



HISTOPATHOLOGICAL STUDY OF TESTICULAR LESIONS AT RIMS, RANCHI

Pathology

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ABSTRACT

Testicular tumors are rare and uncommon in Asians and it is even rare in Chotanagpur region of this country. But some non-neoplastic lesions are to be found like acute and granulomatous orchitis, torsion etc.

The present study is to elucidate the features of testicular lesions with respect to age, laterality and clinical presentation.

The present study was done at the Department of Pathology, Rajendra Institute of Medical Sciences, Ranchi between July 2018 to October 2019. Histopathological examination was done of all the testicular specimen by routine paraffin wax sections and was stained by Haematoxylin and Eosin (H&E).

In the present study, the germ cell tumors of testes, some non-malignant lesions of testes like granulomatous orchitis, torsion were discovered and studied. Among the germ cell tumors, 18(36%) cases, of seminoma, 4(8%) cases of embryonal carcinoma, 1(2%) case of mature teratoma, 2(4%) cases of immature teratoma and 2(4%) cases of intratubular germ cell neoplasm were received and identified. The adults in 31-40 years of age group and left side of the testis were identified as common sufferer.

Though nowadays Immunohistochemistry is also used for confirmation of the histopathological diagnosis but still histopathology stands as an excellent first line tool in providing an early diagnosis.

KEYWORDS

I. INTRODUCTION

Primary malignant tumors of the testes accounts for 0.95% of all the malignancies, 1.55% of all male cancers, 10.9% of all malignancies of male urogenital tract or 18.3% of all the malignant growths of male genital tract¹. Germ cell tumors (GCT) represent over 95% of these cancers. In contrast to most other tumors of the body, testicular tumor is more frequent in males between 15-35 years of age². The risk factors associated with testicular cancer include cryptorchidism, carcinoma in situ, prior history of testis cancer, HIV infection, Down syndrome and testicular trauma³. Testicular cancers commonly presents as a unilateral lump or painless swelling noticed incidentally. Pain is less common, with a one third of patients presenting with a dull ache and acute pain is uncommon⁴. Germ cell tumors are divided into seminomas and non-seminomas. Non seminomatous tumors include yolk sac tumor, embryonal cell carcinoma, teratoma and choriocarcinoma. Three tumor serum markers must be measured in any man with suspected testis cancer: Alpha fetoprotein (AFP), beta unit of human chorionic gonadotropin (β -HCG), Lactate dehydrogenase (LDH). Idiopathic granulomatous orchitis is a rare inflammatory process of the testis of unknown etiology. Testicular torsion is more common in adolescent males. Testicular torsion can run in families but can also occur after an injury to the groin. Cryptorchidism is the major identifiable risk factor associated with the development of testicular cancer⁵. The risk is greatest in cases of bilateral cryptorchidism. Carcinoma in situ (intratubular germ cell neoplasia) appears to be a true pre malignant condition for the development of invasive germ cell tumor of the testis⁶.

II. Material And Methods

A total of 50 cases of testicular lesions were included.

Study Design: Prospective and retrospective study.

Study Location: Department of Pathology at Rajendra Institute of Medical Sciences, Ranchi

Study Duration: July 2018 to October 2019

Sample size: 50 patients.

INCLUSION CRITERIA:

Patients in the age group 1-80 years complaining of:

1. Testicular swelling
2. Mass per abdomen
3. Pain in the mass

EXCLUSION CRITERIA:

1. Patients in the age group <1 year and >90 years.
2. Patient suffering from scrotal swellings like hernia, hydrocoele etc.

OBSERVATIONS AND RESULTS

INCIDENCE OF DIFFERENT TESTICULAR LESIONS

DIFFERENT TYPES OF TESTICULAR TUMORS	NO. OF CASES	%
Seminoma	18	36%
Embryonal carcinoma	4	8%
Yolk sac tumor	4	8%
Choriocarcinoma	0	0%
Mature teratoma	1	2%
Immature teratoma	2	4%
Intratubular germ cell neoplasia	2	4%
Acute orchitis	5	10%
Granulomatous orchitis	7	14%
Torsion	5	10%
Haemopoietic/lymphoid malignancies	2	4%

Pure seminoma (36%) outnumbered all the other subtypes of testicular lesions and surprisingly, lymphomas were detected in 2 cases (4%). So, among the testicular lesions observed, seminoma has got higher incidence.

SIDE OF THE TESTES AFFECTED

TESTICULAR LESIONS	TOTAL NO.	RIGHT SIDE	LEFT SIDE	BILATERAL
Seminoma	18	7	11	-
Embryonal carcinoma	4	3	1	-
Yolk sac tumor	4	1	3	-
Lymphoma	2	1	1	1
Intratubular germ cell neoplasia	2	1	-	-
Mature teratoma	1	-	1	-
Immature teratoma	2	-	1	-
Acute orchitis	5	2	3	-
Granulomatous orchitis	7	2	1	4
Torsion	5	3	2	-
Total	50	20(41%)	24(49%)	5(10%)

Thus, the frequency of affection of left testis (49%) by testicular lesions is significantly higher than the right testis (41%).

