

Histopathological spectrum of neoplastic tumours of female reproductive system –A two year study in a rural tertiary care centre in India

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Abstract

Aim: This study summarises the frequency of occurrence of various neoplastic lesions (benign and malignant) of the female reproductive system which includes uterus, cervix, ovaries, vagina, vulva and breasts in a rural tertiary care center in a period of two years.

Materials and Methods: This is a retrospective study carried out in TSM medical college, Lucknow. Two hundred and twenty three formalin fixed surgical specimens of female reproductive system from Sep 2016 to Sep 2018 were subjected for histopathological examination under light microscopy. All neoplastic lesions were included and non-neoplastic lesions were excluded from the study.

Result: A total of 223 cases representing various neoplastic lesions of female reproductive system were studied. Out of which 186 were benign and 37 were malignant. Among total neoplasms 71 cases were from breast, 12 cases were from cervix, 102 were from uterus, 37 cases were from ovaries and 1 case from vulva. Out of benign, majority were from uterus 98 cases (all leiomyomas). Out of malignant, maximum cases were of Infiltrating Ductal Carcinoma breast (10 cases) followed by cervical cancer (8 cases) and then carcinoma ovary (5 cases) followed by carcinoma endometrium (4 cases).

Conclusion: Benign tumour, leiomyoma is the commonest neoplasm in female reproductive system. Infiltrating ductal carcinoma breast is the commonest malignant tumour followed by cervical carcinoma.

Keywords: Benign tumour, Leiomyoma, Malignant tumour, Infiltrating ductal carcinoma breast.

Introduction

Female reproductive system includes uterus, cervix, ovaries, fallopian tube, vagina, vulva and breasts. Breast cancer and cervical cancers are the two commonly occurring cancers in women.¹ On a global basis out of the first eight ranking cancers in females, the cancers of the female reproductive system ranks as follows-1st breast, 2nd cervix, 8th body of uterus.² Cervical cancers were the commonest female genital tract malignancy followed by ovarian cancers and endometrial cancers.³

The present study is done to know the frequency of occurrence of various benign and malignant neoplastic tumours of the female reproductive system and also their changing trends in their frequency in that region.

Materials and Methods

A total of 223 cases of neoplastic lesions of female reproductive system which came to the histopathology lab from Sep 2016 to Sep 2018 were retrieved and reviewed. These cases included specimens of mastectomy, lumpectomy, hysterectomy, cervical biopsies and cystectomy. These specimens were previously fixed in 10% formalin, embedded in paraffin, sectioned and stained with H & E stains. Clinical information and presentation of the tumours, age of the patients and site of the tumours were noted from the requisition forms.

Results

During the two years period from sep 2016 to sep 2018, a total of 223 cases representing various neoplastic lesions of female reproductive system were studied. 152 cases were from female genital tract and 71 cases were from breast.

Overall 186 were benign and 37 were malignant. Among total neoplasms 71 cases were from breast, 12 cases were from cervix, 102 were from uterus, 37 cases were from ovaries and 1 case from vulva as shown in table 1. Out of benign, majority were from uterus 98 cases (all leiomyomas). Out of malignant, maximum cases were of Infiltrating Ductal Carcinoma breast (10 cases) followed by cervical cancer (8 cases) and then ovary (5 cases) followed by endometrium (4 cases).

Table 1: Shows the distribution of the neoplasms of female reproductive system in various organs:

Organs	Benign Cases	Malignant Cases	Total Cases
BREAST	55	16	71
CERVIX	01	11	12
UTERUS	98	04	102
OVARY	32	05	37
VULVA	-	01	01
Total	186	37	223

Most commonly involved organ in Female reproductive system was uterus (102 cases) with maximum number of benign neoplasms (98). Followed by breast (71 cases) with maximum number of malignant neoplasm (16 cases).

Table 2: shows the Agewise distribution of benign and malignant tumours of female reproductive system:

Age in years	Benign	Malignant
11-20	22	01
21-30	34	02
31-40	55	08
41-50	62	14
51-60	10	10
61-70	03	02

Both benign and malignant tumours were common in ages 41-50 years as shown in table 2.

Table 3: shows the age distribution based on site of tumours:

Age in years	Ovary	Cervix	Uterus	Vulva	Breast
11-20	09	-	-	-	12
21-30	10	-	02	-	22
31-40	05	04	40	-	17
41-50	07	07	53	-	11
51-60	06	01	06	01	06
61-70	-	-	01	-	03

Maximum number of uterine cases were in age groups of 41-50 years while maximum numbers of breast tumours were in ages 21-30years as shown in table 3.

