



TESTICULAR & PARATESTICULAR LESIONS – A 2 YR STUDY AT A TERTIARY CARE HOSPITAL

Dr.Kavitha Devi Bhukya

Assistant Professor, Department of Pathology, Kakatiya Medical College Warangal, Telangana, India.

Dr.D.Srinivas

Department of Pathology, Kakatiya Medical College Warangal, Telangana, India.

Dr.Vandana.G

Assistant Professor, Department of Pathology, Kakatiya Medical College Warangal, Telangana, India.

Dr.Lokesh Rao Magar

Associate Professor, Department of Pathology, Kakatiya Medical College Warangal, Telangana, India.

Dr.S.Sandhya

HOD, Department of Pathology, Kakatiya Medical College Warangal, Telangana, India.

ABSTRACT

Background: Tumors of testis and Paratesticular tissues are rare in men. Most common in the middle age with an incidence of 0.5-2% of all malignancies.

Methods: This Study was conducted in Tertiary care hospital, Warangal, Telangana state. A 2 year study was performed from June 2015 to May 2017. Required clinical details were taken.

Results: A total of 42 cases of Testicular and Paratesticular neoplasms were included in present study. Out of these cases, Non neoplastic lesions are common and predominantly affecting the Right Testis (61.6%).

Conclusion: Testicular tumors are uncommon in our population. 6 of the biopsies consist of Undescended testis, none of them showed malignancies. Torsion Testis is the commonest of all Testicular Lesions. Histologically Seminoma is the the commonest Malignant neoplasm. Benign lesions were common in the Paratestis than the Malignant Lesions. Significant incidental finding of Microfilariae in biopsy of testis and clinician should always consider its possibility.

KEYWORDS : Testicular tumor, Seminoma, Germ cell tumor, Microfilariae

INTRODUCTION

The testes are specialized paired organs with both hormonal and reproductive functions. Testicular cancers are rare, with increasing incidence since the middle of twentieth century in many Western countries. Testicular tumors comprise about 1% of all cancers in men, but only about 0.1% of cancer deaths as majority are curable. The testicular tumors are almost entirely limited to three age groups, infancy and childhood, young adults and old age with peak incidence in 35-39 years. Both neoplastic and non neoplastic conditions affect the normal functioning capacity of testes.

MATERIALS & METHODS

Present study was conducted in the department of pathology. A 2-year study (Retrospective and Prospective) of 42 cases (38 Testicular and 4 Para testicular) were received at MGM Hospital, Warangal between June 2015 and May 2017. The relevant clinical details and investigations were obtained. Each specimen was subjected to detailed gross examination, and the histopathological features were noted on H & E stained slides. The results were tabulated and analyzed.

RESULTS

This study on Testicular & Paratesticular lesions was conducted for a period of 2 yrs between June 2015 to May 2017. There were a total of 42 cases of Testis (38 cases) and Paratestis (4 cases) Of these 42 cases 26 were Non neoplastic lesions and 16 cases were neoplastic lesions.

Most common non neoplastic lesion of Testis and Paratestis were in the age group of 0-20 yrs. Most common Malignant Neoplastic lesions were in the age group of 21-40 yrs. (Table no :1)

Table no : 1 Age incidence of testicular lesions

Sl. no	Age In yrs.	Non neoplastic lesions (N=26)		Neoplastic lesions (N=16)		
		No Of Cases	Percentage	No Of Cases Benign	No Of Cases Malignant	Percentage
1	0-20	10	38.48%	0	0	0
2	21-40	5	19.24%	2	6	8
3	41-60	8	30.76%	2	2	4
4	61-80	3	11.52%	1	3	4

1	0-20	10	38.48%	0	0	0	0
2	21-40	5	19.24%	2	6	8	50.0%
3	41-60	8	30.76%	2	2	4	25.0%
4	61-80	3	11.52%	1	3	4	25.0%

