

Histopathological Outcome of Testicular Lesions at PIMS

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ABSTRACT

Objective: This study was undertaken to determine the incidence, Age wise distribution and Histopathological outcome of the testicular lesion at Pakistan Institute of Medical Sciences Islamabad.

Methodology: A retrospective study of 69 patients in which orchiectomies was done for testicular lesion from January 2013 to March 2016 at Department of Urology Pakistan Institute of Medical Sciences, Islamabad. The epidemiological data were retrieved from case files and histopathological reports. Data was analyzed in respect of side involvement, age and histological type of tumors.

Results: A total of 69 patients included in the study, of which 49(71.01%) were Non-neoplastic and 20(28.98%) were neoplastic lesions. Among Non- neoplastic lesions 24(48.98%) were undescended testis, 24(48.98%) were torsion and 1(2.04%) were an abscess. A maximum number of cases were diagnosed in the second decade of life (30.62%), left side involvement (59.18%) was common then right side involvement (40.82%).

Among neoplastic lesions 40% were Yolk sac tumors,30% were Mixed germ cell tumors,20% were seminoma, 5% were teratoma and 5 % were B-cell lymphoma. Most of the cases were diagnosed in the third decade of life (45%), Right side involvement (70%) was more common than left side involvement (30%).

Conclusion: Testicular tumors is still common in our population, but in our study, there is no evidence of malignancy in the undescended testis.

Key Words: Testicular lesions, Orchidectomy, Neoplastic, Non-Neoplastic

Introduction

Testicular lesions are not common in the Asian population, but its incidences are increasing in the western population and it is documented as the 4th common cause of death due to malignancies. As in Pakistan, we do not have any data registry for neoplasia, for the reason we don't have a proper incidence of tumors.

According to the current data statistics, tumors of the testis is less common in the developing world, its incidences range from one per 100,000 in Asian population to ten per 100,000 in the European population.¹ Every year about 49,300 new cases of testicular tumors are diagnosed, with a high incidence in central Europe.² The etiology of testicular cancers is not known, but it is thought that different factors like undescended testis, trauma, infections, and endocrine factors have a role in its development.³

Most of the tumors are from germ cell and about half of the tumors are mixed germ cell tumors. The cause of germ cell tumors is not known, but it is thought that the tumor process starts during the intrauterine life of the fetus.²

Despite new techniques in imaging and tumour marker assays, the diagnosis of testicular lesions is primarily dependent upon histopathological examination.⁴ The urologists, the radiologists, and chemotherapists are eventually dependent upon histological diagnosis of a tumour and tumour-like lesions.⁵

Treatment of testicular lesions includes operative procedures like orchidectomy, retroperitoneal lymph node dissection etc, radiation therapy and chemotherapy have a tremendous influence on the management of all malignant testicular lesions.

As in Pakistan we have limited data regarding the incidence and histopathology of testicular lesions, therefore, it was planned to

study the incidence and histopathological types of testicular lesions.

Methodology

A retrospective study that was conducted at urology department Pakistan Institute of medical sciences Islamabad. The sample size was calculated on the basis of duration of study between January 2013 to March 2016. The study includes all the patients (Elective and Emergency) who had orchiectomies for testicular lesion between the specified period. The variables like age, presenting symptoms, side involvement and histopathology types were retrieved from case files and histopathology reports. Ethical committee approval was granted for the study. SPSS version 16 was used for data analysis.

Importance was paid to record a brief clinical history with age, registration no, biopsy no, presenting signs & symptoms. All patients were investigated with Routine complete blood picture, X-ray chest, Ultrasound of abdomen, in some cases when required serum marker assay for Alpha-fetoprotein, -human chorionic gonadotropin and CT scan were done.

In laboratory thorough, Gross examination was carried out and important points were noted down. The Gross specimens received were fixed in 10% neutral buffered formalin for overnight fixation. Next day morning, Gross examination of fixed specimen is done and the sections are taken from representative sites. These sections are further processed into an automated tissue processor. After processing, sections are imbedded in paraffin to make paraffin blocks. These blocks are then cut serially in three to five micron thickness using rotatory microtome to prepare slides. Slides are then stained using routine Haematoxylin & Eosin stain and then mounted with DPX. Special stain is not carried out.

Results

All of the patients had been diagnosed and treated at Pakistan Institute of Medical Sciences Islamabad over a period of 39 months, i.e. from January 2013 to March 2016 were taken into consideration. This study consists of 69 cases among which 49 cases are non-neoplastic and 20 cases are neoplastic lesions.

Table I shows age wise distribution of non-neoplastic lesions of the testis. Our youngest patient was at 1 year while the oldest patient was 67 year male. Maximum numbers of patients presented in the second decade of life (30.62%). Second highest age incidence was found in 1st decade of life, comprising 24.50%.

Table I shows age wise distribution of neoplastic lesions. Our youngest patient was at 1 year while the oldest patient was 71 year male. Maximum numbers of malignant lesions are presented in third decade of life (45%).

Among non-neoplastic lesions, 49 cases were found to be unilateral involvement while there was no bilateral involvement. Right sided lesions (40.82 %) were less common than left-sided lesions (59.18 %). (Table II)

Table II: Laterality of testicular lesions.

