

# Retrospective and prospective histopathological study of tumors and tumor-like lesions of female genital tract

Miral Dalsaniya, Tejas S Choksi, Atul Shrivastav, Ashok S Agnihotri

<sup>1</sup>Department of Pathology, CU Shah Medical College, Surendranagar, Gujarat, India.  
Correspondence to: Atul Shrivastav, E-mail: atulshri@ymail.com

Received February 27, 2015. Accepted July 16, 2015.

## Abstract

**Background:** Carcinoma of female genital tract is the major public health problem in developing countries such as India and other countries.

**Objective:** (1) To obtain the overall incidence of various tumor and tumor-like lesions of female genital tract in the Saurashtra region; (2) to obtain the age incidence of all tumor and tumor-like lesions of female genital tract; and (3) to classify various female genital tract tumors based on cell type and differentiation.

**Materials and Methods:** A total of 565 specimens of various types of tumors were received during the 3-year duration from various clinical departments and hospitals.

**Result:** Of the 565 specimens, the distribution of lesions were benign (63%), malignant (14%), tumor-like lesions (22%), and borderline category (0.9%).

**Conclusion:** Although benign tumors were present in the majority of cases, malignant cases were also present in significant numbers, and carcinoma cervix was the most common of all female genital tract malignancies.

**KEY WORDS:** Female genital tract, cervix carcinoma, ovarian carcinoma, endometrial carcinoma

## Introduction

Cancer is one of the major public health issues with the incidence of more than 800,000 new cases every year in India. The estimation reveals that of the 2.5 million cases reported in the country, approximately 400,000 deaths are caused by cancer. Indian women reveal greater prevalence of female genital tract and breast cancers.<sup>[1]</sup>

The female genital tract includes the ovaries, fallopian tubes, uterus (body/corpus and cervix), vagina, and vulva. Cervical cancer is one of the leading cancers in women worldwide, second only to breast cancer; 80% of new cases occur in developing countries.<sup>[2]</sup> In India, the data obtained from the

population-based registries under the National Cancer Registry Program show that the four organs, namely, cervix uteri, breast, corpus uteri, and ovaries, are the most affected organs (about 50%–60%), of all types of cancers among women.<sup>[1]</sup>

Several studies were done in the previous years for the incidence and prevalence of various types of tumors in the female genital tract.<sup>[3–6]</sup> We also undertook this study to better understand the problem burden in our region.

## Materials and Methods

This study was carried out in the Department of Pathology of CU Shah Medical College Hospital of Saurashtra region. The specimens were received from both Obstetrics and Gynecology and Surgery Departments of the college; some specimens were received from private hospitals, various talukas, and nearby district referral hospitals of this region.

The study period included 3 years (January 2010 to December 2013). A total of 565 specimens were received during the study period. All the available records of this period in the Department of Pathology were studied. The various types of specimen included were from procedures such as

Access this article online	
Website: <a href="http://www.ijmsph.com">http://www.ijmsph.com</a>	Quick Response Code: 
DOI: 10.5455/ijmsph.2015.27022015329	

International Journal of Medical Science and Public Health Online 2015. © 2015 Atul Shrivastav. This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

panhysterectomy, hysterectomy, oophorectomy, cystectomy, endometrial biopsy, and dilation and curettage (D&C) and cervical biopsy materials. These specimens were fixed by immersing in 10% formalin. After that, a gross examination was done, and sections from representative areas were taken for histopathological diagnosis. The sections were processed by serial alcohol dehydration. Paraffin blocks were prepared; sections were taken on slides, stained with hematoxylin and eosin, and mounted using a mixture of distyrene, a plasticizer, and xylene (DPX). Lesions were classified according to the WHO classification for tumor and tumor-like lesions of the female genital tract.

