



Study Of Histopathological Patterns Of Testicular And Paratesticular Lesions

¹Dr.Rokkala Eunice Johannas., ²Dr .Vamsya Raj, ³Dr .Poosarla Divya.,

⁴Dr .Kanchana P.V.N., ⁵Dr .K.V.Murali Mohan

MBBS, M.D, ¹2nd year Postgraduate, ^{2,3}Associate Professor, ⁴Professor, ⁵Professor & HOD, Maharajah's Institute of Medical Sciences, Nellimarla, Andhra Pradesh

***Corresponding Author:**

Dr.Rokkala Eunice Johannas

MBBS, 2nd year Postgraduate, Maharajah's Institute of Medical Sciences, Nellimarla, Andhra Pradesh

Type of Publication: Original Research Paper

Conflicts of Interest: Nil

Abstract

Aim: To evaluate the histopathology of testicular and para-testicular lesions presenting in a tertiary care.

Methods: This is a cross sectional study of 37 cases of orchidectomy specimens, testicular biopsies and paratesticular lesions received in the department from December 2022 to November 2023.

Results: Non neoplastic testicular lesions were more common than neoplastic with majority in the second and third decade.

Conclusion: Non-neoplastic testicular lesions were more common than neoplastic lesions.

Keywords: Histopathology, Paratesticular, Testis

Introduction

The normal adult testis is an ovoid paired male organ, each measuring 4.5x2.5x3cm and weighing approximately 20 grams.¹ It is homologous with the ovary of the female genital system.² It is a specialized paired organ with both hormonal and reproductive functions.³

Disorders of the testis could be congenital or acquired (Inflammatory or neoplastic). Also be categorized into benign, malignant testicular diseases and male infertility.¹ Their common findings are scrotal swelling, pain in scrotum and abdominal lump.

Both neoplastic and non neoplastic conditions affect the testis. Although non neoplastic testicular lesion are more common. Non-neoplastic lesions include cryptorchidism (undescended testis), epididymo-orchitis, torsion of testis, testicular atrophy, epidermoid cysts, infections like tuberculosis, malakoplakia, mumps and syphilitic orchitis.²

Para testicular region is a complex anatomical area which includes the contents of spermatic cord,

epididymis and vestigial remnants.⁴ These are the tumors of rete testis, tubuli efferentes/epididymis, mesothelium, soft tissue and metastatic tumors of this region. It accounts for about 30% of all scrotal masses. Lipoma and adenomatoid tumors are the most common benign tumors.⁵

The incidence varies across the globe with higher occurrence in the developed & western countries, India has the lowest standardized incidence.¹ About 1% of one year old boys are affected with undescended testis.²

Germ cell tumour is more likely to develop in an undescended testis. Atrophy of testis develop from cryptorchidism.² Testicular carcinoma follows a reverse pattern to most cancers with decreasing incidence rate with increasing age.⁴

Materials And Methods

The present study on " Study of Histopathological patterns of Testicular and Paratesticular lesions" was carried out in our centre. All orchidectomy

specimens were received from Department of Surgery. In my study I excluded the specimen with prostatic carcinoma with prophylactic orchidectomy having normal testis histopathologically. Total duration of the present study was 12 months and total 37 cases were carried. Age, clinical details and indications of surgery/biopsy were noted from the requisition forms obtained from the record section of the department of pathology.

The specimens received were fixed in 10% neutral buffered formalin and processed by routine histotechniques using an tissue processor and sections were stained with Haematoxylin and Eosin. Stained slides examined for final diagnosis which were then classified and studied as per WHO Histological classification of Testicular tumors (Figure 1,2&3).

Results And Observations

A total of 37 cases of testicular and para testicular lesions received in the department over a period of 12 months were included in the study. It comprises 33 Non-neoplastic lesions, Four Neoplastic lesions as discussed in (Table 2 & 3). Non-neoplastic lesions were seen among all age groups, but majority were found to be among 16-85years of age group. 21 cases were found to be Unilateral, 12 cases have Bilateral involvement (Table 2). Neoplastic lesions were seen among all age groups, but majority were seen between 41- 50 years of age. Youngest patient was 16 years old and eldest patient was 85 years old. Most common symptom is scrotal swelling followed by scrotal pain, testicular pain, weight loss and anorexia.

