was observed among the various tumours ranging from 8 years to 82 years with a mean age of 42.8 years. Leiomyoma (87.3%) was the most common benign tumour while squamous cell carcinoma was the leading cancer arising from cervix (66.7%), vulva (1.43%) and vagina (2.73%). Adenocarcinoma was the most frequent malignancy in the ovary (85.7%) and the uterus (91.8%).

Table No. 1: Site wise distribution of malignant tumours along with their histologic type (Total Malignant tumours = 1534)

S.No.	Site	Malignancy	No. of cases	Percentage
1.	**Corpus uteri**			11.2%
		Adenocarcinoma	158	
		MMMT	08	
		Choriocarcinoma	02	
		Undifferentiated ca	02	
		Clear cell carcinoma	02	
2.	**Cervix uteri**			67.1%
		Squamous cell ca	992	
		Adenocarcinoma	20	
		Adenosquamous	02	
		Undifferentiated Ca	10	
		Verrucous Ca	02	
		Malinant round cell tumour	02	
		Metastatic deposits	02	
3.	**Ovaries**			16.4%
A.	**Epithelial Tumours**			

		Adenocarcinoma	170	
		Serous cystadenocarcinoma	32	
		Mucinous cystadenocarcinoma	14	
B.	**Germ cell Tumours**			
		Dysgerminoma	06	
		Yolk sac tumour	04	
		Mixed germ cell Tumour	12	
		Immature Teratoma	02	
C.	**Miscellaneous**			
		MMMT	02	
		Metastatic deposits	10	
4.	**Vulva**			1.7%
		Squamous cell Ca	22	
		Verrucous Ca	02	
		Malignant mesenchymal Tumour	02	
5.	**Vagina**			3.52%
		Squamous cell Ca	42	
		Malignant mesenchymal tumour	04	
		Undifferentiated Ca	02	
		Papillary Adenocarcinoma	02	
		Clear cell carcinoma	02	
		Metastatic deposits	02	

Table No. 2: Site wise distribution of benign tumours along with their histologic types
(Total Benign Tumours = 1904)

S.No.	Site	Benign Tumour	No. of cases	Percentage
1.	**Corpus uteri**			90.23%
		Leiomyoma	1664	
		Hydatidiform mole	54	
2.	**Cervix uteri**	-	-	-
3.	**Ovaries**			8.92%
A.	**Epithelial Tumours**			
		Mucinous cystadenoma	42	
		Serous cystadenoma	36	
		Cystadenofibroma	20	
B.	**Sex cord stromal Tumour**			
		Adult Granulosa cell Tumour	18	
		Juvenile granulosa cell Tumour	02	
		Fibrothecoma	10	
		Fibroma	04	
C.	**Germ cell Tumours**			
		Mature cystic Teratoma	38	
4.	**Vulva**			0.73%
		Chondroid syringoma	02	
		Hidradenoma papilliferum	02	
		Vulvar syringoma	04	
		Squamous papilloma	04	
		Lipoma	02	
5.	**Vagina**			0.10%
		Neurofibroma	02	

Organ specific results are as under (Table No.1 & Table No.2)

1. **Corpus uteri :** It was the major contributor among the tumours of the female genital tract. Among the benign tumours, Leiomyoma (87.3%) was the most common entity followed by Hydatidiform mole (2.83%) respectively. Out of the malignant tumours of the uterus, Adenocarcinoma (91.8%) was the most common cancer followed by Malignant mixed mullerian tumour (4.65%), Choriocarcinoma (1.2%), clear cell carcinoma (1.2%) and undifferentiated carcinoma (1.2%) respectively.
2. **Cervix uteri :** All the tumours were malignant with Squamous cell carcinoma (96.3%) topping the list. A wide range of other tumours was seen comprising of undifferentiated carcinoma (0.98%), Adenocarcinoma (1.9%), Adenosquamous carcinoma (0.2%), Verrucous carcinoma (0.2%), Malignant round cell tumour (0.2%) and metastatic carcinomatous deposits (0.2%).
3. **Ovaries :** Epithelial Tumours were the most common entity among the ovarian neoplasms. Malignant ovarian neoplasms were almost double than the benign tumours. The ratio of malignant to benign tumours was 1.9:1. There were only 5 borderline tumours (0.3%). Majority of the malignant epithelial tumours were Post-chemotherapy specimens and were given the histological diagnosis of Adenocarcinoma. After the Epithelial tumours, Germ cell tumours (9.52%) form the second major group.
   There is also seen a miscellaneous category (4.76%) of ovarian neoplasms comprising of Metastatic tumours and Malignant mixed mullerian tumour.
4. **Vulva :** In vulva, the malignant tumours outnumbered the benign tumours with a ratio of 1.8:1. Squamous cell carcinoma (84.6%) was the main malignant neoplasm whereas benign adnexal tumours (0.42%) comprised of Chondroid syringoma, Hidradenoma papilliferum, vulvar syringoma.
5. **Vagina :** In vagina too, the malignant tumours outnumbered the benign ones with a ratio of 27:1 . Squamous cell carcinoma (77.8%) was the most common cancer in vagina.