**Table 1:** Distribution according to age in study group

S no.	Age in years	No. of cases	Percentage
1	10–20	10	1.77
2	21–30	77	13.63
3	31–40	195	34.51
4	41–50	210	37.17
5	51–60	60	10.62
6	61–70	6	1.06
7	≥71	7	1.24
Total		565	100

**Table 2:** Histopathological typing of tumors female genital tract

S. no.	Tumor type	No. of cases	Percentage
1	Benign	355	62.83
2	Borderline	5	0.88
3	Malignant	79	13.98
4	Tumor-like lesions	126	22.31
Total		565	100

**Table 3:** Distribution of benign, malignant, and tumor-like lesions in various age group

S. no.	Age in years	Benign	Malignant	Tumor-like lesions
1	10–20	3	1	6
2	21–30	53	7	17
3	31–40	112	32	51
4	41–50	141	27	37
5	51–60	40	10	10
6	61–70	3	2	1
7	≥71	3	–	4

**Table 4:** Comparison of different pathology of ovary by various authors

S no.	Study	Surface epithelial tumor (%)	Germ cell tumor (%)	Sex-cord stromal tumor (%)	Metastatic tumors (%)
1	Rajshree <i>et al.</i> , <sup>[5]</sup> Karnataka	67.30	23.71	8.33	0.64
2	Bhattacharya <i>et al.</i> , <sup>[6]</sup> Bombay	61.60	24.08	6.8	–
3	Gilani <i>et al.</i> , <sup>[10]</sup> Iran	67.10	17.10	9.20	6.60
4	Jha <i>et al.</i> , <sup>[11]</sup> Nepal	52.20	42.20	3.10	2.50
5	Our study	50.98	31.37	11.76	5.89

Prior approval for this study was taken from our institutional ethical committee. The statistical analysis was done by using SPSS software, version 8.

## Result

During the study period, a total of 565 specimens were received from the Obstetrics and Gynecology and Surgery Departments. Our observations are mentioned in Tables 1–6.

Table 1 shows the age-wise distribution of patients, which ranged from 16 to 80 years. The maximum number of patients [210 (37.17%)] was in the age group of 41 to 50 years.

In this study, of the total 565 specimens, the maximum number of cases were benign [355 (62.83%)], followed by 126 (22.31%) tumor-like lesions, 79 (13.98%) malignant cases, and 5 (0.88%) cases with borderline malignant potential [Table 2]. Age distribution of lesions according to their nature (benign and malignant) is given in Table 3.

Tables 4–6 show the comparison of findings of various studies with our study. Observations were discussed to fulfill the aims and objectives of this work done.

**Table 5:** Comparison of percentage distribution of endometrial carcinoma in other studies with this study

S. no.	Study	No. of cases	Percentage
1	Molitor <sup>[12]</sup>	4/281	1.42
2	Naik <i>et al.</i> , <sup>[13]</sup>	10/108	9.61
3	Watt and Kimbrough <sup>[14]</sup>	3/1,000	0.30
4	Our study	5/565	0.88

**Table 6:** Comparison of percentage distribution of carcinoma of cervix in other studies with this study

S. no.	Study	No. of cases	Percentage
1	Molitor <sup>[12]</sup>	1/281	0.36
2	Watt and Kimbrough, <sup>[14]</sup>	7/1000	0.7
3	Lal and Gupta <sup>[15]</sup>	3/35	8.57
4	Allahbadia <i>et al.</i> , <sup>[16]</sup>	3/100	3
5	Our study	21/565	3.71

## Discussion

Tumors of the female genital tract along with other surgical specimens from gynecological operation theatres create the biggest burden of biopsy reporting at the Department of Pathology. The female genital tract comprises a complex structure with respect to embryology, histology, and the potential for malignancy. Majority of the tumors (>90%) are benign, but the malignant tumors are on the rise with the passage of time.<sup>[7]</sup>

The reported incidence of different types of tumor varies widely. The comparisons of various studies on female genital tract tumor conducted by several authors in India and abroad are presented in Tables 4–6.

According to a recent study by Wasim et al.,<sup>[8]</sup> it was shown that about one-fourth of the ovarian tumors were malignant and the remaining benign. Another study<sup>[9]</sup> showed that, of the total ovarian lesion, only one-fifth were malignant. Table 4 showed that surface epithelial tumors were the highest, followed by germ cell tumor, sex cord stromal tumor, and metastatic tumors. Incidence of metastatic tumor of the ovary was relatively higher in this study and in the study carried out by Gilani et al.<sup>[10]</sup> in Iran. Incidence of germ cell tumor was relatively higher in study done by Jha and Karki.<sup>[11]</sup>

In this study, Table 5 shows that the incidence of carcinoma of endometrium was 0.88% (5 cases of the total 565 cases). In the study by Molitor,<sup>[12]</sup> it was 4 cases (1.42%) of the total 281 cases. The results in the study by Naik et al.<sup>[13]</sup> showed 10 cases (9.61%) of the total 108 cases.