Table 4: Shows the distribution of different malignant breast lesions:

Type of malignancy	Number of patients
Intraductal carcinoma in situ	04
Infiltrating ductal carcinoma	10
Lobular carcinoma	01
Papillary carcinoma	01

Infiltrating ductal carcinoma formed the majority cases of malignant neoplasms of breast.(10 cases) as shown in table 4.

Table 5: Shows the histological classification of malignancies of cervix in TSM medical college:

Histological classification	Number of cases
Invasive keratinising SCC	06
Lare Cell Non Keratinising SCC	01
Adenosquamous Carcinoma	01
Carcinoma In Situ(CIN III)	03

Cervical cancers were the most common female genital tract malignancies and squamous cell carcinoma formed the major bulk(7 cases) as shown in table 5

Table 6: shows the histological classification of ovarian neoplasms:

Histological types	Number of Cases
Serous cystadenoma	15
Mucinous cystadenoma	07

Mucinous cystadenocarcinoma	03
Brenner tumour	01
Dermoid cyst	09
Serous cystadenocarcinoma	01
Dysgerminoma	01

Maximum number of ovarian neoplasms were surface epithelial tumors and among that serous cystadenoma were the commonest (15 cases) as shown in table 6.

Discussion

Female reproductive system includes ovaries, fallopian tubes, uterus, cervix, vagina, vulva and breasts while female genital tract excludes breasts. Common sites for the occurrence of tumours are breast, ovaries, cervix and endometrium. Regular screenings, self examinations, patient awareness of family history and life style changes results in the decline of many types of these malignances.¹

Breast cancer is the most common non-skin malignancy in women. In their study by Khandekar s et al in 2018 they found that most common among total neoplasms was breast cancers which comprised 44.8%.² In our study also breast carcinoma formed the majority of all the neoplasms of female reproductive system (43.2%)

Majority of the tumours are benign and about three fourth of the benign tumour burden was contributed by uterine lesions in their study done by Aradhna et al in 2017.³ In our study also majority of benign neoplasms were constituted by uterine lesions which formed almost half of all benign neoplasms of female reproductive system. Most common of which was leiomyoma in both the studies.

In our study most common age for Leiomyoma was 40-50 years similar to a study done by Lahori M etal in 2016.⁴

In a study done by Seleye-Fubara DS et al in 2003 in Nigeria, they recorded cancers of the cervix as the commonest gynecological malignancies (63%).⁵ Similarly in our study also most common site of cancers of female genital tract was cervix followed by ovaries and then endometrium.

The commonest malignancy in female reproductive system was infiltrating ductal carcinoma in our study followed by carcinoma cervix. Similar to a study by Vani Dayanand et al in 2015.⁶ In females cancer breast (21.3%), cancer cervix(19.9%), ovary (6.3%) gall bladder (5.83%) and esophagus (2.83%) were the five leading sites.⁷

In our study squamous cell carcinoma was the most common invasive malignancy of the cervix and vulva while adenocarcinoma was most frequent in uterus and mucinous cystadenocarcinoma in ovary was the dominant malignancy. Similarly in a study done by Nasreen F, squamous cell carcinoma was the most common invasive malignancy of cervix and vulva while adenocarcinoma most common uterine malignancy.⁸

In a study done by Kyari et al in 2004 cancers of uterine cervix accounted for majority of all the female genital tract malignancies followed by ovarian cancers and uterine cancers.⁹ similar to our study.

Malignant lesions of the breast occurs mostly between 30-40 years and 50-60years in our study similar to a study done by Kiran HS et al who also found peak ages of malignant lesions between 30-50years.¹⁰

Malignant tumors of cervix and the uterus occurs most commonly in the fifth decade of life and ovarian cancers in fourth decades in a study done by Mohammed A et al in 2006.¹¹ In our study also carcinoma cervix and endometrial carcinoma were mostly seen in the ages 40-49 y and 50-59 y respectively.

Among the female genital tract malignancies ovarian cancers constituted 20.6% next to the cancer of the cervix (61.2%) noted in a study by Agrawal P et al in 2015.¹² In our study ovarian cancers constituted 23.8% next to the cancer cervix (52.3%) of all female genital tract malignancies. In a study done by Jeph et al in 2017, 67.2% Cases were of cervical cancers.¹³

Incidence of endometrial carcinoma in our study was 4/223 cases (1.8%). Similarly in a study done by Dalsanya et al in 2015, endometrial carcinoma was noted in 5/ 565 cases (0.88%).¹⁴

Squamous cell carcinoma was the commonest histologic type in cervical, vaginal and vulval cancers whereas serous adenocarcinomas and endometrioid adenocarcinoma was commonest histological types in ovary and endometrium respectively.¹⁵ Similarly in our study also commonest malignancy in female genital tract was squamous cell carcinoma in cervix, mucinous adenocarcinoma in ovary and villoglandular adenocarcinoma in endometrium.

