International Journal of Medical and Health Sciences

Journal Home Page: http://www.ijmhs.net ISSN:2277-4505

Original article

Benign and malignant tumors of cervix: 10 years study

A. Arya[1*], R. Narula[2], S. Singh[3], K. Narula[4]

[1]Associate Professor, Department of Pathology, [2]Associate Professor, [3]Senior Resident, Department of Orthopaedics, [4]Demonstrator, Department of Community Medicine, Rohilkhand Medical College, Bareilly. (U.P), India, Pin - 243006.

ABSTRACT

Background: Cervix is part of female reproductive system. Cervix connects the upper body of the uterus to the vagina.The cervix is very commonly affected organ by a variety of infectious, inflammatory and neoplastic diseases. This study was undertaken to focus on uterine cervix tumors, including benign and malignant tumors. The most common uterine cervix benign tumors are leiomyoma. Carcinoma cervix is the commonest cancer among Indian women, accounting for 1/5th of the total cancer incidence. **Aim:** This study was undertaken to observe prevalence of benign and malignant tumour of the cervix, age at presentation and histological types according to WHO. **Methods:** This present study was conducted in one of the tertiary care hospital of Meerut city. This study was carried out on 539 cases of female genital tract tumor, out of which 198 cases of cervix during a period of ten years. For the present study all blocks, slides, punch biopsy, hysterectomy specimen, endocervical curettage, cervical amputation, conization of uterine cervix tumor were included. The chi square test is applied as test of significance. **Results:** There were 539 Female genital tract tumour diagnosed out of which 198 were tumour of the cervix. Leiomyomas is most common benign tumour of cervix where as squamous cell carcinoma 183(94.8%) and adenocarcinoma 7(3.6%) of the uterine cervix were the main malignant histological types. In age group of 31-40 years maximum cases of benign tumor of uterine cervix was observed whereas cervical cancer was commonest between the ages of 51-60 years. There was no patient with carcinoma of the cervix below the age of 20 years. **Conclusion:** The present study data can be used for estimation of load of the benign and malignant tumours of uterine cervix. Leiomyomas is most common benign tumour of cervix where as squamous cell carcinoma and adenocarcinoma of the uterine cervix were the main malignant histological types.

KEYWORDS: Gynaecological, Benign, Malignant, Tumor, Cervix.

INTRODUCTION

Gynaecological cancers are a group of different malignancies of the female reproductive system. The most common types of gynaecologic malignancies are cervical cancer, ovarian cancer, and endometrial cancer. There are other less common gynaecological malignancies including cancer of the vagina, cancer of the vulva, gestational trophoblastic tumour and fallopian tube cancer.

Cervix is part of female reproductive system. Cervix connects the upper body of the uterus to the vagina. The endocervix (the upper part which is close to the uterus) is covered by glandular cells, and the ectocervix (the lower part which is close to the vagina) is covered by squamous cells. The transformation zone refers to the place where these two regions of the cervix meet [1].

Carcinoma cervix is the commonest cancer among Indian women, accounting for 1/5th of the total cancer incidence. Age at marriage has been recognized as a major risk factor associated with cervical carcinoma. There are several types of cervical cancer, classified on the basis of where they develop in the cervix. Cancer that develops in the ectocervix is called squamous cell carcinoma, and around 80-90% of cervical cancer cases are of this type [2]. Cancer that develops in the endocervix is called adenocarcinoma. In addition, a small percentage of cervical cancer cases are mixed versions of the above two, and are called adenosquamous carcinomas or mixed carcinomas. There are also some very rare types of cervical cancer, such as small cell carcinoma, neuroendocrine carcinoma etc.

Aims &Objectives

The present study was undertaken with the following aims and objectives:

1. To study the prevalence of benign and malignant tumour of the cervix and its correlation with age of patient.
2. To classify cervical tumour according to WHO classification.

MATERIALS AND METHODS

This study was carried out on 539 cases of female genital tract tumor, out of which 198 cases of cervix tumour during the period of 1997 to 2006 (10 years) at Department of Pathology and Department of obstetrics and gynaecology at LLRM Medical College, Meerut. This study was included all the material like blocks ,slides, punch biopsy, hysterectomy specimen, endocervical curettage, cervical amputation, conisation in Pathology Department. All the tumours of uterine cervix involving ectocervix and endocervix will be included.

The tumour arising from uterus, vulve, vagina and parametrium and cervix biopsy with non specific finding like cervicities, premalignant lesion were excluded from the study. The excised specimen were fixed in 10% formalin .After gross examination, sections from representative areas were taken for histopathological diagnosis of the tumour. After sectioning tissue was processed in an automated tissue processor for 16-18 hours of overnight schedule. After processing Paraffin blocks were made. Paraffin sections of 5mm were cut and stained with hematoxylin and eosin technique. Sections were studied microscopically and final diagnosis of the tumors was made on the basis of morphologic feature and the tumors were classified according to WHO classification. This analysis was done to find out the prevalence of cervix tumour and its correlation with age of patient.