DISCUSSION:
Out of a total of 3438 cancer cases, 2230 cases were from seven districts of Southern Punjab (district Muktsar, Firozpur, Bathinda, Faridkot, Fazilka, Moga & Mansa) also known as Malwa region. However, no large site-specific, population-based epidemiological study has been done so far. The Present five year prospective study showed a total of 3438 tumours of the female genital tract. The Benign tumours (55.3%) outnumbered the malignant tumours (44.6%) and the ratio of benign to malignant tumours was found to be 1.2:1.

Among the Benign tumours, Leiomyoma (87.3%) of the uterine corpus was the commonest tumour. Akinyemi BO, Adewoye BR (2004) also found fibroid to be the commonest benign tumour of the female genital tract which contributed about 70% to 80% of new growths. They found them to be the cause of significant morbidity in women of reproductive age group and when complicated could be a significant cause of mortality.[6]

While Malignant tumours accounted for 44.6% of the total female genital tract neoplasms and uterine cervix was the most common site for malignant tumours (66.7%) followed by Ovarian tumours (16.3%) and uterine tumours (11.2%). The results were almost similar with the study did by O. Kyari, H. Nggada and A. Mairiga (2004) in which cancers of the uterine cervix accounted for the majority (70.5%) followed by Ovarian tumours (16.3%) and uterine tumours (8.5%).[7]

Although breast cancer is the most common tumour affecting women worldwide, cancer of the uterine cervix is the most common in the developing countries.[8] Babarinsa et al in Ibadan found 62.7% of all female genital cancers to be cancer of uterine cervix.[9]

Squamous cell carcinoma (96.3%) was the commonest histopathologic type of cervical cancer followed by Adenocarcinoma (1.94%) in the present study. Similar trends were observed in studies did in other centres.[10,11]

Epidemiological studies have consistently indicated that the risk of cancer of uterine cervix is strongly influenced by measures of sexual activity.[12] Human Papilloma virus (HPV) DNA is found in 99.7% of

cervical cancers.[13] Tobacco smoking has been a well-known risk factor for cervical cancer.[14] Other factors include high number of live births, long term use (12 years or more) of oral contraceptives, lack of food containing beta carotene, vitamin C and to a lesser extent vitamin A.[12] The risk of cervical intraepithelial neoplasm (CIN) in HIV sero-positive women is at least five fold higher than in their sero-negative counterparts, and CIN in sero-positive women is more likely to progress and recur after treatment. [14]

After Carcinoma cervix, the second common female genital cancer was Ovarian neoplasms which accounted for 16.3% of the cancers. Exactly similar results of ovarian tumours (16.3%) were obtained by O. Kyari, H.Nggada and A. Mairiga. [7] Carcinoma of the ovary is now the most common malignant tumour found in gynaecology in the United Kingdom. [15]

Of the Ovarian cancers, about 85.7% were surface epithelial tumours. This was in contrast to a study did in Nigeria where surface epithelial tumours of ovary were only 40.5%.[16] The events leading to malignant transformation within these cells are uncertain, but risk factors that appear to be related to the development of Ovarian cancers include genetic, environmental and hormonal factors. [17]

Endometrial cancer accounted for 11.2% of the total female genital tumours. Adenocarcinoma (91.8%) was the predominant histopathologic entity. Endometrial cancer is the most common gynaecologic malignancy in western women with 41,000 new cases projected in the United States for 2006 [18]; whereas rates in developing countries and Japan are four to five times lower . In India, the rates are as low as 4.3 per 100,000. [19] In the western world, it is the fourth most common cancer in women after carcinoma of breast, colorectum, and lung. [20]

The tumours of female genital tract show rising trends and early mean age of presentation underlies the importance of screening programmes and deserve prompt institution at all levels of health care.

CONCLUSION:

The tumours of the female genital tract show different patterns of distribution worldwide with ethnic, environmental and geographical variations. Carcinoma cervix is the most common gynaecological malignancy in the developing countries while they are far less in the western world because of better screening programmes and vaccination against Human Papilloma virus (HPV). To conclude we recommend microscopic histopathological examination of every gynaecological mass as gross morphology of tumors and pre-operative imaging modalities like ultrasonography are not definitive. Targeted therapy depending on the type of tumor is essential to improve outcome in cases of ovarian tumors emphasizing the need for microscopic histopathological examination and grading in every case of ovarian tumor.

We also emphasize the need for follow up studies in order to assess the importance of pathological grading and staging with respect to clinical outcome.

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