



CLINICOPATHOLOGICAL STUDY OF ORCHIECTOMY SPECIMEN IN A TERTIARY CARE HOSPITAL

Dr. Rohit Shivaji Kadam*

Assistant Professor, Krishna Institute Of Medical Sciences And Research Center, Karad
*Corresponding Author

Dr. Sunil V Jagtap

Professor, Krishna Institute Of Medical Sciences And Research Center, Karad

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INTRODUCTION :

Orchidectomy is the term that is used for the procedure of surgical removal of one or both testis. It may be indicated for diseases of the testis like inflammatory, injury to the testis, both benign and malignant, or to control cancer of the prostate by removing a source of androgenic hormones. India being one of the most populous countries in the world, the incidence of both neoplastic and non neoplastic testicular lesions is. Various benign conditions of the testis mimic tumors in their presentation and vice versa¹.

Pathologist plays an important role in accurate classification, appropriate staging and prognostic parameters.

AIM AND OBJECTIVE

- To study clinicopathology of orchidectomy specimen.
- To study various clinical and histopathological patterns of non-neoplastic and neoplastic lesions of testis.
- To study serological tumor markers wherever possible

MATERIAL AND METHODS

Present study was a five years descriptive type of study. In this five years study period June 2012 to May 2017, a total number of 62 surgically removed specimens of testis were received in the Department of Pathology of Krishna Institute of Medical sciences and research centre, Karad for histopathological examination.

Inclusion Criteria : All orchidectomy specimens received from the surgery department in the period of June 2015 to May 2017. Archival data of cases was studied from June 2012.

Exclusion Criteria : None

For prospective cases detail record brief clinical history with age, registration number, biopsy number, presenting signs & symptoms were noted, required serum marker assay for AFP, HCG and LDH were noted wherever possible.

Age and diagnosis of non neoplastic lesions

Table 4 – Age and Diagnosis of non neoplastic tumors

Sr. No	Histopathological diagnosis	1-10	11-20	21-30	31-40	41-50	51-60	61-70	>70	Total
1	Acute on chronic non specific orchitis	-	-	-	1	-	1	-	3	5
2	Chronic epididymo orchitis	-	-	-	-	-	1	-	-	1
3	Granulomatous orchitis	-	1	-	2	-	-	1	-	4
4	Atrophic testies	-	1	-	2	2	1	1	2	9
5	Hemorrhage and necrosis – s/o Torsion testies	1	5	4	3	1	1	-	-	15
6	Unremarkable	-	-	-	-	-	6	4	-	10
	Total	1	7	4	8	3	10	6	5	44

According to our study out of 44 non neoplastic lesions, maximum number of patients presented in 51- 60 years of age group comprising 10 cases i.e (23%) .Maximum 15 cases (34%) were diagnosed as hemorrhage and necrosis- s/o torsion testis.

Age and diagnosis of neoplastic lesions

Table 5 - Age and diagnosis of neoplastic lesions

Sr.	Histopathological diagnosis	1-10	11-20	21-30	31-40	41-50	51-60	61-70	>70	TOTAL
1	Classic Seminoma	-	1	1	4	-	1	-	-	7
2	Spermatic seminoma	-	-	-	-	1	1	-	-	2
3	Pure embryonal cell carcinoma	-	-	-	1	-	-	-	-	1
4	Mixed germ cell tumor	-	-	1	2	-	-	-	-	3
5	Teratoma with adenocarcinoma	-	-	1	-	-	-	-	-	1

OBSERVATIONS AND RESULTS :

In the five years of study period June 2012 to May 2017, a total number of 62 surgically removed specimens of testis were received in the Department of Pathology of Krishna institute of Medical Sciences and Research Centre, Karad for histopathological examination. Out of these 62 cases, 44 cases were non neoplastic while 18 cases were neoplastic. Out of 18 neoplastic cases only 1 was of benign origin while 17 cases were malignant.