Figure no : 1 Non Neoplastic Lesions

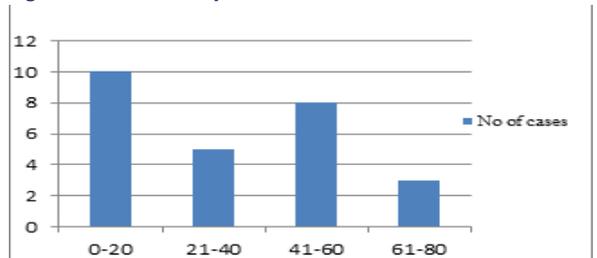


Figure no:2 Neoplastic Lesions

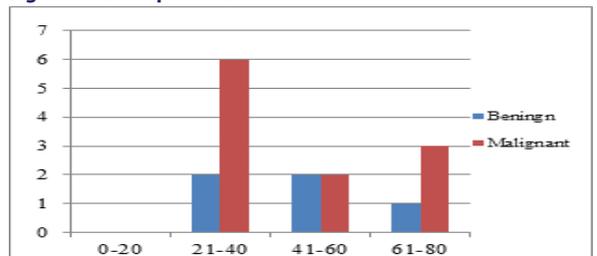


Table no:2 Laterality of testicular and paratesticular lesions

Sl. no	Side	Non neoplastic lesions (N=31)		Neoplastic Lesions (N=11)	
		No Of Cases	Percentage	No Of Cases	Percentage
1)	Right	18	58.06%	7	63.63%
2)	Left	13	41.93%	4	36.36%

Clinical presentations were studied. Non neoplastic and neoplastic lesions of testis and paratestis were commonly affecting the Right.

Testis (Table No:2)

Table no :3 Histological diagnosis of non neoplastic lesions of testis and paratestis

Sl. No	Hpe diagnosis	No Of Cases (N=26)	Percentage
1.	Congenital lesions i) Undescended Testis	5	19.2%
2.	Specific inflammation i) Microfilarial Epididymo orchitis	1	3.8%
3.	Non-Specific inflammation i) Non Specific Epididymo-orchitis ii) Testicular Abscess	5	19.3%
4.	Vascular Lesions i) Torsion & Infarction	12	46.2%

Common non neoplastic lesions of testis were Torsion and Infarction of testis constitute 12 cases (46%). Followed by Nonspecific Epididymo orchitis and undescended testis and 1 case of Microfilaria Epididymo orchitis identified (Table no:3)

Table no :4 Histopathological diagnosis of neoplastic lesions of testis and paratestis

Sl. No	HPE DIAGNOSIS	NO OF CASES (N=16)	PERCENTAGE
1.	Benign		
	i) Adenomatoid tumor of paratestis	1	6.25%
	ii) Para Testicular Lipoma	2	12.5%
	iii) Inflammatory Pseudo tumor of paratestis	1	6.25%
2.	Malignant		
	Germ cell Tumor i) Seminoma	8	50.0%
	ii) Mixed Germ cell tumors	3	18.75%
	iii) Mesothelioma	1	6.25%

Malignant tumors were common in testis than benign lesions. Most common malignant tumor was Seminoma, constitute 8 cases (50%). Followed by Mixed germ cell tumor-3 cases. In the Paratestis identified only Benign lesions, no Malignant cases were identified. 1 case of Mesothelioma was identified. (Table no 4).

Figure 3 – Gross image of testicular abscess

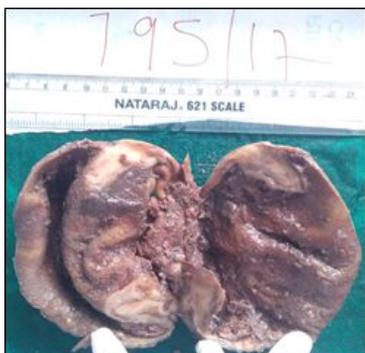
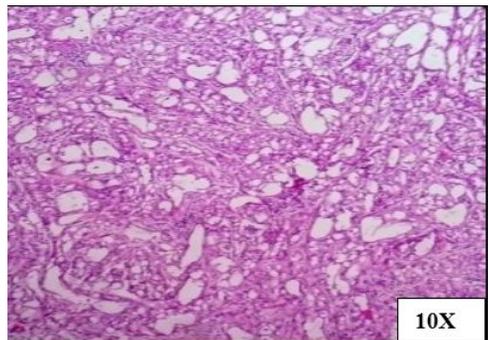


Figure 4 – Gross image of torsion testis

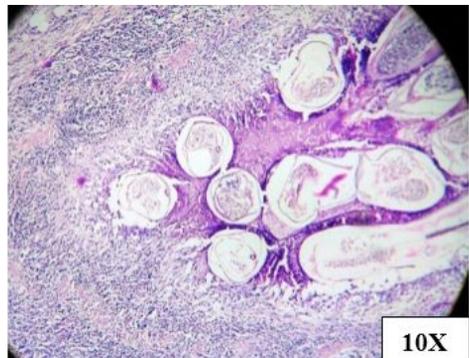


Figure no:5 Para testicular adenomatoid tumor



Tumor cells arranged in tubules, cysts and cords lined by cuboidal to flattened cells with vacuolated cytoplasm. No mitoses were seen.

