International Journal of Research and Review
Vol.7; Issue: 1; January 2020
Website: www.ijrrjournal.com
Original Research Article *E-ISSN: 2349-9788; P-ISSN: 2454-2237*

Histomorphological Patterns of Testicular and Paratesticular Lesions in a Tertiary Care Centre

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ABSTRACT

BACKGROUND: Disorders of the testis could be congenital or acquired (inflammatory or neoplastic). It can also be categorized into benign testicular diseases, malignant testicular diseases, and male infertility. Testicular and paratesticular tumors are rare in men though they constitute the most common solid malignancies in men aged between 15 and 34 years. The aim of this study is to determine the pattern and age distribution of testicular and paratesticular lesions in a tertiary care centre of Jammu region.

MATERIALS AND METHODS: This study includes testicular and paratesticular specimens that were histologically diagnosed in the Department of Histopathology, GMC Jammu over a period of 1 year. Data were extracted from the departmental registers, patient request forms, and duplicate copies of histology reports of all cases.

RESULTS: A total of 53 cases of testicular and paratesticular lesions received in the department of Pathology over a period of one year were included in the study. Testicular lesions were 36 in number. 4 were malignant which included cases of teratoma (1), seminoma(2) and yolk sac tumor(1). Other cases included undescended testis (11), testicular atrophy(8), testicular torsion(10) and testicular abscess(3). Paratesticular lesions were 17 in number which included 13 lesions of scrotum and 4 lesions of epididymis.

CONCLUSION: Non-neoplastic lesions of testis were more common than neoplastic ones. Among the neoplastic lesions germ cell tumours were in majority. All the testicular and paratesticular specimens should be carefully grossed and histopathologically examined to rule out any malignancy.

Keywords: Testis, Paratesticular lesions, Seminoma, Non-neoplastic

INTRODUCTION

The normal adult testis is an ovoid paired organ, each measuring 4.5 × 2.5 × 3 cm, and weighing approximately 20 grams. They are suspended within scrotal sacs by spermatic cords. [1] The testis is covered by a capsule composed of an outer tunica vaginalis lined by mesothelium, the collagenous tunica albuginea, and the inner tunica vasculora. The posterior portion of the testis not covered by a capsule is called the mediastinum and contains blood vessels, nerves, lymphatics, and the extratesticular rete testis. The major function of the testis is production of spermatozoa and secretion of testosterone. [2]

Disorders of the testis could be congenital or acquired (inflammatory or neoplastic). It can also be categorized into benign testicular diseases, malignant testicular diseases, and male infertility. [3] Testicular and paratesticular tumors are rare in men though they constitute the most common solid malignancies in men aged between 15 and 34 years. [4,5]

Testicular cancer represents 1% of malignancies in men. [6] The incidence varies across the globe with reportedly higher occurrence in the developed and Western countries. India has the lowest age-standardized incidence of 0.5/100,000 men. [7] There is a definite geographic and racial distribution in testicular tumours and its age distribution is also distinct from other

tumours. [8] Tissue samples of the testes received for surgical pathologic examination include testicular biopsies, and unilateral and bilateral orchidectomy specimens.
The aim of this study is to determine the histopathological pattern and age distribution of testicular and paratesticular lesions in a tertiary care centre of Jammu region.

MATERIALS AND METHODS

This study includes testicular and paratesticular specimens that were histologically diagnosed in the Department of Histopathology, GMC Jammu over a period of 1 year. These specimens were received in 10% buffered formalin, grossed and autoprocessed. Paraffin-embedded sections (at 2–3 µm) were routinely stained with hematoxylin and eosin stains and microscopically examined. Data were extracted from the departmental registers, patient request forms, and duplicate copies of histology reports of all cases.

RESULTS

A total of 53 cases of testicular and paratesticular lesions received in the department of Pathology over a period of one year were included in the study. Majority of the lesions were of testis.