I. DISCUSSION

The present series, a prospective and retrospective study, comprises of 50 cases of testicular lesions, received and identified in the Department of Pathology, RIMS, Ranchi in the past 1 year. In the present study, peak incidence of this tumor was observed in fourth decade of life. Similarly Kurohara *et al* (1968)⁷ and Moghe *et al* (1970)⁸ observed the peak, during fourth decade. But Deotra *et al* (1994)⁹ noticed the

AGE DISTRIBUTION

TYPES OF TESTICULAR LESIONS	TOTAL NO. OF CASES	AGE GROUP IN YEARS						
		0-10	11-20	21-30	31-40	41-50	51-60	61 and above
Seminoma	18	-	1	2	10	5	-	-
Embryonal carcinoma	4	-	2	2	-	-	-	-
Yolk sac tumor	4	4	-	-	-	-	-	-
Mature teratoma	1	-	1	-	-	-	-	-
Immature teratoma	2	-	1	1	-	-	-	-
Intratubular germ cell neoplasia	2	-	-	-	-	1	1	-
Acute orchitis	5	-	-	2	3	-	-	-
Granulomatous orchitis	7	-	-	-	1	2	2	2
Torsion	5	-	-	-	2	1	1	2
Lymphoma	2	-	-	-	-	-	2	-
Total	50	4(8%)	4(8%)	6(12%)	16(33%)	9(19%)	6(12%)	4(8%)

The above table clearly indicates that the testicular tumors commonly affected rather younger individuals in their 4th decade of life (33%). Above all, 18 out of 10 cases of seminoma were detected in this age group (i.e. 31-40 years).

CLINICAL SYMPTOMS OF TESTICULAR LESIONS

TYPES	TOTAL NO.	SCROTAL SWELLING	PAIN	TRAUMA	CRYPTORCHIDISM
Seminoma	18	18	3	-	5
Embryonal carcinoma	4	4	-	-	-
Yolk sac tumor	4	4	-	-	-
Lymphoma	2	2	1	-	-
Intratubular germ cell neoplasia	2	2	-	-	-
Mature teratoma	1	1	-	-	-
Immature teratoma	2	2	-	-	-
Acute orchitis	5	5	3	2	-
Granulomatous orchitis	7	7	-	-	-
Torsion	5	5	2	2	-
Total	50	50	9	4	5

So, from the above table it is quite obvious that in cases of testicular tumors, painless scrotal swelling is the predominant symptom and after that cryptorchidism is common predisposing factor for this tumor.

pathologist have agreed that the response of the treatment of the patient is characteristic of the tumor that was diagnosed.

maximum number of cases in third decade. Most of the testicular tumors presented with scrotal swelling. History of pain was noticed in 9 cases only in present study. *Rusche*¹⁰ recorded 41 cases of testicular tumors, of which 36(87.8%) were presented with scrotal swelling and in 4(9.75%) cases, patients complained of pain. We observed 5 cases of undescended testicle associated with testicular tumors out of 50 cases of testicular lesions. All of them were associated with seminoma. This observation is almost similar to the *Deotra et al (1994)*¹¹. Among the testicular lesions- seminoma was found to be the commonest tumor constituting 36%. This is comparable with the findings of *Friedman and Moore*¹² and *Deotra et al*. 7 cases of granulomatous orchitis was encountered in our study amongst 50 cases. Four cases of embryonal carcinoma constituted 8% in the present series and the cases were in the third decade. This comes within the range mentioned by *Ashley (1978)*¹³ who reported 4.25% of its incidence. Teratoma also accounted for 6% of testicular tumors. The figure is slightly lower than the previous studies by *Bhargava et al (1968)*¹⁴, and *Deotra et al (1998)*¹⁵ as 9% and 7% incidence in their respective series. 4 cases of yolk sac tumor was encountered. This constituted 8% of all testicular lesions of present study. Testicular lymphoma is a rare disease comprising approximately 1% to 2% of all non Hodgkin lymphoma's and about 5% of testicular tumors, and is primarily a disease of the elderly as mentioned by *Andrea G. Lantz et al (2009)*¹⁶. 2 cases of testicular lymphoma encountered in our present study amongst 50 cases of testicular lesions was in between 51 and 60 years. Granulomatous orchitis is a rare inflammatory process of the testis of unknown etiology. Trauma, auto immune reaction to sperms and urinary tract infection has been postulated by *Gadgil NM et al (2001)*¹⁷.

II. CONCLUSION

In our study, each case was studied with brief clinical history like age of the patient, presenting complain, side of the affected testicle and history of undescended testis. Among the germ cell tumors, 18 (36%) cases of seminoma, 4 (8%) cases of embryonal carcinoma and yolk sac tumor, 1 (2%) case of mature teratoma, 2 (4%) cases of immature teratoma and 2 (4%) cases of intra tubular germ cell neoplasm were received and identified in the present series. Thus almost all types of germ cell tumors except choriocarcinoma, polyembryoma and teratocarcinoma were found in the present study. 2 (4%) cases of lymphoma was also found in the present study. Cryptorchidism plays a significant role for the subsequent development of testicular tumors. The specimen should not be discarded until the clinician and

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