



HISTOPATHOLOGICAL SPECTRUM OF UROGENITAL TUMOURS: A HOSPITAL BASED CROSS SECTIONAL STUDY.

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ABSTRACT

Introduction: Genitourinary tumours are one of the most common tumours encountered in clinical practice with significant morbidity and mortality. Genitourinary system encompass a broad spectrum with regard to age, location, histology and clinical outcomes. **Aim:** To analyse the frequency of urogenital tumours with regard to age, sex and type. **Objective:** To study the histopathological findings of various genitourinary tumours. **Materials and methods:** Present study is a cross sectional study conducted in Department of Pathology, ASRAMS. Records of all genitourinary tumours diagnosed on histopathology during a period of 3 years from June 2019 to August 2022 were retrieved and analysed. **Results:** Present study included 375 cases of which majority of the cases were benign with Uterus being most common organ followed by ovary. In malignant tumours carcinoma cervix is most common followed by prostate. **Conclusion:** The histopathological analysis of the study revealed that leiomyoma was the most frequently occurring benign tumour, commonest malignancy associated with FGT is carcinoma cervix. We observed prostate carcinoma to be the most common urogenital malignancy in males.

KEYWORDS : Prostate, Kidney, Cervix, Bladder.

INTRODUCTION:

Genitourinary tumors account for significant morbidity and mortality worldwide. It is important to understand the epidemiological features to assess the effects of diagnostic screening and intervention measures. In developed countries, the introduction of vaccination, routine screening and treatment for premalignant lesions of cervix has led to a fall in incidence and mortality of cervical cancer over past decades. Genitourinary tumours comprise of a broad spectrum regarding age, location, histology and clinical outcomes. Genitourinary tumors are common in both the genders. In an Indian study genitourinary tumours formed 17.48% of all the malignancies with prostate cancer forming 40.71% and urinary bladder (30.40%) [1]. According to the national cancer registry programme female genital tumours formed 25.6% of all cancers with cervix (15.2%), Uterus (2.6%) and ovary (6.3%). As per Indian Cancer Registry data Urinary system formed 4% of all cancers in India with kidney (2.1%) and Bladder forming (1.9%).

The aims and objectives are to analyse the frequency of urogenital tumours with regard to age, sex, type and to study the histopathological findings of various genitourinary tumours.

Methodology:

The current study is a record based cross sectional study conducted in the Department of Pathology, ASRAMS over a period of three years. The study was done after seeking permission from institutional ethics committee No: IEC/ASR/APPROVAL/39/2021. Samples included all small biopsies, specimens and review blocks and slides of all genitourinary tumours. Relevant clinical information was taken from requisition form received along with biopsy material. The tumours were categorized according to age, sex, and histopathological diagnosis. Sections were prepared from formalin fixed, paraffin embedded blocks and stained with Hematoxylin and Eosin. IHC and special stains were used wherever necessary. The tumours were classified according to recent WHO classification of tumours in respective systems.

Inclusion criteria:

All resected specimens, small biopsies and slides and blocks for review of genitourinary system were included.

Exclusion criteria:

Inadequate biopsies and poorly preserved or autolyzed specimens were excluded.

RESULTS:

During the three year study period a total of 375 cases were studied. Age of the patients ranged from 17 to 80. Overall 202 cases were benign and 170 cases were malignant 3 cases were given as borderline tumours. Among the neoplasms 33 cases were from prostate, 21 cases were from the bladder, 9 cases were from kidney, 5 cases were from testis, 6 cases were from penis, 55 were from cervix, 21 cases were from uterus, 22 cases were from ovary, 7 cases were from vulva and 4 cases were from vagina (Table 1).

Table 1 : Organ wise distribution of urogenital tumours.

Organ	No of cases	Mean age at presentation	Benign	Borderline	Malignant
Prostate	33 (8.8%)	68	-	-	33
Bladder	21(5.6%)	63	-	-	21
Renal	9(2.4%)	44	1	-	8
Testis	5(1.3%)	47	-	-	5
Penis	6(1.6%)	70	-	-	6
Cervix	55(14.6%)	47	-	-	55
Uterus	150(40%)	45	118	-	22
Ovary	85(22.6%)	37	57	3	25
Vulva	7(1.8%)	65	-	-	7
Vagina	4 (1.06%)	70	-	-	4

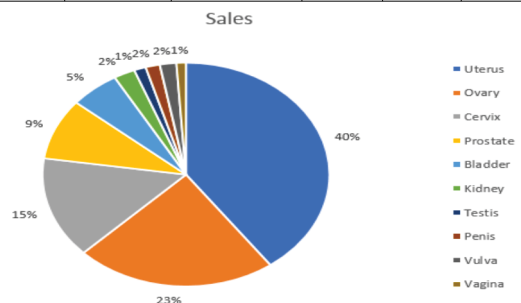


Figure 1: Spectrum of tumours:

Table 2: Histopathological types of Male genital tumours

Site	Histopathological type	No of cases
Prostate	Prostatic intraepithelial neoplasia	8
	Prostatic adenocarcinoma	25
Penis	Carcinoma insitu	1
	Well differentiated SCC	4
	Moderately differentiated	2
Testis	Mixed germ cell tumour	3
	Seminoma	2

A total of 45 cases were male genital tumours. A maximum number of carcinoma prostate cases were in the age group of 60 – 80 and mean age at presentation was 68 years. Most of the cases were of gleason grade group 3. In this study testicular tumours were seen in the age group of 35 to 50 years, mean age at presentation was 48 years. Mixed germ cell tumour (6.6%) was the most common testicular tumour followed by seminoma(4.4%). Most common penile tumour was squamous cell carcinoma.