Figure no:6 Microfilariae in testis



H and E Sections showing Gravid worms with internal organs and necrosis surrounded by granulation tissue comprising of eosinophil's and neutrophils

Figure no:7 Seminoma

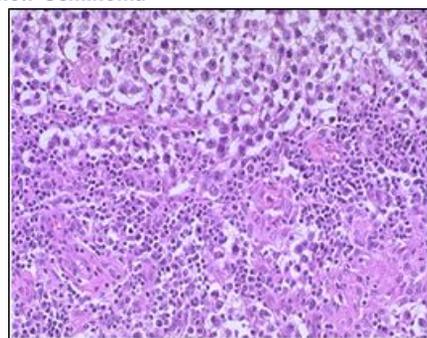
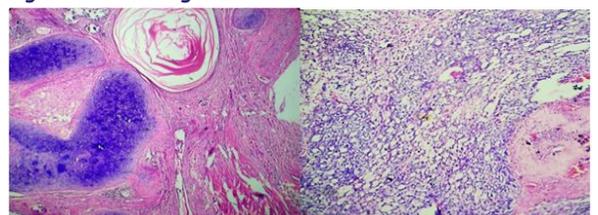


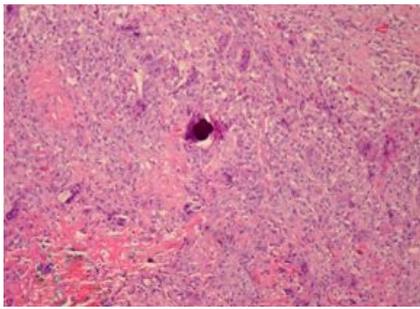
Figure 8: Mixed germ cell tumor

H and E Sections revealed Lobules of neoplastic Cut surface of Mixed Germ cell Tumor cells in an intervening stroma with characteristic lymphoid infiltrates. The seminoma cells are large with vesicular nuclei and pale watery cytoplasm.

Figure no:9 Mixed germ cell tumor



H&E of teratocarcinoma shows cartilage, keratin cysts, and undifferentiated cells of embryonal carcinoma in solid and tubular pattern with necrosis

Figure no:10 Mesothelioma

H and E sections showed neoplastic cells typically cuboidal with scant to moderate amounts of eosinophilic cytoplasm and bland cytologic features and necrosis

DISCUSSION

Testicular cancers are rare, with incidence rate ranging from 1/100,000 in Asian and African/ African-American populations to 9.2/100,000 in Denmark (Parkin et al., 1997)³. There is a marked discrepancy in the incidence of testicular tumors worldwide, with the Western countries⁴ showing a higher rate compared to African⁵ and Asian countries⁶. Bird K et al (1984) reported 4 cases of testicular infarct following acute testicular infections, and attributed it to obstruction of the adjacent testicular blood supply, causing focal or diffuse infarction of the testis or epididymis in the absence of torsion⁷. Present study, testicular infarct was common and presented as painful swelling; causes - trauma, torsion and vasculitis. Infarct usually appears in testes with ischemia of more than 12 hours. Present study there were 5 cases (19.3%) of chronic epididymo-orchitis, which was similar to Mathew et al (1981)⁸. In the Present study, 5 cases of undescended testes (19.2%) of the total testicular specimens, similar to Honark.et al (1987)⁹ and no malignancy was noted. Present study, **right side** involvement was predominant, seen similar to the studies by Gupta et al and Mahesh B Patel et al. Incidental finding of Microfilaria was found in 1 case of Testicular biopsy specimen and is common in Tropical countries like India¹⁰.

NEOPLASTIC LESIONS

Testicular and paratesticular neoplasms are relatively less compared to other cancers, and constitute 10.5% of all male reproductive cancers in India¹¹. According to Mostof al, germ cell tumors constitute more than 94% of testicular tumors¹¹. Among the germ cell tumors (GCT) **seminoma** is the most common which comprises 40% to 50% of all testicular GCTs¹². In the Present study, seminoma was the most common neoplasm constituting 50% of neoplastic tumors. Similar finding was recorded in studies conducted by various authors, Mushtaq et al, Gupta et al¹³. The 2nd most common testicular tumors were **mixed germ cell tumors**, noted by Karki S et al¹¹. In the Present study, 3 cases of mixed germ cell tumors, consisting of 2 cases of teratoma with embryonal carcinoma and a case of embryonal carcinoma with seminoma. Paratesticular tumors are masses with indolent growth pattern and in most cases they are benign¹⁴. Adenomatoid tumor is a benign tumor of mesothelial cells. A case of adenomatoid tumor of spermatic cord was noted in the present study, accounting for 5.60% of all tumors (neoplastic and non-neoplastic) in our study. In study by Pratap VK et al adenomatoid tumor accounted for 1.33% all the cases¹⁵. Adenomatoid tumor involves mostly upper or lower pole of epididymis, but other sites of male genital tract are also involved such as testis, spermatic cord and tunica albuginea¹⁶. In females, Fallopian tubes, ovaries and uterus are involved and rarely it affects adrenals, lymph nodes, pancreas, mediastinum and pleura¹⁷. Microscopic features of adenomatoid tumor comprise of tumor cells arranged in cords and tubules of cuboidal to columnar cells with vacuolated cytoplasm and fibrous stroma¹⁸. In the Present study, histological examination revealed the presence of neoplastic cuboidal cells having vacuolated cytoplasm with lymphoplasmacytic infiltrate.

