International Journal of Research in Medical Sciences
Charak A et al. Int J Res Med Sci. 2018 Sep;6(9):3120-3123
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20183656

Original Research Article

Clinico-pathological spectrum of testicular and paratesticular lesions: a retrospective study

Annu Charak[1]*, Irfan Ahmed[2], Bushra Rashid Sahaf[1], Rehana Qadir[1], A. R. Rather[1]

[1]Department of Pathology, Sher-i-Kashmir Institute of Medical Sciences, Medical College and Hospital, Bemina, Srinagar, Jammu and Kashmir, India
[2]Department of Medicine, Sher-i-Kashmir Institute of Medical Sciences, Soura, Srinagar, Jammu and Kashmir, India

Received: 07 July 2018
Accepted: 31 July 2018

***Correspondence:**
Dr. Annu Charak,
E-mail: dr.annucharak@gmail.com

ABSTRACT

Background: Both neoplastic and non neoplastic conditions affect the testis**.** Although non neoplastic testicular lesions are more common, still most of the studies were done on testicular neoplasms only. Hence the present study was undertaken to study histopathological spectrum of testicular and paratesticular lesions, their age distribution and clinical presentation.
Methods: This is a retrospective study of 77 cases of orchidectomy specimens, testicular biopsies and paratesticular lesions received in the department from Jan 2015 to June 2018.
Results: Non neoplastic testicular lesions were more common than neoplastic (90.1% Vs 9.8%) with majority in the second and third decade. Undescended testis comprised 46.1% of the total orchidectomy specimens followed by Torsion/Infarction testis (15.3%). None of the undescended testis showed tumour unlike western countries. Majority of patients presented with empty scrotum (31.16%) and testicular/scrotal swelling (18.11%). Only 5 cases of testicular neoplasm were diagnosed during the study period amounting to only 1.42 cases per year. All were germ cell tumours (4 classic seminoma and 1 yolk sac tumour).
Conclusions: Non neoplastic testicular lesions were more common than neoplastic lesions. Complete neonatal examination for testicular descent should be mandatory to avoid late presentations and future malignancies. Germ cell tumours formed the bulk of testicular tumours.

Keywords: Germ cell tumour, Orchidectomy, Paratesticular lesions, Seminoma, Torsion testis, Undescended testis

INTRODUCTION

Testis is a male gonad which is homologous with the ovary of the female genital system. Testis is a unique and important organ of the male reproductive system.[1] Testicular lesion usually present with scrotal swelling, pain in scrotum and abdominal lump. Both neoplastic and non neoplastic conditions affect the testis. Non neoplastic testicular lesions include cryptorchid (undescended) testis, testicular torsion, testicular atrophy, epidermoid cysts, infections of testis like tuberculosis, malakoplakia and vasculitis.[2]

About 1% of one-year old boys are affected with undescended testis.[3] A germ cell tumour is more likely to develop in an undescended testis than a normally placed testis. Atrophy of testis may develop from crptorchidism, infections like mumps, liver cirrhosis, radiation therapy, chemotherapy, estrogens administration, AIDS and exposure to environmental toxins.[4]

Though the testicular tumours account for less than 1% of all malignancies in males, they constitute the fourth most common cause of death from neoplasia in younger males.[5] Its incidence has been increasing in the western countries since the middle of twentieth century.[6] There is a definite geographic and racial distribution in testicular tumours and its age distribution is also distinct from other tumours.[7] The present study was undertaken to study histopathological spectrum of testicular and paratesticular lesions, their age distribution and clinical presentation from one of the tertiary care hospitals of Kashmir valley.

METHODS

The retrospective study was conducted in the department of pathology SKIMS Medical college and hospital Bemina, Srinagar, J and K, India over a period of three years and six months from January 2015 to June 2018. There were total of 77 cases. It comprises 52 orchidectomy specimens, 20 testicular biopsies and 5 paratesticular swellings.

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 corresponding histopathology slides were also retrieved and reviewed wherever required.

The specimens received were fixed in 10% neutral buffered formalin and processed by routine histo-techniques using an automated tissue processor and sections were stained with Haematoxylin and Eosin. Ziehl-Neelsen (ZN) staining was done wherever required for detection of acid fast bacilli (AFB). Immuno histochemistry (IHC) was done wherever necessary. Data was analysed using the SPSS Version 20 and presented as frequency and percentage. Testicular tumours were classified according to WHO classification (2004).[8]

RESULTS

A total of 77 cases of testicular and paratesticular lesions received in the department over a period of three years and six months were included in the study. It comprises 52 orchidectomy specimens, 20 testicular biopsies and 5 paratesticular swellings.

Table 1: Mode of presentation.