Conclusion

Among the various neoplasms of female reproductive system, leiomyoma of the uterus was the commonest benign tumour. Overall, infiltrating ductal carcinoma of breast was the commonest malignant tumours in female reproductive system followed by carcinoma cervix. And among all female genital tract malignancies carcinoma cervix was the commonest.

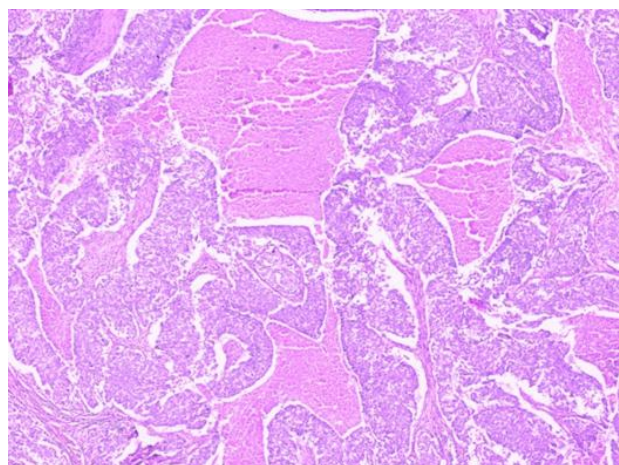


Fig. 1: Infiltrating Ductal Carcinoma Breast (H & E stain 20x)

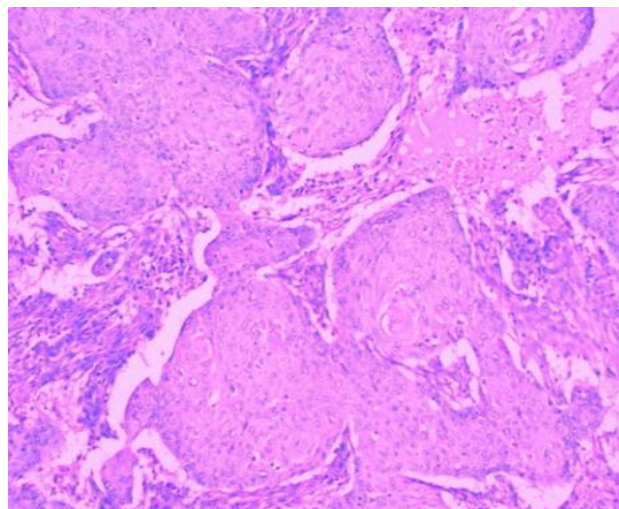


Fig. 2: Squamous Cell Carcinoma of cervix(H&E 20X)

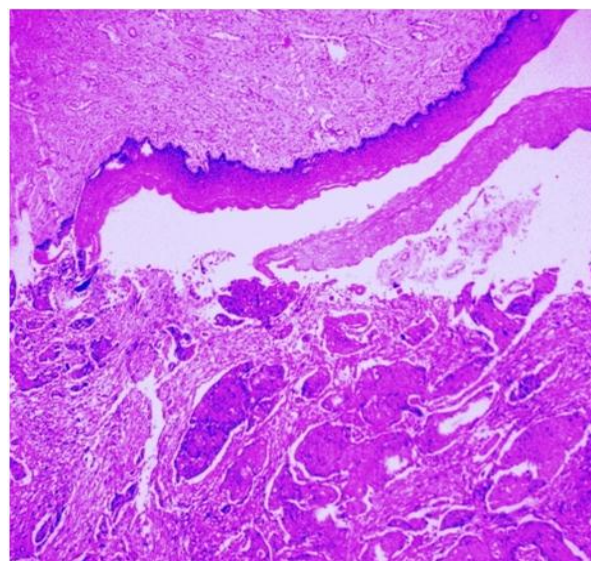


Fig. 3: squamous cell carcinoma cervix(H&E 40X)

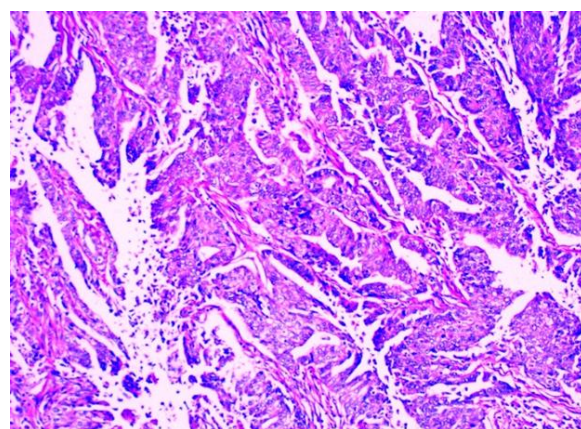


Fig. 4: Villoglandular variant of endometrial adenocarcinoma (H&E 20x)

