



“AN ANALYSIS OF THE PATTERNS OF MALE UROGENITAL TRACT TUMORS- A STUDY AT TERTIARY CARE CENTRE.”

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ABSTRACT A Study into the Pattern of disease in any population is to get the idea about the clinical presentation, the varied morphology and the etiological factors that can be assessed in relation to the prognosis. The present communication deals with 60 cases diagnosed histopathologically over a period of 1 year. Whereby, Prostate tumors were the most commonly encountered (36.67%) followed by Bladder tumors 30%, Renal tumors 11.67% followed by 8.33% of Testicular tumors & Penile tumors each. Lastly, Spermatic cord tumors, Epididymal tumors & Para testicular tumors with 1.67% each. The Bladder tumors showed the varied patterns & Prostatic tumors being Adenocarcinomas.

SUMMARY

The study of the whole spectrum of male urogenital tract specimens in Central India has not yet been performed. Therefore, the current study is aimed to provide updated information regarding patterns of these tumors.

KEYWORDS : Urogenital tumors, Prostate tumors, Adenocarcinoma, Bladder tumors.

INTRODUCTION

The Urogenital tumors are known to run the gamut in regards of age, location, histology and clinical outcomes, from small benign neoplasms that may never recur to the tumors of lower indeterminate potential to lesions that invade the bladder wall and metastasize frequently. The associated morbidity and mortality and the significant proportion of affected middle-age individuals have a major bearing on the death-adjusted life years compared to other malignancies. However, the advances in diagnostic modalities, surgical techniques with generation of newer chemotherapeutic and targeted agents have improved the outcome.

Several studies in India have been focusing on a range of topics related to genitourinary system, which are being recognized throughout the world. In a study conducted in Jaipur^[1], genitourinary cancers, 20.79%, were the most common malignancies in both the sexes. In males, genitourinary malignancies accounted for 17.48% (prostate cancer -40.71% and urinary bladder -30.40%). National Cancer Registry Programme, 2010 revealed 77.6% prostate cancers, 11.6% penile and 10.5% testicular cancers.

BLADDER CANCER: INDIAN SCENARIO

Urothelial carcinoma is the 4th most common cancer in men and the 8th most common in women in the western world.^[2] Where, cigarette smoking was found to be the most responsible risk factor for 48% cases in males and 32% females in the USA.^[3] In India, Gupta et al.^[4] studied a series of 561 bladder cancer patients (2001-2008) at SGPGI, Lucknow, where 97% patients presented with hematuria in mean age 60.2±4.4 years, male : female ratio :: 8.6:1. Transitional cell carcinoma was the predominant histological variant (97.71%).

Biswas et al.^[5] reviewed 88 diagnosed cases in a retrospective study at, CNMC and H, Kolkata, December 2007- November 2009, mean age 65-70 years. Yeole and Jussawalla^[6] reported data collected from the Bombay Cancer Registry and found that bladder cancer was very uncommon in the 1st 3 decades of life. Predominant presenting symptoms noted include hematuria and altered urinary storage symptoms.

RENAL CANCER

RCC is predominantly the disease of elderly and most commonly in 6th-7th decades of life accounting for 3% of all adult cancers while 85% of all renal tumors. Agnihotri et al.^[7] carried out a study to investigate the spectrum of RCC with regard to age of onset, stage at presentation, and survival in 617 patients (January 2000 to December 2012) in North India.

GENITAL CANCERS

Incidence of male genital cancer has increased rapidly over the period of time.^[8] Male genital cancers are histologically diverse. Each site has its own dominant histological type as follows : prostate cancer-adenocarcinomas; testicular cancer- germ cell tumors; penile and scrotal cancer- epidermoid carcinomas and spermatic cord cancers-sarcomas. The highest incidence rates of prostatic cancer are observed among blacks in U.S.^[9] In India (Mumbai), the incidence is 6.7 / lac population and it comprises 2.95% of all the malignant growth in males.^[6] There is no relation of prostatic cancer with diet venereal disease and sexual habits.^[10]

PROSTATE CANCER

Prostate cancer is a global burden on the health-care system, the second most common cancer. About three-quarters of cases worldwide occur in men 65 years or more.^[11] Yeole^[12] showed increasing trends in prostate cancer incidence rates in 5 population-based cancer registries (Mumbai, Chennai, Bengaluru, New Delhi, and Bhopal) in past 20 years.

PENILE CANCER

The Penile cancer is more common in Indian population^[13], with multifactorial incidence. Penile cancers are seen in older men with an abrupt increase in the 6th decade. In India varies from 2.8% to 20%.^[6] Primary malignant melanoma of penis is rare^[14,15]. Pahwa et al.^[13] published a series of 54 patients from May 2005 to June 2006 at new Delhi, ¾ patients were >50 years of age and about ¼ patients presented with phimosis.

TESTICULAR CANCER

Cancer of testes is the second most frequent male genital cancer, which accounts for 1-2% of male genital tract tumors. In India, incidence is low.^[6] Tata memorial hospital registered 158 men (1.5% of total male cases) diagnosed with testicular cancer. Of which, 1-2% cases were bilateral and predominantly germ cell tumor was recorded on histology. A peak at 3rd decade of life in non-seminoma patients whereas 4th decade for pure seminoma.

Tumors of testicular adnexa include adenomatoid tumors which are the commonest and account for 30% of all the Para testicular tumors.^[14,15,16]

The current study was undertaken in lieu of getting information about the prevalence, clinical presentation and morphological patterns of the male urogenital tract tumors.