Clinical presentation	Number of cases	%
Empty scrotum	24	31.16%
Infertility/azoospermia	20	25.97%
Scrotal/testicular swelling	14	18.18%
Testicular pain	10	12.98%
Scrotal swelling+pain+fever	04	5.19%
As part of hernia repair or treatment	05	6.49%
Total	77	100%

Table 1 shows the mode of presentation. The most common presenting complaint was empty scrotum (31.16%) followed by scrotal/testicular swelling (18.11%) and testicular pain (12.98%). About 6.41% of orchidectomies specimens received were part of hernia repair or treatment. The histopathological spectrum of orchidectomies specimen along with age distribution is summarized in Table 2.

Table 2: Histopathological spectrum of orchidectomy specimens along with age distribution.

Testicular lesions	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Total (%)
Undescended testis	04	08	06	04	01	01	0	0	24 (46.1%)
Atrophic testis	0	0	0	0	0	02	0	0	02 (3.8%)
Torsion/infarction testis	0	04	03	0	0	01	0	0	08 (15.3%)
Testicular abscess	0	0	02	0	0	02	0	0	04 (7.6%
Granulomatous orchitis	0	0	0	0	01	0	0	0	01 (1.92%)
Leydig cell hyperplasia	0	0	0	01	0	0	0	0	01 (1.9.2%)
Miscellaneous (hernia, hydrocele)	0	0	01	01	01	02	01	01	07 (13.4%)
Seminoma –classic	0	0	01	0	01	0	02	0	04(7.6%)
Yolk sac tumour	0	01	0	0	0	0	0	0	01 (1.92%)
Total	04	13	13	07	03	08	03	01	52 (100%)

Undescended testis comprised 46.1% of the total orchidectomies received. It was followed by torsion/infarction testis (15.3%) and testicular abscess (7.6%). Atrophic testis was noted in 3.8% of orchidectomies specimens received. A single case of granulomatous orchitis and leydig cell hyperplasia was seen. AFB was not detected by ZN staining. Orchidectomies formed the part of treatment in 2 cases (3.8%) of hydrocele.

Only 5 cases (9.6%) of testicular neoplasm were diagnosed during the study period amounting to only 1.42

cases per year. All the 5 cases were germ cell tumour with age range of 15-67 years. Seminoma (n=4, 80%) was the commonest neoplasm followed by yolk sac tumour (n=1, 20%). In our study, none of the orchidectomy specimen received for undescended testis showed tumour.

About 33% cases of undescended testis were noted in the 11-20 years age group and 25% in 21-30 years age group. Age range of 6 to 55 years was noted. Torsion/infarction testis was mostly observed in the second decade of life (50%) followed by third decade (37.5%). Among testicular abscess, 2 cases each were seen in the age group of 21-30 and 51-60 years. In contrast to other studies, 2 cases (50%) of classic seminoma were noted in the elderly groups of patients of 61-70 years. A single case of yolk sac tumour was noted in a 15-year-old boy.

About 98.07% (n=51) of orchidectomies were unilateral and 1.92% (n=1) was bilateral with 52.94% right sided and 47.05% left sided.

All the 20 testicular biopsies received were for evaluation of infertility/azoospermia. Out of these, 9 cases were in the 21-30-year age group and 11 cases in 31-40 year age group. Atrophic testis (n=5, 25%) was the most common histopathological diagnosis followed by maturation arrest (n=4, 20%) and sertoli cell only syndrome (n=2, 10%). Normal spermatogenesis was seen in 2 cases (10%). About 1 case (5%) each of granulomatous orchitis and leydig cell hyperplasia was observed. Biopsy was considered unsatisfactory in 5 cases (25%) as only epididymal tissue was received.

Among paratesticular swellings, 2 cases of epididymal cyst, 1 case each of adenomatoid tumour and spermatocele were seen in 41-50-year age group. A single case of inflammatory leiomyosarcoma of epididymis was noted in a 34-year-old male which was confirmed by IHC.

DISCUSSION

Both neoplastic and non neoplastic conditions affect the testis. In our study, non neoplastic lesions of testis were more common than neoplastic lesions (90.1% vs. 9.8%) which are correlating with other Indian studies as shown in Table 3.[5,9-11]

Table 3: Comparison of percentage incidence of benign and malignant lesions.

Authors (years)	Benign	Malignant
Karki S et al[11] (2012)	88.5%	11.4%
Patel MB et al[5] (2015)	85%	15%
Deore KS et al[10] (2015)	91.7%	8.2%
Mansi Sharma et al[9] (2017)	93%	7%
Present study (2018)	90.1%	9.8%

We found undescended testis (46.1%) as the most common non neoplastic lesion. However, none of the cases showed malignancy. A study by Sharma M et al, also showed the same results.[9] In other studies from India, inflammatory lesions and torsion testis is the most common non neoplastic lesion.