The incidence of carcinoma of cervix in this study was 3.71 % [Table 6]. Low incidence was noted in the studies carried out by Watt and Kimbrough<sup>[14]</sup> and by Molitor,<sup>[12]</sup> which were 0.7% and 36%, respectively. High incidence was noted in the studies carried out by Lal and Gupta<sup>[15]</sup> and by Allahbadia et al.,<sup>[16]</sup> which was 8.57% and 3%, respectively.

## Conclusion

Benign tumors are the most common tumor of the female genital tract, and malignant tumors are on the rise with age. Most of the tumors occur in the age group of 31–50 years. This burden can be reduced by implementing screening method of female genital tract such as Papanicolaou (Pap) smear study at timely interval in case of cervical cancer.

## References

1. National Cancer Registry Program. *Consolidated Report of Hospital Based Cancer Registries 2001-3*. New Delhi, India: Indian Council of Medical Research, 2007.
2. Stewart BW, Kleihues P (Eds.). *Cancers of the female reproductive tract*. In: *World Cancer Report*. Lyon, France: IARC Press, 2003.
3. Gershenson DM, Luna TG, Malpica A, Baker VV, Whittaker L, Johnson E, et al. Ovarian intraepithelial neoplasia and ovarian cancer. *Obstet Gynecol Clin North Am* 1996;23(2):475–543.
4. Cramer D. Epidemiologic aspects of gynaecologic oncology unit "A" basic science aspect. In: *Gynaecologic Oncology*, Chapter 8, Knapp RC, Berkowitz R (Eds.). New York, NY: McGraw-Hill, 1993. pp. 139–50.
5. Rajshree, Rushed, Mahantappa S, Pattankar VA. A clinicopathologic study of ovarian tumors. *Indian J Pathol Microbiol* 1997;11(2):239.
6. Bhattacharya MM, Shinde SD, Purandare VN. A clinicopathological analysis of 270 ovarian tumors. *J Postgrad Med* 1980;26(2):103–7.
7. Nasreen F. Pattern of gynaecological malignancies in tertiary hospital. *J Post Grad Med Inst* 2002;16(2): 215–20.
8. Wasim T, Majrooh A, Siddiq S. Comparison of clinical presentation of benign and malignant ovarian tumours. *J Pak Med Assoc* 2009;59(1):18–21.
9. Sultana A, Hasan S, Siddiqui QA. Ovarian tumors: A five years retrospective study at Abbasi Shaheed Hospital, Karachi. *Pak J Surg* 2005; 21 (1): 37–40.
10. Gilani MM, Behnamfar F, Zamani F, Zamani N. Frequency of different types of ovarian cancer in Valli-e-Asr hospital (Tehran university of medical Sciences) 2001–2003. *Pak J Biol Sci* 2007;10(7):3026–8.
11. Jha R, Karki S. Histological pattern of ovarian tumors and their age distribution. *Nepal Med Coll J* 2008;10(2): 81–5.
12. Molitor JJ. Adenomyosis: A clinical and pathological appraisal. *Am J Obstet Gynecol* 1971;110(2):275–84.
13. Naik VS, Rege JD, Jashani KD. Pathology of genital tract in postmenopausal bleeding. *Bombay Hosp J* 2005; 47(3):10–4.
14. Watt WF, Kimbrough RA Jr. Hysterectomy: Analysis of 1000 consecutive operations. *Obstet Gynecol* 1956;7(5): 483–93.
15. Lal K, Gupta YV. Adenomyosis—A clinical and pathological appraisal. *J Obstet Gynecol India* 1981;31:173–6.
16. Allahbadia G, Ambiye V, Vaidya P. Study of the vaginal hysterectomy in cases other than done for prolapsed. *J Obstet Gynecol Ind* 1991;41(4):543–6.

**How to cite this article:** Dalsaniya M, Choksi TS, Shrivastav A, Agnihotri AS. Retrospective and prospective histopathological study of tumors and tumor-like lesions of female genital tract. *Int J Med Sci Public Health* 2015;4:1602-1604

**Source of Support:** Nil, **Conflict of Interest:** None declared.