MATERIALS & METHODS

The present study was retrospective study where all histologically diagnosed cases of male urogenital tumors during 2015-2016 constituted the subjects. During this period, a total number of 60 cases were reported in the Department of Pathology, L.N. Medical College & Research Centre, Bhopal. For the analysis into the pattern of the tumors, the paraffin embedded sections of all biopsy proved cases were examined and the fresh sections were also obtained for better morphological details.

RESULTS

The study work pertains to all the consecutive histologically proven cases of male urogenital tumors diagnosed in the Department of Pathology of L.N. Medical College & Research Centre, Bhopal over a period of 1 year. A total of 60 cases were studied. (Table 1)

Table 1: Data of Distribution of Cases of Male Genital Tumors

Male Urogenital Tumors	No. of cases	Percentage
Prostatic Tumors	22	36.67%
Bladder Tumors	18	30%
Renal Tumors	7	11.67%
Penile	5	8.33%
Testicular tumors	5	8.33%
Paratesticular tumors	1	1.67%
Spermatic cordal	1	1.67%
Epididymal tumors	1	1.67%
Total	60	100%

The Prostatic tumors were the most commonly encountered tumors i.e. 22 cases (36.67%) followed by bladder tumors i.e. 18 cases (30%). Third in frequency were Renal tumors i.e. 7 cases (11.67%). 5 cases each of Penile and Testicular tumors were reported.

The ages of the patients ranged from 7-87 years. Maximum number of cases i.e. 20 (33.33%) were seen in 61-70 years age group followed by 71-80 years age group i.e. 14 cases (23.33%).

Prostate tumors formed the major bulk of the urogenital tumors in males. The most frequent clinical presentation was urinary retention. Their age range was 55-82 years with average age being 67.9 years. The majority of the prostatic tumors were adenocarcinomas i.e. 17 cases. (Table 2).

Table 2: Distribution of Prostate tumors

Prostate tumors	No. of Cases	Percentage
LPIN	3	13.64%
HPIN	2	9.09%
Adenocarcinomas	17	77.27%
Total	22	100%

Based on Gleason scoring, the prostatic adenocarcinoma were divided into well, moderate and poorly differentiated. Those with a score of 2-4 were categorized as well differentiated, 5-7 as moderately differentiated and 8-10 as poorly differentiated. The present study inferred maximum number of cases as poorly differentiated (47.05%) with Gleason's score 8-10.

Table 3: No. of cases of Urinary bladder neoplasms

Neoplasms	No. of cases	Percentage
Papilloma	2	11.11%
Inverted Papilloma	1	5.555%
Transitional cell carcinoma	13	72.22%
Squamous cell carcinoma	1	5.555%

According to Table 3, 18 cases of urinary bladder tumors were studied, 16.67% were Benign.

On classifying the bladder tumors as per WHO/ ISUP grading High grade transitional cell carcinomas were much more common than other lesions.

The bladder tumors were noted in 38-87 years and the peak incidence in 51-60 age group.

Renal tumors comprised of 11.67% of the cases. Renal Cell Carcinoma (Clear cell type) being the most frequent. The age ranged from 7-72

years. R.C.C (Clear cell variant) was seen more commonly in elderly while others were more common in younger. (Table 4)

Table 4: Renal Tumors distribution according to histopathology & Age

Histopathological categorization	No. of cases	Percentage	Peak Age
R.C.C (Clear cell variant)	4	57.14%	65 years
Adenosquamous Carcinoma	1	14.29%	45years
Wilm's Tumor	1	14.29%	7 years
PNET	1	14.29%	23 years
Total	7	100%	

Penile tumors constituted 8.33% of the cases. Squamous cell carcinoma formed the majority of the cases, age group ranged between 30-70 years. Grossly, the tumors showed fungating, ulcerated growth. Histologically, characterized as papilloma, Verrucous carcinoma and Squamous cell carcinoma. The maximum number of cases were well differentiated squamous cell carcinoma.

Testicular Tumors: constituted of 8.33% of the cases where, 4 were malignant and 1 case was benign. Seminoma- most frequent tumor in testes. The age range varied between 23-80 years.

Para testicular region showed only benign involvement in 1 case with adenomatoid tumor.

Epididymal tumors: one case of Leiomyoma was observed in a 55 year old.

Spermatic Cord tumors: The tumor in spermatic cord in a 72 year old with a 16 cm mass, histologically proved to be Pleomorphic sarcoma.

DISCUSSION

The incidence of male urogenital tumor varies from place to place, pointing towards several social, ethnical, cultural and environmental factors. Sharma et al [19] studied 388 cases of male urogenital tract over 6 years, where 3.09% were benign and 96.91% were malignant and age of patients was between 3.5-80 years. Our study included 60 cases over 1 year, whereby, 91.67% cases were malignant and the age ranged from 7-87 years.

The present study inferred prostatic tumors were the most frequent tumors with average age at 67.9 years which was in concordance with Yeole et al.^[12]. The most well established risk factor for testicular cancer has been the presence of an undescended testes. Gilliland and Key^[9] also found this association.

The bladder tumors formed 30% of the spectrum and the similar finding of 29.52% as given by Sharma et al.^[19] The histological patterns of male urogenital tumors observed in the present study are in lieu of, those described by known workers like Sharma et al.^[19]

CONCLUSION

The histologic grading of male urogenital tumors to predict behavior has been a subject of great debate as there is poor inter-observer reproducibility and no uniformity. The present article provides an insight into the histological patterns of male urogenital tract tumors in our institution.

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