Statistical analysis

The data thus collected was computerized in specific programme developed on Microsoft excel 2007 soft ware. The data base so prepared was analyzed with the help of SPSS statistical software and the results were transferred to predesigned classified tables prepared according to the aims and objectives of the study. Valid inference was drawn from the information and the results were discussed with the available studies. Analysis of chi square test was applied as a test of significance. Level of significance was taken as 0.05.

RESULTS

There were 15320 specimens received during the period of ten years in the department of Pathology, LLRM Medical College, Meerut; 539 were tumour of female genital tract while 198 were tumour of the cervix.[Table 1]Out of 539 Female genital tumors, 272 (50.4%) were benign and 267 (49.5%) were malignant tumors. Most common site in benign tumours of female genital tract was uterine corpus 194 cases (70.8%), followed by ovary 71 cases (25.9%), cervix 5 cases (1.8%) and 2 cases (0.7%) were from vagina. Most common site in female genital tract malignant tumour was cervix 193(72.2%) cases, followed by ovary 32 (11.9%) cases, uterus 17(6.3%) cases, vagina 16(5.9%) cases, vulva 7(2.6%) cases and 2 (0.7%) cases from fallopian tubes.

Table 1: Site distribution of benign and malignant tumours of female genital tract

Site	Benign	Malignant
Uterine corpus	194	17
Cervix	5	193
Ovary	71	32
Vagina	2*	16
Vulva	0	7
Fallopian tube	0	2*
Total	272	267

*Yate's correction, $X^2 = 361.624$, df = 5, P< 0.05 significant

Out of 5 cases of benign tumour of cervix, 3 were leiomyoma and 2 were squamous papilloma. A total of 193 cases of malignant tumour of cervix were diagnosed, out of which 183(94.8%) cases were squamous cell carcinoma, 7(3.6%) cases of Adenocarcinoma and 1(0.5%) case of Adenosquamous carcinoma[Table-2]. Out of 183 cases of squamous cell carcinoma, 30(15.5%) cases were keratinising, 142(73.5%) cases were non-keratinising, 7 (3.6%) cases of squamous cell carcinoma with clear cell type and 12 (6.2%) cases of papillary squamous cell carcinoma. [Table-3] Total 5 cases of benign tumours of cervix were observed in age group of 31-50 years. Whereas maximum number of cases of malignant tumour of cervix 60(31.0%) was observed in the age group of 51-60 years followed by 55(28.4%) cases in the age group of 41-50 years of age, 35(18.1%) cases in the age group of 31-40.There are 21(10.8%) cases under 30 years and 22(11.3%) cases in the age of 61-80 years.

Table 2: Histological distribution of Benign and Malignant tumors of uterine cervix

Histological type	Benign		Malignant	
	Number	Percentage	Number	Percentage
Leiomyoma	3	60%	-	-
Squamous papilloma	2	40%	-	-
Carcinoma Epidermoid Squamous cell carcinoma Keratinising Squamous cell carcinoma non-Keratinising Papillary Squamous cell carcinoma Squamous cell carcinoma with clear cell type Adenocarcinoma Adenosquamous	-	-	193 183 30 142 12 7 7 1	 94.8% 15.5% 73.5% 6.2% 3.6% 3.6% 0.5%
Total	5		193	

Table 3: Age wise distribution of benign and malignant tumors of uterine cervix

Age	Benign		Malignant	
	Number	Percentage	Number	Percentage
Up to20 yrs	-	-	-	-
21 – 30	-	-	21	10.8%
31 – 40	4	80%	35	18.1%
41 – 50	1	20%	55	28.4%
51 – 60	-	-	60	31.0%
61 – 70	-	-	19	9.8%
71 – 80	-	-	3	1.5%
Total	5	-	193	

DISCUSSION

The female genital tract is most common site for tumours in female. In present study total 539 tumours were studied out of which, 272 (50.4%) were benign and 267 (49.5%) were malignant of female genital tract tumour. All the cases selected in this study were microscopically confirmed. In our study benign tumours of female genital tract were 70.8% in uterine corpus, 25.9% in ovary, 1.8% in cervix and 0.7% in vagina. There was no benign tumours in the vulva and fallopian tubes in present study .Similarly Shi et al [3] and Heinemann et al [4] also reported that most common site of benign tumours were uterus after that ovary.

Out of 267 cases of malignant tumour of female genital tract in our study, maximum number of cases were found in cervix (72.2%), next frequent site was ovary (11.9%) followed by uterine corpus (6.3%), vagina (5.9%), vulva (2.65) and fallopian tubes (0.7%) cancer which is similar to the observation by other authors.[5],[6],[7] Whereas Nwosu et al [8] reported that cervical cancer followed by endometrial cancer, ovary, vulva and vagina cancer.

Tiltman AJ et al [9] studied that benign tumour of cervix found that leiomyomas of the cervix are rare tumour. They analysed 661 total hysterectomy specimens macroscopically and microscopically. Cervical leiomyoma were present in only 4 cases (0.6%).Similarly in our study leiomyomas in cervix rare tumor. Most patient of leiomyoma was in the age group of 31- 40 years of age. Similar results were found by Rammen- Rommani et al [10] in his study.