Table 3: Histopathological types of urologic tumours

Site	Histopathological type	No of cases
Urinary Bladder	PUNLMP	3
	Papillary Urothelial Carcinoma Low grade	1
	Papillary Urothelial carcinoma High grade	2
	Non invasive papillary urothelial carcinoma	2
	Infiltrating urothelial carcinoma	12
	Paraganglioma	1
Kidney	Clear cell RCC	5
	Papillary RCC	3
	Angiomyolipoma	1

A total of 30 cases were of urinary system. Bladder carcinoma is more common than renal cell carcinoma. Mean age at presentation of bladder neoplasms was 63 years and mean age at presentation of renal tumours was 44 years in this study.

Table 4 : Histopathological types of Female genital tumours

Site	Histopathological type	Number of cases
Uterus	Leiomyoma	118
	Atypical Endometrial hyperplasia	10
	Endometrial adenocarcinoma NOS	21
	Serous carcinoma	1
Cervix	Cervical intraepithelial neoplasia	9
	Keratinising SCC	22
	Non keratinizing SCC	12
	Adenocarcinoma	6
	Poorly differentiated carcinoma	2
	Papillary variant of SCC	2
	Basaloid variant of SCC	2
Vulva	Squamous cell carcinoma	7
Vagina	Squamous cell carcinoma	4

Most involved organ in female reproductive system was Uterus (150 cases) with a maximum number of benign neoplasms followed by ovary and cervix. Carcinoma cervix was most common malignancy in female genital tract with majority being squamous cell carcinoma as shown in table 4.

Table 5: Histopathological types of Ovarian tumours

Histopathological type	Benign	Borderline	Malignant	No of cases
Serous	23	-	7	30
Mucinous	13	3	3	19
Seromucinous	7	-	-	7

Fibroma	4	-	-	4
Fibrothecoma	2	-	-	2
Granulosa cell tumour	-	-	3	3
Yolk sac tumour	-	-	1	1
Mixed germ cell tumour	-	-	5	5
Mature teratoma	8	-	-	8
Poorly differentiated	-	-	1	1
Metastatic mucinous	-	-	2	2

Maximum number of Ovarian neoplasms were surface epithelial tumours among them Serous cystadenoma being commonest (23 cases) as shown in table 5.

DISCUSSION:

Prostate adenocarcinoma is one of the most common cancers in India constituting around 5% of all cancers [2]. In male genitourinary tumours prostate was the most common site of malignancy in males in this study with mean age at presentation being 68 years. Many prostatic and non-prostatic lesions can mimic an adenocarcinoma in prostate. In this study a total of 33 cases were studied, 25 cases (75%) were Prostatic adenocarcinoma with majority of cases showing Gleason score 7 and 8 cases (24.2%) were Prostatic intra epithelial neoplasia.

In this study most frequent neoplastic finding in bladder is Infiltrating urothelial carcinoma (57%) most of which showed muscle invasion. Papillary urothelial carcinoma high grade (9.5%) more common than papillary urothelial carcinoma low grade (4.7%). 14% of cases were Papillary urothelial neoplasm of uncertain malignant potential.

Incidence of renal tumours is less in Asian countries. Outcome of RCC depends of morphological type so accurate histopathological diagnosis is essential. A total of 8 cases of RCC were studied. The age ranged from 26 – 60 years. The majority of which were clear cell type (62.5%) which is similar to study done by Suresh Mandrekar et al (63.3%) followed by papillary RCC (37.5%) [3]. Among benign tumours a single case of Angiomyolipoma was seen.

Among testicular tumours Mixed germ cell tumour is predominant histopathological type (60%) followed by seminoma (40%). In penile cancers squamous cell carcinoma is the most common histopathological type.

Female genital tract tumours have different frequencies and patterns of distribution worldwide varying from region to region. Female genital tract includes uterus, cervix, fallopian tube, ovaries, vulva and vagina. Common sites for occurrence of tumours are ovaries, cervix, endometrium. Regular screening with pap smear, awareness of family history, life style risk factors can reduce morbidity and mortality of these malignancies. The late presentation of female genital tract malignancies may be a result of low level of awareness.

Majority of these tumours are benign and three fourths of these tumours are contributed by uterine lesions in a study done by Aradhana et al [4]. In present study also majority of benign neoplasms were contributed by uterine lesions which formed almost half of the benign neoplasms of FGT similar to study done by Nikhilesh kumar et al [5]. Most common of which was Leiomyoma in these studies.

Among females in India breast cancer followed by cervix, ovary cancers are most common sites [6]. In the present study squamous cell carcinoma was the most common malignancy of cervix, vulva and vagina. Adenocarcinoma is most frequent in uterus and serous cystadenocarcinoma is dominant malignancy in ovary which is similar to study done by Nikhilesh et al [5]. In this study among female genital tract malignancies cervix constituted 48.67 % following ovary forming 22.1%. In study done by Agarwal et al ovarian

cancers constituted to 20.6% and carcinoma cervix 61.2%[7]. Endometrioid adenocarcinoma is the most common histologic type of uterine tumour contributed to 19.46 % of FGT malignant tumours in this study.

CONCLUSION:

Prostate tumours have higher incidence than all other male genitourinary lesions. Tumours of male genital system are important in pathology practice, histopathological features have a major role in determining prognosis and therapeutic options. Histopathology plays an important role in therapy of renal cell carcinoma. Morphologic patterns and selected IHC markers can solve the differential diagnosis in most renal neoplasms without need for complex molecular analysis. Despite being preventable in nature carcinoma cervix remains the most common female genital tract malignancy in India. In developing countries there is a need to increase awareness of routine screening and treatment of premalignant lesions to reduce the incidence and mortality of cervical cancer.

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