



Original Article

Histopathological pattern of testicular lesion

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ABSTRACT

Background: Testicular tumors are rare type of tumors affecting adolescents and young adults. The testicular tumors constitute 4th most common cause of death from neoplasm in a younger male. The present study is undertaken to analyze the pattern and age wise distribution of testicular lesions in our hospital.

Materials and Methods: This was a prospective study done over a period of 4 years from November 2012 to October 2016, after taking approval of the ethics committee and informed consent from the patients. Histopathological slides were retrieved and reviewed for tumor and its subtype.

Results: A total of 60 cases of testicular lesions were encountered in our study. Out of the total 60 cases, 15% (9/60) were diagnosed as malignant testicular tumor. Most of these tumors were seen between 3rd and 4th decades. Germ cell tumor was the most common type (77.7%) among which seminomas (44.44%) and mixed germ cell tumors (28.57%) were most frequently encountered. Other tumor diagnosed was Non-Hodgkin lymphoma. Non-neoplastic lesions of the testis are most common in the second decade of life. The youngest patient was at birth and oldest was 71 years of age. Out of all non-neoplastic lesions, vascular lesions like torsion and infarction are the most common findings (54.90%) followed by tuberculous abscess (15.68%).

Conclusion: Testicular tumors are uncommon in our population. Histopathological spectrum of our study was comparable with other parts of the world, germ cell tumor accounted for highest percentage of cases in neoplastic lesions and torsion and infarction are the common findings in non-neoplastic lesions of testis.

INTRODUCTION

Testicular cancers comprise 1% of all the male cancers worldwide.¹ In developed countries, testicular neoplasm

have been noted as most common solid tumor between the 2nd and 4th decade of life.^{2,3} Though the etiology of testicular cancer is not well understood, various factors like cryptorchidism, trauma, infections, genetic and endocrine factors appear to play a role in their development.⁴ A definite geographic and racial distribution is seen in testicular tumors. The age distribution of testicular cancer is also distinct from other cancers.⁵

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Table 1: Histological diagnosis of testicular tumor along with age distribution.

Age group	Seminoma	MGCT	NHL	Immature Teratoma	Total
31-40	2	2	1	-	5 (55.55%)
41-50	1	-	-	1	2 (22.22%)
51-60	-	-	-	-	0
61-70	-	-	1	-	1 (11.11%)
71-80	-	-	-	-	0
81-90	1	-	-	-	1 (11.11%)
Total	4 (44.44%)	2 (22.22%)	2 (22.22%)	1 (11.11%)	9 (100%)

The present study is undertaken to study the diverse histopathological patterns of testicular lesions and thus offering a specific diagnosis which is of paramount clinical significance.

MATERIALS AND METHODS

After approval of the ethics committee and informed consent from the patients were obtained, a total number of 60 cases with testicular lesions were evaluated between November 2012 to October 2016. This was a cross-sectional observational study done in the department of Pathology of B&B Hospital. The gross specimens received were fixed in 10% formalin. Gross examination of fixed specimen was done and the sections were taken from representative sites. The sections were stained with hematoxylin and eosin. Light microscopic study was done for diagnosis. Statistical analysis was done using EXCEL wherever necessary.

RESULTS

There were a total of 60 testicular biopsies reviewed during November 2012 to October 2016. Seventy percent (70%) of these testicular biopsies were orchidectomy specimen and 30% were small biopsies. Thirty percent (30%) of the total specimen comprised of undescended testis. Out of the total 60 cases, 15% (9/60) were diagnosed as neoplastic lesions and 85% (51/60) were non-neoplastic lesions. Table 1 and table 2 shows age wise distribution and histological diagnosis of neoplastic and non-neoplastic lesions of testis respectively. As shown in table 1 testicular tumors were

more prevalent in the age group of 31-40 years. Only one case of Non-Hodgkin lymphoma was seen after 50 years of age. Out of the 9 malignant tumors in this study, 77.77% (7 cases) consisted of germ cell tumors.

Table 2 shows age wise distribution of non-neoplastic lesions of testis. Our youngest patient was at birth while the oldest patient was 71 year male. Maximum numbers of patients presented in second decade of life (29.41%). Second highest age incidence was found in 3rd and 4th decade of the life, comprising 17.64% each. Various lesions were observed in wide range of age. Torsion and infarction of testis was seen in 28 cases (54.9%) followed by testicular abscess (n=8; 15.6%). Since tuberculosis is more common in our context, tuberculosis of testis was found in 4 cases (7.8%). (Table 3)

DISCUSSION

Though the incidence of testicular tumor is low, it is one of the most common malignancies occurring in young adults. In present study, most of the malignant cases were seen in 3rd and 4th decade of life which was in accordance with reports from African and European series.^{6,7}

According to the literature, the histologic pattern and behavior of the tumor differ with each age period. In young adults, seminoma, embryonal carcinoma, teratoma and teratocarcinoma are common but seminoma is more common in the fourth decade whereas spermatocytic seminoma and lymphoma occur in the elderly.