Table No 1: Types of testicular lesions

Type	Number of cases	percentage
Non neoplastic	44	71%
Neoplastic – Benign	01	02%
Malignant	17	27%
Total	62	100%

Out of 62 cases, most commonly found lesions were non neoplastic lesion which composed of 44 cases i.e (71%), while neoplastic had 18 cases comprising 29%

Laterality of testicular lesions

Out of 62 cases of testicular lesions studied, only 4 (6.5%) cases was bilateral and remaining cases were unilateral. In this remaining 58 cases Right testicular involvement was in 31 (50%) cases while Left testicular involvement in 27 (43.5%) cases.

Table 2: Laterality of testicular lesion

Laterality	Number of cases	Percentage
Right	31	50%
Left	27	43.5%
Bilateral	04	6.5%
Total	62	100%

All bilateral cases were in non neoplastic lesions group. All neoplastic lesions are unilateral.

6	ITGCN	-	-	-	-	-	1	-	-	1
7	Benign spindle cell lesion of testies	-	-	-	-	1	-	-	-	1
8	Non Hodgkin Lymphoma – S/O DLBCL	-	-	-	-	-	-	1	-	1
9	Yolk Sac Tumor	1	-	-	-	-	-	-	-	1
	Total	1	1	3	7	2	3	1	0	18

In our study, we found 18 neoplastic cases out of which maximum cases presented in 31-40 years of age group i.e 07 cases(39%).

Out of 18 cases of neoplastic lesions maximum 7 patients (39%) were diagnosed classic seminoma. Maximum cases of classic seminoma were seen in age group of 31-40 years. Yolk sac tumor was only tumor seen in first decade of life.

Serum Markers :

Table 6 – Serum Markers

Alpha Feto protein		Beta HCG	
Raised	Normal	Raised	Normal
4	4	0	3

In our study only 8 patients were investigated for serum tumor markers. Of these 8 patients all of them underwent Serum Alpha feto protein levels while out of which 3 of them did Serum Beta hCG levels along with Serum AFP. But none of them did Serum LDH levels. In those patients who underwent Serum AFP levels, Result of 4 patients came out to be raised and remaining 4 came as in normal range. AFP levels are increased in each case of, pure embryonal cell carcinoma, yolk sac tumor, mixed germ cell tumor and teratoma respectively. AFP levels were normal in seminoma cases that were tested for serum tumor markers. Patient who investigated for Serum Beta hCG levels along with AFP levels turned out to be in normal range. Outcome of patients underwent Orchiectomy All of the patients were regularly followed-up for its clinical details and disease progress. As we have 3 outside laboratory cases outcome of them was not commented as detail data was not available.

Outcome of patients

Table 7 – Outcome of patients

Outcome	Number of cases	Percentage
Improved	55	87.5%
Expired	04	7%
Status Unknown	03	05.5%

DISCUSSION

In present study non neoplastic lesions constituted about 71% while neoplastic lesions constituted 29% which means that Non neoplastic lesions are more common than neoplastic lesions. We correlated our study with other 5 studies which are Patel MB et al¹⁵ (2013), Hemavati Reddy et al¹⁶ (2016), Reeta Dhar et al¹⁷ (2017) and Baidya R et al¹⁸ (2017).

In present study we received 18 neoplastic lesion. Among this 18 neoplastic lesions we have only 1 benign lesion comprising 5.5% and 17 malignant lesions comprising of 94.5%. We correlated our study with Hass GP et al¹⁹ (1986), Kressel K et al²⁰ (1988), Robertson GS et al²¹ (1995), and Beigh A et al²² (2017).

We also recorded prognosis of patients. Maximum i.e 55 out of 62 cases improved while 04 out of 62 cases expired. Out of these 04 cases, two were neoplastic cases, one of which was mixed germ cell tumor in 29 years old patient and yolk sac tumor in 9 years old patient while other two non neoplastic cases included a 23 years old known cases of carcinoma penis diagnosed as moderately differentiated SCC - Penis with right sided hydrocele and unremarkable testis and another case of 65 years old known cases of carcinoma prostate. We correlated our study with Robertson GS et al²³ (1995) and Beigh A et al²⁴ (2017).