		Non-Neoplastic lesions		Neoplastic lesions	
Laterality	Side	No of cases	%	No of cases	%
Unilateral	Right	20	40.82	14	70
	Left	29	59.18	6	30
Bilateral		0	0	0	
Total		49		20	

Among all neoplastic lesions, 20 cases were found to be unilateral involvement while none of the lesion is bilateral. Right

Table I: Age incidence of Non-Neoplastic & Neoplastic lesions.

Age in years	Non-Neoplastic lesions		Neoplastic lesions		
	No of Cases (n=49)	Percentage %	Age in years		Percentage
			No of Cases (n=20)		
0-10	12	24.5	0-10	4	20
11-20	15	30.62	11-20	2	10
21-30	7	14.28	21-30	9	45
31-40	6	12.24	31-40	2	10
41-50	0	0	41-50	2	10
51-60	5	10.2	51-60	0	0
61-70	4	8.16	61-70	0	0
>70	0	0	>70	1	5
Total	49		Total	20	

sided tumors (70 %) were relatively more common than left sided tumors (30 %).

Out of all non-neoplastic lesions, a maximum number of cases was of torsion and undescended testis accounting for 48.98% each, followed by testicular abscess 02.04 %. Thus, torsion and undescended testis were the most commonly found abnormality constituted 48 out of 49 cases (97.96 %) in the present study. Age ranging from 1 year to 62 years. Mean age being 24.74 years. The testicular abscess was found in only 1 case out of 49 cases (02.04 %) in the present study. (Table III)

Histopathological diagnosis	No of cases(n=49)	Percentage
Congenital lesions		
Undescended Testis	24	48.98
Infection/Inflammation		
Tuberculosis	1	2.04
Vascular lesions		
Torsion	24	48.98
Total	49	

Out of all neoplastic lesions the maximum number of cases were Yolk sac tumors (40 %), Followed by Mixed Germ cell tumors (30 %). There was also a single case of B cell lymphoma (5%). (Table IV)

Histopathological diagnosis	No of cases(n=20)	Percentage
Yolk sac tumor	8	40
Mixed Germ cell tumor	6	30
Seminoma	4	20
Teratoma	1	5
B cell Lymphoma	1	5
Total	20	

Discussion

As the incidence of testicular tumors is low in the Asian population, but it is still the commonest tumors occurring in a young male. Testicular swelling constituted 72.50% in our study; the same results are obtained by Robson⁸ et al and W. Duncan⁹ et al. In our study the total number of undescended testis is 24(48.98%), according to the histopathology, but there is no evidence of malignancy seen, Malignant cases were mostly seen in 3rd decade of life, which is 45%. Testicular malignancies are commonly seen in three age groups, that is from 3-10 years, 20-35 years and above 50 years.⁷

In the current study, there is only one case of NHL seen at the age of 71 years. According to Fonesca et al. the median age of

NHL is 68 years.¹⁰ Primary testicular lymphoma accounts for about 1% of all lymphomas and is the most common testicular malignancy in men more than 60 years of age.¹¹

Leukemic infiltration of testis varies from 8-25% in the literature, but in most of the studies, it is below 10%.^{12,13,14} In our study leukemic infiltration was not seen, it may be due to a smaller number of cases and it is because we recommend further studies with a larger number of cases. The testis is a potential site for ALL.^{15,16}

To compare the current study with other studies of this region, Kunal S Deore¹⁷ and his friends studied the histopathological analysis of testicular tumors. According to his study the testicular tumors are uncommon about 8.21% (17/207) compare to our study which is 28.98% (20/69), Most tumors occurrence was in 3rd and 5th decade 58.8% (10/17), which is similar to our study. The most common tumors were germ cell tumors, which was 70.6% (12/17), similar to our study which is 70% (14/20). Undescended testis represents about 24.6% as compared to our study where it is 34.78% (24/69).

Karki S¹⁸ and his friends studied histopathological analysis of testicular tumors, according to this study the testicular tumor incidence was 11.4% far less than our study. Most of the tumors were seen in 5th decade. The common tumors were germ cell tumors, and 30% biopsies were of undescended testis.

In our study the non-neoplastic testicular lesions were more common than the neoplastic ones (71% vs 29%). This is in concordance with Reddy H et al (86 vs 14%)¹⁹ and Patel MB et al (85 vs 15%).¹⁷

According to the literature, the histological pattern and behaviour of the testicular tumours differ with age. Testicular neoplasm of germ cell origin is the most common malignancy in men aged between 18-35 years.²⁰

Cryptorchidism is the single most important risk factor associated with testicular cancer with 10% of all testicular cancer patients having a history of cryptorchidism.²¹

Comparison with a histopathological spectrum of testicular lesions study, non-neoplastic lesions were the most common 93%, compared to our study which is 71%.²² The difference is because of sample size and duration of the study. Most non neoplastic lesions occurrence was in the second decade of life, which is similar to our study. Undescended testis 39.62% was the most common non neoplastic lesions, which was 48.98% in our study. Tubercular Epididymo-orchitis 3.77% and in our study its remaining 2.04%. Among the neoplastic lesions, seminoma is 25% and mixed germ cell tumor is 25%, which is comparable with our study, 20% and 30% respectively.

Most of our findings are comparable to previous studies. Variations found may be because of a small number of cases especially of tumours.

Conclusion

As there is a very low incidence of testicular malignancies in Pakistan, but in the current study, we have almost similar results as reported in the international literature. Hence there is a need for further studies with longer duration and larger sample size.

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