Table 2 : Frequency of nonneoplastic testicular lesions at various age group

Age in years	Number of cases (n=51)	Percentage (%)
0-10	2	3.92
11-20	15	29.41
21-30	9	17.64
31-40	9	17.64
41-50	6	11.76
51-60	6	11.76
61-70	3	5.88
>71	1	1.96

Table 3: Histopathological diagnosis of non-neoplastic lesions.

HPE Diagnosis	Number of Cases (n=51)	Percentage(%)
Undescended testis	4	7.84
T.B. Epididymo-orchitis	5	9.80
Granulomatous Orchitis	1	1.96
Testicular Abscess	8	15.68
Non-specific Epididymo-orchitis	5	9.80
Torsion and Infarction	28	54.90

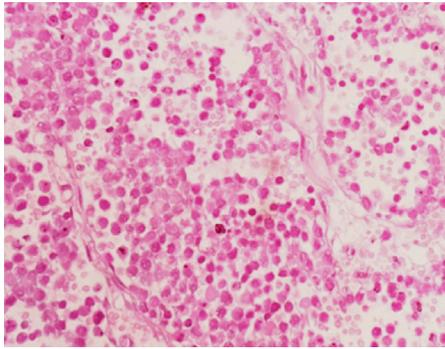


Figure 1: Seminoma: Nests of tumor cells separated by fibrous septae containing lymphocytes and plasma cells (HE stain x 200).

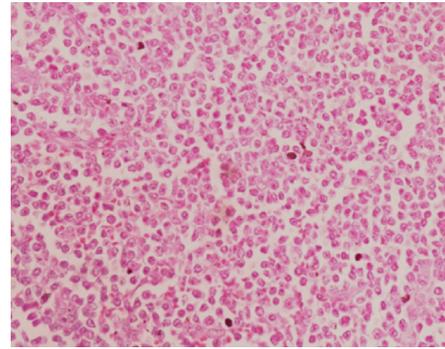


Figure 2: Non-Hodgkin lymphoma: proliferation of atypical neoplastic cells in diffuse sheets having indented nuclei and conspicuous nucleoli (HE stain x 200).

Out of the 9 malignant tumors in this study, 77.77% (7 cases) consisted of germ cell tumors. According to Mostefi and Price, germ cell tumors constitute more than 94% of testicular tumor.⁸ Among the 7 cases of germ cell tumors in this study 2 (28.57%) were mixed germ cell tumors which is similar to that seen in other studies. In this study, a case of mixed germ cell tumor comprised of embryonal carcinoma and solid form yolk sac tumor, whereas other contained predominance of seminoma with choriocarcinoma.

Seminoma (fig.1) comprises 35-71% of testicular tumors. In this study, seminoma consisted of 44.44% (4 cases) of all testicular tumors.

Two cases (22.22%) of Non-Hodgkin Lymphoma NHL (fig. 2) were encountered. One was seen in a 31 years old patient and the other one in a 65 years old patient. Both of them had diffuse large B-cell type Non-Hodgkin Lymphoma.

Fonseca et al reported median age of presentation of extranodal NHL to be 68 years. Primary testicular lymphoma accounts for approximately 1% of all lymphoma and is the most common malignancy in men more than 60 years of age.⁹

The reported incidence of leukemic infiltration of testis varies from 8% - 25% in the literature, but in most studies this figure is less than 10 percent.^{10,11} Leukemic infiltration was not seen in this study.

Post pubertal (adult) testicular teratomas are malignant. Malignant testicular teratomas have a higher metastasis rate of 20% as opposed to their ovarian counterparts.¹² Pure teratoma in the testis is rare accounting for 4% of GCT in this organ. Teratomatous features are more commonly found in mixed GCTs in the testis, rather than pure teratoma. In this study 1 case (11.11%) was encountered with immature teratoma.

In the present study, for tuberculousepididymo-orchitis

mean age was 49.6 years which is similar to Suankwan U et al.¹³ In the present study, a case of granulomatous orchitis whose age was 52 years which is similar to the study given by Grunberg H¹⁴ who found the prevalence to be the most common in 5th to 6th decade. There were 5 cases of non-specific epididymo-orchitis out of 51 cases (9.80%). Age ranging from 21-60 years which is similar to the study given by Kaver et al.¹⁵

The most commonly found abnormality, torsion and infarction constituted 54.90% in the present study with the mean age 26.5 years which is similar to study given by Cuckow et al.¹⁶

CONCLUSION

The incidence of testicular neoplasm still remains low in our population which is reflected by the paucity of studies in published literature. Germ cell tumors accounted for highest percentage of subtype of seminoma followed by mixed germ cell tumor. Out of all non-neoplastic lesions, vascular lesions like torsion and infarction are the most common findings followed by tubercular abscess.

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