CONCLUSION

Affection of testis is seen in a peak age group of reproductive years and its excision is disheartening. However an early diagnosis as in cases of acute epididymo-orchitis and testicular torsion can prevent undue excisional treatment. The incidence of testicular neoplasm remains low in India. Scrotal swelling is major presenting feature and there is right sided predominance in testicular involvement. Benign lesions were common in the Paratestis than the malignant lesions. Testicular tumors are seen in 3rd and 4th decade of life with Seminoma being commonest of all. Teratocarcinoma is most common among mixed germ cell tumor. Present study thus emphasizes the need for the **categorization** of the various neoplasms of the testis especially the mixed germ cell tumors as their recognition has important prognostic and therapeutic implications. An incidental finding of Microfilariae in biopsy of testis was found so clinician should always consider its possibility

REFERENCES

- Liu S, Wen SW, Mao Y, Mery L and Pouleau J (1999). Birth cohort effects underlying the increasing testicular cancer incidence in Canada. Canadian Journal of Public Health 90:176-80.
- Eble JN, Sauter G, Epstein JI and Sesterhenn IA (2004). Pathology and Genetics of Tumors of the Urinary System and Male Genital Organs, (Lyon, France: IARC Press) 218-249.
- Parkin DM, Whelan SL, Ferlay J, Raymond L, and Young J (1997). Cancer Incidence in Five Continents (PDF s online) VII (Lyon: IARC Scientific Publications) [Accessed 5 nov 2011].
- Walschaerts M, Huyghe E, Muller A, et al. Doubling of testicular cancer incidence rate over the last 20 years in southern France. Cancer Causes Controls. 2008;19:155-61.
- Chalya PL, Simbila S, Rambau PF. Ten- year experience with testicular cancer at a tertiary care hospital in a resource limited setting: a single centre experience in Tanzania. World Journal of Surgical Oncology. 2014;12:356-63.
- Stewart BW, Kleihues P. Cancers of the male reproductive tract. In: World cancer report. Lyon, France, IARC Press 2003:208-14.
- Bird K, Rosenfield AT. Testicular infarction secondary to inflammatory disease: demonstration by B-scan ultrasound Radiology. 1984;152:785-8.
- Mathew T. The pathologic spectrum of paratesticular adnexal diseases: A ten year review of surgical biopsies Singapore medical journal. 1981;22:342-46.
- Honark Hornak M, Pauer M, Bardos A, Ondrus D. The incidence of carcinoma in situ post pubertal undescended testis International urology and nephrology. 1987;19:321-325.
- Katiyar S, Kumar A, Ranjan R, Tandon A. "Filarial Dance Sign" with Cytological Detection of Microfilaria: Our Experience over a Two-Year Period. Int J Sci Stud 2015;3(8):35-39
- Karki S et al. Histopathological analysis of testicular tumours. Journal of Pathology of Nepal. 2012;2:301-4.
- Moch H, Humphrey P, Ulbright T. WHO classification of tumours of the urinary system and male genital organs. 4th ed. Lyon: IARC Press; 2016.
- Gupta S, Shrivastava A. Clinicopathologic study of testicular tumours: a review of 50 cases. Int J Health Sci Res. 2015;5:324-9.
- P. I. Román Birmingham, F. J. Navarro Sebastián, J. García González, et al A. Paratesticular tumours. Description of our case series through a period of 25 years. Arch Esp Urol 2012;65:609-15.
- Pratap VK, Agarwal S. Testicular neoplasms. India Journal of cancer 1971:40-53.
- Eble J.N., Sauter G., Epstein J.I., Sesterhenn I.A. (Eds.): World Health Organization Classification of Tumours. Pathology and genetics of tumours of the urinary system and male genital organs. IARC Press: Lyon 2004.
- Timonera ER, Paiva ME, Lopes JM et al. Composite adenomatoid tumor and myelolipoma of adrenal gland: report of 2 cases. Arch Pathol Lab Med 132;2008:265-7
- Amin W, Parwani AV. Adenomatoid Tumor of Testis. Clin Med Pathol. 2009;2:17-22