A total of 193 cases of malignant tumour of cervix were documented in this study period, out of which squamous cell carcinoma comprised of 183(94.8%), adenocarcinoma 7(3.6%) and adenosquamous carcinoma 1(0.5%). Out of 183 (94.8%) squamous cell carcinoma, 15.5% were keratinizing type, 73.5% were non-keratinizing type, 6.2% were papillary squamous cell carcinoma and 3.6% were clear cell variant of squamous cell carcinoma. This result were concordance with NCRP 2001[11] where 90% of cases were squamous cell carcinoma and 2 -4% adenocarcinoma respectively. While in United States squamous cell carcinoma accounted for 77% of cervical cancers, only 6.2% were keratinizing type and 6.6% non-keratinizing type, remained being squamous cell carcinoma NOS. [12] Uzoigwe et al [13] found 70.2% cases of squamous cell carcinoma and 14.9% cases of adenocarcinoma. In our study malignant tumors began to rise in late twenties and reached a peak at 51– 60 years but cases were also seen even in eight decade. Similar results were found by other authors. [11], [12], [13], [14], [15]

CONCLUSION

The present study provides valuable information about the state of benign and malignant tumours of cervix in India. Leiomyomas is most common benign tumour of cervix where as squamous cell carcinoma and adenocarcinoma of the uterine cervix were the main malignant histological types.The benign tumours were significant enough in their clinical presentations, as they caused a considerable amount of morbidity and loss of work hours, which was thus a financial burden.Whereas malignant tumour required urgent establishment of management facilities to reduce the incidence of cervical cancer and its attendant morbidity and mortality.Because majority of cervical cancer prevented through screening.

REFERENCES

1. American Cancer Society. "Detailed guide: Cervical Cancer ACS website. http://www.cancer.org /docroot/CRI/content/CRI_2_4_1X_what_is_cervical_cancer_8.asp,last accessed November 18, 2009.
2. WHO/ICO Information Centre on Human Papilloma Virus (HPV) and Cervical Cancer (a). Human Papillomavirus and Related Cancers in India. Summary Report 2009. Available at http://www.who.int/hpvcentre/en/, last accessed November 18, 2009.
3. Shi YE, Xie X, Zhao CL. Histological diagnosis and clinical features in borderline smooth muscle tumors of the uterus. Zhonghua Fu Chan Ke Za Zhi 1994; 29(4):201-4,251.
4. Heinemann K, Thiel C, Mohner S, Lewis MA, Raff T, Kuhl-Habich D, et al. German Cohort Study on Women's Health Benign gynecological tumors: estimated incidence. Results of the German Cohort Study on Women's Health. Eur J Obstet Gynecol Reprod Biol 2003; 107(1):78-80.
5. Nkyekyer K. Pattern of gynaecological cancers in Ghana. East Afr Med J 2000; 77 (10): 534-8.
6. Chhabra S, Sonak M, Prem V, Sharma S. Gynaecological malignancies in a rural institute in India. J Obstet Gynaecol 2002; 22(4): 426-9.
7. Kyari O, Nggada H, Mairiga A. Malignant tumours of female Genital tract in North Eastern Nigeria . East Afr Med J 2004; 81(3): 142-5.
8. Nwosu SO, Anya SE. Malignancies of female genital tract at the University of Port Harcourt Teaching Hospital: a ten year review--1990-1999.Niger Postgrad Med J 2004:11(2):107-9.
9. Tiltman AJ. Leiomyomas of the uterine cervix: a study of frequency. Int J Gynecol Pathol 1998; 17(3):231-4.
10. Rammeh-Rommani S, Mokni M, Stita W, Trabelsi A, Hamissa S, Sriha B, et al. Uterine smooth muscle tumors: retrospective epidemiological and pathological study of 2760 cases. J Gynecol Obstet Biol Reprod (Paris) 2005; 34(6):568-71.
11. National Cancer Registry Programme. Consolidated Report of the Population Based Cancer Registries 1990-1996: Incidence and distribution of cancer. Indian Council of Medical Research, New Delhi, 2001.Available at www.icmr.nic.in/ncrp/ncrp_p/cancer_reg.pdf.
12. Platz VE, Benda JA: Female genital tract cancer: Cancer 1995; 75: 270 – 94.
13. Uzoigwe SA, Seleye-Fubara D. Cancer of the uterus cervix in Port Harcourt, Rivers State -- a 13-year clinico-pathological review. Niger J Med 2004; 13(2):110-3.
14. Gajalakshmi C K, Shanta V.Association between cervical and penile cancers in Madras, India. Acta Oncol, 1993; 32(6): 617-20.
15. Murthy NS, Chaudhry K, Saxena S. Trends in cervical incidence – Indian scenario. Eur J Cancer Prev 2005; 14(6): 513 – 8.

---

*Corresponding author: Dr. Anjana Arya
E-Mail: anjanaarya.singh15@gmail.com