In frequency of side involvement of Testicular lesions maximum were from right side compared with left and only few bilateral cases are seen. Laterality is compared with W. Duncan²⁵ (1987), Reddy and Ranganayakamma²⁶ (1966), Moghe K.V et al²⁷ (1970), Gupta S et al²⁸ (2015) and Beigh A et al²⁹ (2017) all this study are comparable with present study showing maximum number of cases involving right side of testies. While only Patel MB et al³⁰ (2013) and Gupta S et al³¹ (2015) have bilateral cases which are 2.35% and 4% respectively, which is also comparable with present studies bilateral cases constitutes 6.5%. In our study most common non neoplastic lesion was Hemorrhage and Necrosis of testies – Suggestive of testicular torsion. This lesion comprising of 34% of all non neoplastic lesions and this finding

correlates with studies such as Patel MB et al (2015)³²- 55.29% , Baidya R et al (2017)³³- 54.90%, Hemavati Reddy et al (2016)³⁴- 22.1% and Reeta Dhar et al (2017)³⁵- 23%.

Maximum cases of torsion are seen in 10-20 years of age group followed by 20-30 years of age group. Similar findings are seen in Patel MB et al (2015)³⁶.

In our study, we found 18 neoplastic cases out of which maximum cases presented in 31-40 years of age group i.e 07 cases(39%). Our study is correlated with Chakrabarti PR et al (2016)³⁷.

Most common malignant lesion in present study is seminoma. In seminoma most common age group was found to be in 30-40 years of age group our study shows concordance with study done by Mostofi FK et al (1979)³⁸ and Fonesca R et al (2000)³⁹.

Most common germ cell tumor in our study was seminoma. Seminoma comprising of 44% of germ cell tumors in present study which is compared with other studies like Moghe K.V et al (1970)⁴⁰ – 41.5% , Patel MB (2015)³- 40%, Gupta S et al (2015)¹⁴- 42% and Gupta A et al (2016)¹⁷ – 48%.

In present study NHL comprises of 5.5% of all neoplastic lesions and only case of lymphoma out of 18 neoplastic cases. Our findings are similar with Gupta S et al (2015)⁴¹

We reported case of Leiomyoma of testies which is very rare condition. Only one case is noted comprising of 5.5% of all neoplastic lesion and only benign case in 18 neoplastic cases. Similar case was reported by Kulloli V.S. et al (2011)⁴² and Albert PS et al (1988)²⁰

AFP levels are increased in pure embryonal cell carcinoma , yolk sac tumor and teratoma. AFP levels are normal in seminoma cases who performed serum markers. Patient who investigated for Serum Beta HCG levels along with AFP are also turned out to be in normal range. This findings are correlated with study done by Patel MB et al (2015)³ Sumit K et al (2017)²¹

In present study maximum i.e 55 cases(87.5%) out of 62 are improved while 04 (7%)out of 62 cases are expired in which includes two neoplastic cases mixed germ cell tumor in 29 years old patient and yolk sac tumor in 9 years old patient while two non neoplastic cases one with 23 years old known cases of carcinoma penis diagnosed as moderately differentiated SCC - Penis with right sided hydrocele and unremarkable testies and one with 65 years old known cases of carcinoma prostate. This findings show concordance with Feldman DRet al (2008)²²

CONCLUSION

We concluded that Majority of the testicular lesions were non neoplastic. Non neoplastic lesions are more common in 51-60 years of age group while neoplastic are common in 31-40 years of age group. Testicular swelling was main clinical complaint and right sided testicular involvement is common . Out of all non neoplastic cases testicular torsion was predominant finding. Neoplastic testicular cases showed a varied histomorphology. Germ cell tumors formed the bulk of testicular tumors. Among tumors seminoma was the commonest neoplasm. Histopathologic examination and routine hematoxylin and eosin staining can help in accurately diagnosing and determining the prognosis of these rare tumor and tumor like lesions of testis It is concluded that despite new techniques in imaging and tumor marker assay, the diagnosis of testicular tumors is dependent upon histopathological examination. This is demonstrated by an observable reduction in mortality for these patients.

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