In our study, undescended testis and torsion testis was commonly noted in second decade of life which is similar to study by Patel MB et al.[5] Comparison of histopathological types of non neoplastic testicular lesions among other similar studies is given in Table 4.[2,5,9,12]

Table 4: Comparison of histopathological types of non neoplastic testicular lesions.

Testicular lesion	Reddy H et al[2] (n=86)	Mansi Sharma et al[9] (n=53)	Patel MB et al[5] (n=85)	Gaikwad SL et al[12] (n=120)	Present study (n=77)
Undescended testis	14%	39.62%	8.24%	15.6%	46.1%
Torsion/infarction testis	22.1%	18.86%	55.29%	12.8%	15.3%
Testicular abscess	19.76%	5.66%	16.47%	18.7%	7.6%
Granulomatous orchitis	3.5%	3.77%	9.4%	6.8%	2.59%
Atrophic testis	-	16.98%	-	9.80%	9.09%

Testicular tumours were found to be rare in our study also, as described in the literature. All the 5 cases of neoplasm belonged to germ cell tumour category with 80% classical seminoma and 20% yolk sac tumour. Thus, amounting to only 1.42 cases per year. According to Mostofi et al, germ cell tumours constitute more than 94% of testicular tumours.[13] Studies by Moghe KV et al, and Deotra A et al showed seminoma commonest in the third and fourth decades.[14,15] In our study, we found 2 out of 4 cases of classic seminoma in 61-70-year age groups.

In the study, we found high incidence of undescended testis and its late presentation. It can be due to the ignorance of the rural population which the hospital caters and referral of advanced cases of malignancies to the other tertiary care hospitals of Kashmir.

CONCLUSION

Non-neoplastic lesions of testis are more common than neoplastic. All the testicular and paratesticular specimens should be thoroughly grossed and examined to rule out neoplasia. Proper and complete neonatal examination for testicular descent should be mandatory to avoid late presentations and future malignancies. Germ cell tumours formed the bulk of testicular tumours in our study.

ACKNOWLEDGEMENTS

Authors would like to thank the technical staff of the records section, filing sections and histopathology lab of department of pathology for their kind co-operation.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Chaurasia BD. Male Reproductive System. In Human Anatomy, Volume 2. 6th ed. New Delhi: CBS Publishers and Distribution. 2013:266-296.
2. Reddy H, Chawda H, Dombale VD. Histomorphological analysis of testicular lesions. Ind J Pathol Oncol. 2016;3(4):558-63.
3. Rozanski TA, Bloom DA. The undescended testis. Theory and management. The Urologic clinics of North America. 1995 Feb;22(1):107-18.
4. Rosai J. Male reproductive system. In: Rosai and Ackerman's Surgical Pathology. 10th ed. Vol 1. Elsevier. 2011:1335-1336.
5. Patel MB, Goswamy HM, Parikh UR, Mehta N. Histopathological study of testicular lesions. Gujarat Medical Jr. 2015;70(1):41-6.
6. Bergstorm R, Adami HD, Mohner M, Zatooski W, Storm H, Ekbom A, et al. Increase in testicular cancer incidence in six European countries: a birth cohort phenomenon. J Natl Cancer Inst. 1996;88:727-33.
7. Liu S, Wen SW, Mao Y, Mery L, Pouleau J. Birth cohort effects underlying the increasing testicular cancer incidence in Canada. Can J Public Health. 1999;90:176-80.
8. Eble JN, Sauter G, Epstein JI, Sesterheim IA. Pathology and genetics of tumours of the urinary system and male genital organs. Lyon: IARC Press;2004.
9. Sharma M, Mahajan V, Suri J, Kaul KK. Histopathological spectrum of testicular lesions-A retrospective study. Indian J Pathol Oncol. 2017 Jul;4(3):437-41.
10. Deore KS, Patel MB, Gohli RP, Delvadiya KN, Goswami HM. Histopathological analysis of testicular tumours: a 4-year experience. Int J Med Sci Public Health. 2015;4:554-7.
11. Karki S, Bhatta RR. Histopathological analysis of testicular tumors. J Pathol Nepal. 2012 Jan 1;2(4):301-4.
12. Gaikwad SL, Patki SP. Clinico-pathological Study of Testicular and Paratesticular Lesions. Int J Cont Med Res. 2017;4(3): 2454-7379.
13. Mostofi FK, Price EB. Jr. Tumours of the male genital system. Atlas of Tumour Pathology, Fascicle 7, Series 2. Washington, DC: Armed Forces Institute of Pathology. 1973:1186-1200.
14. Moghe KV, Agarwal RV, Junnarkar RV. Tumours of the testis. Indian J Cancer. 1970:90-97.
15. Deotra A, Mathur DR, Vyas MC. A 18 years study of testicular tumours in Jodhpur, western Rajasthan. J Postgrad Med. 1994;40:68-70.

Cite this article as: 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.