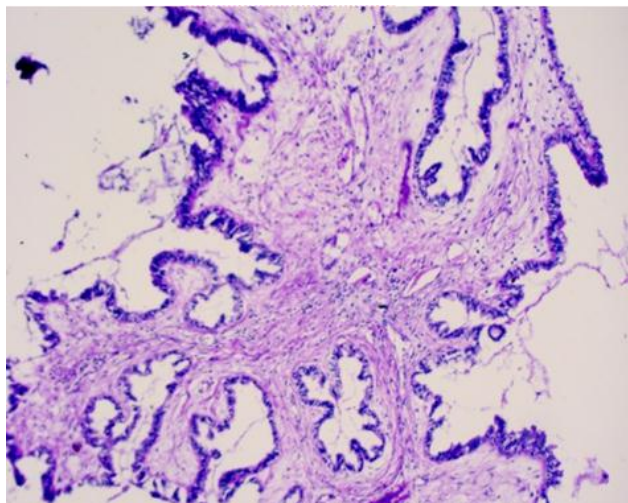


Fig. 5: Mucinous cystadenocarcinoma of Ovary (H & E 20X)

Conflict of Interest: None.

References

1. Singh M, Jha Kumar K, Paudyal P, Kafle S. "Histopathological spectrum of neoplastic lesions of female reproductive system- a two year experience in Eastern Nepal." *Int J Res Med Sci* 2018;6(2):426-30
2. Khandekar S, Lodha N. "Histopathological spectrum of neoplastic lesions of female reproductive system seen at a Rural Tertiary Care Centre in India." *Int J Biomed Adv Res* 2018;9(9) :328-31
3. Sharma A, Garg P, Kundal R. "Tumors of Female Genital Tract: A Tertiary Care Hospital Based Comparative Analysis." *J Med Sci Clin Res* 2017;5(5):21938-42
4. Lahori M, Malhotra A, Sakul, Khajuria A, Goswami K. "Clinicopathological spectrum of uterine leiomyomas in a state of Northern India: a hospital based study." *Int J Reprod Contracept Obstet Gynecol* 2016;5(7):2295-99
5. Seleye-Fubara D, Uzoiwe A S. "Pattern of primary female genital cancer in Port-Harcourt, Nigeria : A 12 year Review." *Sahel Med J* 2003;6(2):34-9
6. Dayanand V, Shashidhar HB, Sandhya M, Ashwini NS, Bharathi M. "Spectrum of Breast neoplasms in Females: A 10 years Histopathological Review in a tertiary care Hospital." *Int J Sci Study* 2015;3(2):79-84
7. Narula R, Arya A, Narula K, Agarwal K, Agarwal A, Singh S et al. "Overview of Benign and Malignant Tumours of Female Genital Tract." *J Appl Pharm Sci* 2013;3(1):140-149
8. Nasreen F. "Pattern of Gynaecological Malignancies in Tertiary Hospital." *J Post Grad Med Inst* 2002;16(2):215-220
9. Kyari O, Nada H, Mairiga A. "Malignant Tumours of Female Genital Tract in North Eastern Nigeria." *East Afr Med J* 2004;81(3):142-5.
10. Kiran HS, Shetty J Rao C. "Histomorphological Spectrum of Breast Lesions." *J Evol Med Dent Sci* 2016;5(54):3577-81
11. Mohammed A, Ahmed S, Oluwole O, Avidime S. "Malignant Tumours of the Female Genital Tract in Zaria, Nigeria: Analysis of 513 cases." *Ann Afr Med* 2006;5(2):93-6.
12. Agrawal P, Kulkarni D, Chakrabarti P, Chauraiya S, Dixit M, Gupta K et al. "Clinicopathological Spectrum of Ovarian Tumors: A 5 Year experience in a tertiary health care center." *J Basic Clin Reprod Sci* 2015;4(2):90-96
13. Jeph V, Adreena, Garg P, Mahabole K. "Incidence of Different Malignancies in Female Genital Tract : Study in 504 Women in Rural Population." *Int J Contemp Med Research* 2017;4(1):284-286
14. Dalsaniya M, Choksi T, Shrivastav A, Agnihotri A. "Retrospective and prospective histopathological study of tumors and tumor like lesions of female genital tract." *Int J of Med Sci and Public Health* 2015;4(11):1602-1604
15. Dhakal HP, Pradhan M. "Histological Pattern Of Gynecological Cancers." *J Nepal Med Assoc* 2009;48(176):301-5.

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