Figure 1: Seminoma Testis, shows sheets of cells divided into lobules by delicate septa (H & E X 400)

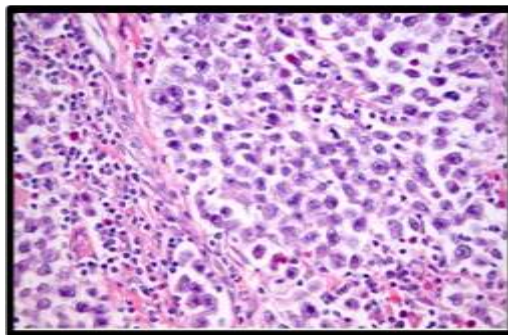


Figure 2 : Yolk sac tumor, consists of a mesodermal core with a central capillary (H & E X 400)

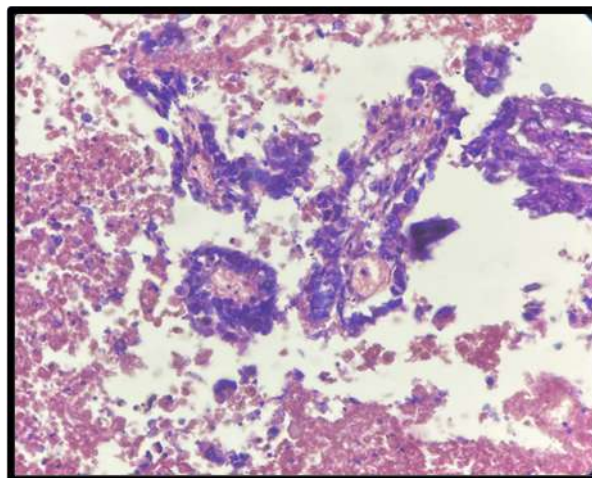


Figure 3 : Atrophic Testis, section shows remnants of seminiferous tubules replaced by collagen deposition (H & E X 400)

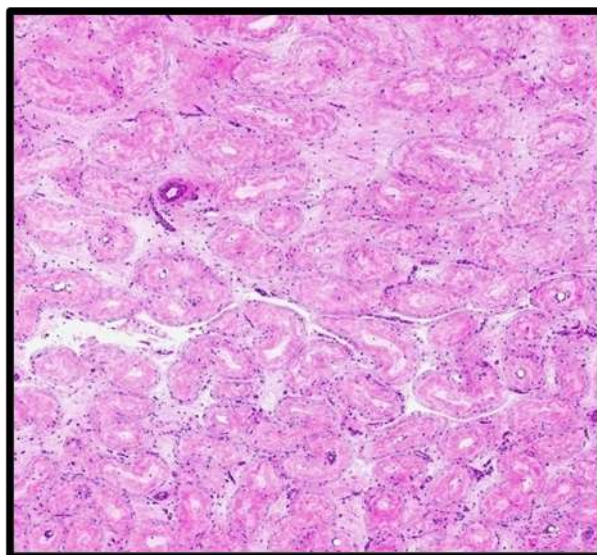


Table 1: Age group distribution among Testicular and Para testicular lesions

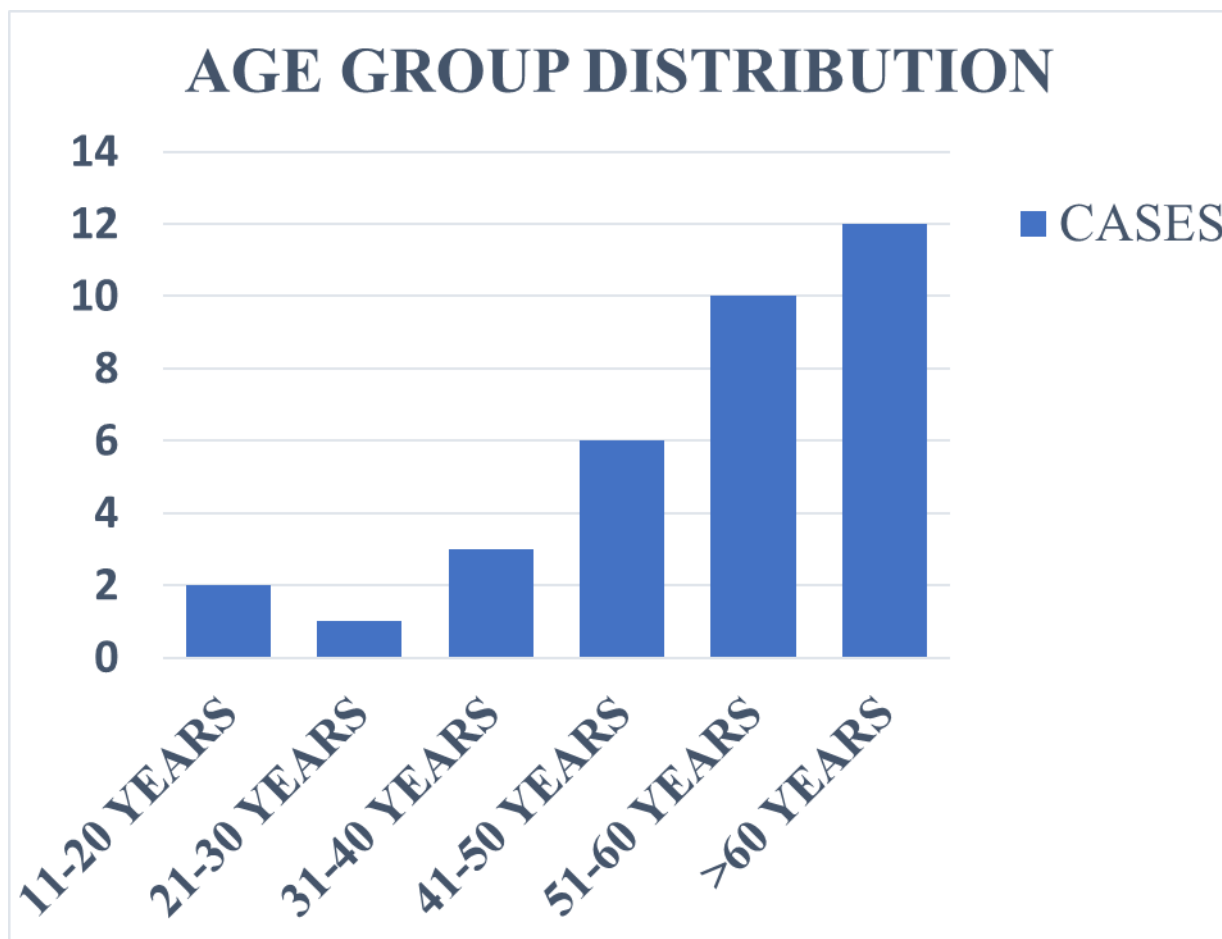


Table 2 : Histopathological Diagnosis of Non- Neoplastic Testicular & Para testicular lesions

Serial no	Histological diagnosis	Number of cases	Percentage												Percentage
1	Tuberculous Epididymoorchitis	3	25%												9.09
2	Non specific Inflammatory lesion	4	33%												12.1
3	Pyocele with Epididymoorchitis	3	25%												9.09
4	Testicular Torsion	1	8%												3.03
5	Atrophic Testis	1	8%												3.03
6	Hydrocele	12	36.30%												36.3
7	Spermatocele	3	9.09%												9.09
8	Pyocele	6	18.10%												18.1
	TOTAL	33													100

Table 3 : Histopathological diagnosis of Neoplastic testicular and Paratesticular lesions

Serial no.	Histological diagnosis	Number of cases	Percentage

1	Benign		
	Lipoma	1	25%
2	Malignant		
	Classical Seminoma	1	25%
	Spermatocytic Seminoma	1	25%
	Yolk sac tumor	1	25%

Table 4 : Comparitive analysis of present study with other studies

Study	Testicular Neoplasia	Para testicular Neoplasia
Present study	25%	33.6%
Musataq et al	35.5%	34.8%
Gill et al	37.8%	45%

Discussion

Study of 37 cases of Testicular and Paratesticular lesions was done between December 2022 to November 2023 in our institute. Less number of cases were studied as we receive low quantity of

cases. Out of 37 cases - Inflammatory disorders 10(27%), Non inflammatory non neoplastic lesions 23 (62.1%), Tumors/Neoplastic 4 (10.8%)as discussed in (Table 2&3).Comparative analysis of incidence is done with various other studies and with present study(Table 4).In Non-Neoplastic Testicular

lesions most common are Non Specific epididymo-orchitis (33.3%), Tuberculous epididymo-orchitis (25%). Which is similar to the study done by **Abba k et al.**⁷In my study, most common Non-neoplastic Paratesticular lesions is hydrocele (57.1%) which is similar in **Abba K et al.**⁷

In my study 33% of all Testicular and Paratesticular neoplasia are Germ Cell Tumors which is similar to study done by **Musataq et al & Gill et al.**⁸

The study done by various authors regarding incidence of benign and malignant lesions were compared with my study. In our study, malignant lesions constituted 8.1% and benign lesions constituted 2.7% .

Deotra Aet al. showed Seminoma is commonest in the 3rd and 4th decades⁹. In our study 2 out of 4 cases of Seminoma in 61-70 year age group.

In our study, out of 4 cases, 3 were found to be malignant cases - 1 case of Classical Seminoma, 1 case of Spermatocytic Seminoma, 1 case of Yolk sac tumor.1 case of lipoma (Benign) as discussed in (Table 3).

In the study, the age incidence of Non-neoplastic testicular lesions was seen in 2nd,3rd,4th,5th and 6th decade of life. Maximum incidence was commonly found between 21 to 30 years of age (Table 2). Out of 37 cases, 3(8.1%) cases of Tuberculous epididymo-orchitis . Age was ranging from 50-60 years. Mean age was found to be 49.6% years which is similar to **Suankwan U et al.**¹⁰ There were 4 (10.8%) cases of Non -specific Inflammatory lesions. Age ranging from 22-85 years which is similar to the study done by **Kaver I et al.**⁴Torsion Testis, constituted one case out of 37 cases (2.7%) in our study. Age ranging from birth to 60 years and mean age is 26.5years,which is similar to the study done by **Cuckow et al.**¹¹ The age incidence of neoplastic lesions in 3rd,4th& 5th decade were 84%,which is similar to the study done by **Reddy and Ranaganayakamma**¹² showed 89.6% which coincides with our study. Other studies done - **Moghe et al** and **Collins and Pugh**⁶showed 78.5% which coincides with our study.

Conclusion

Thus early intervention in cases of testicular and para-testicular lesions, translates to longer life

expectancy of patients with decreased morbidity and mortality. Proper and complete neonatal examination for testicular descent should be mandatory to avoid late presentations and future malignancies.

Despite new techniques and in imaging and tumor marker assay, the diagnosis of testicular lesions is primarily dependent upon **Histopathological examination.**

References

1. Kour B, Singh S, Singh R. Histomorphological patterns of testicular and paratesticular lesions in a tertiary care centre. *International Journal of Research and Review*. 2020; 7(1): 16-20.
2. Charak A, Ahmed I, Sahaf BR, Qadir R, Rather AR. Clinico-pathological spectrum of testicular and paratesticular lesions: a retrospective study. *Int J Res Med Sci* 2018;6:3120-3.
3. Gaikwad Sheela L, Patki Supriya P. Clinico-pathological study of testicular and paratesticular lesions. *International Journal of Contemporary Medical Research* 2017;4(3):610-613.
4. Deychen Myes¹, Smita Shah², Hansa Goswami³. (2020). Histopathological Study of Testicular and Paratesticular Lesions in a Tertiary Care Hospital. *International Journal of Contemporary Pathology*, 6(1), 17–21.
5. Çoban G, Yıldız P, Kiran T, Ersöz C. Histopathological features of paratesticular solid tumors: 5 years experience. *İKSSTD* 2020;12(2):130-5.
6. Collin and Pugh, Cell of origin of Testicular Tumor *Journal* 1964, 36(2)1;11
7. Abba k Tahir MB Dogo HM, Nggada HA, Testicular and Paratesticular Non-neoplastic lesion in University of Maidugiri teaching Hospital, 2016; 13(1):39-44
8. Mustaq S, Jamal S, Mamoon N, Akbar N, Khadim T. The pathological spectrum of malignant testicular tumors. *J Pak Med Assoc*. 2007; 57:499-500
9. Deotra A, Mathur DR, Vyas MC. A 18 years study of testicular tumours in Jodhpur, western Rajasthan. *J Postgrad Med*. 1994;40:68-70

10. Suankwan U et al , southeast asian J TropMed public health 2012 Jul; 43(4):951-958
11. Cuckow and Frank 2000 cuckow PIM, Frank JD: Torsion of testis ,86 (2000), 340-354
12. Reddy DB, Ranganayakamma , Review of 56 cases of testicular tumors , Indian J cancer 1966; 3:255- 271.