TABLE 1: TESTICULAR LESIONS

TESTIS	NUMBER OF CASES	PERCENTAGE
Undescended testis	11	20.7
Testicular atrophy	8	15.1
Testicular torsion	10	18.9
Testicular abscess	3	5.6
Teratoma	1	1.9
Seminoma testis	2	3.8
Yolk sac tumor	1	1.9
TOTAL	36	67.9

Testicular lesions were 36 in number. 4 were malignant which included cases of teratoma(1), seminoma(2) and yolk sac tumor(1). Other cases include undescended testis(11), testicular atrophy(8), testicular torsion(10) and testicular abscess(3).

TABLE 2: SCROTAL LESIONS

SCROTUM	NUMBER OF CASES	PERCENTAGE
Hydrocoele	7	13.2
Varicocele	2	3.8
Idiopathic calcinosis	2	3.8
Epidermal inclusion cyst	2	3.8
TOTAL	13	24.5

13 cases were of scrotum including cases of hydrocoele(7), varicocele(2), idiopathic calcinosis (2) and epidermal inclusion cyst(2).

TABLE 3: EPIDIDYMAL LESIONS

EPIDIDYMIS	NUMBER OF CASES	PERCENTAGE
Epididymal cyst	3	5.6
Filariasis epididymis	1	1.9
TOTAL	4	7.5

Epididymal lesions were 4 in number which includes 3 cases of epididymal cyst and 1 case of filariasis.

TABLE 4: SPECTRUM OF TESTICULAR AND PARATESTICULAR LESIONS ALONG WITH AGE DISTRIBUTION

LESIONS	0-15 yrs	16-30 yrs	31-45 yrs	46-60 yrs	>60 yrs	TOTAL
Undescended testis	7	4				11
Testicular atrophy	3	2	1	1	1	8
Testicular torsion	3	6			1	10
Testicular abscess		1	2			3
Teratoma	1					1
Seminoma testis		2				2
Yolk sac tumor	1					1
Hydrocoele	2		4		1	7
Varicocele			1		1	2
Idiopathic calcinosis		2				2
Epidermal inclusion cyst		2				2
Epididymal cyst		1		1	1	3
Filariasis epididymis			1			1
TOTAL	17	20	9	2	5	53

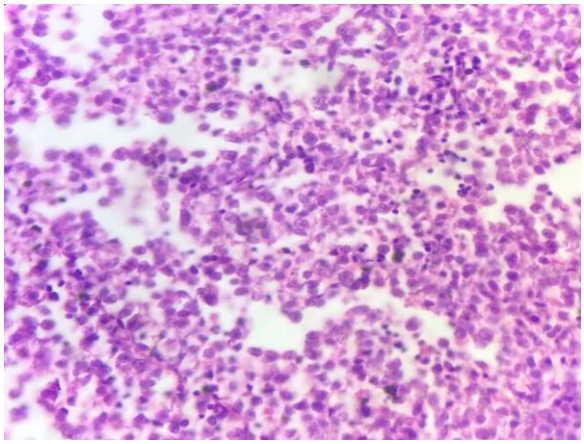

Fig 1: Seminoma Testis (H&E stain; 40X)

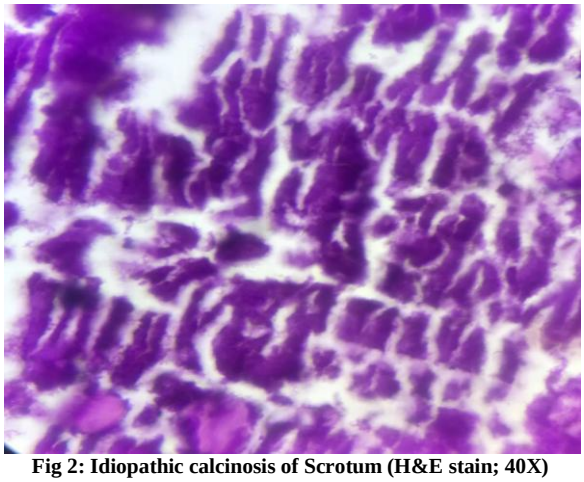

Fig 2: Idiopathic calcinosis of Scrotum (H&E stain; 40X)

DISCUSSION

When age was taken into account considering the neoplastic lesions of testis, seminoma was the predominant tumor among 16-30 years of patient in our study. Fukatsu et al. [9] reported seminoma in the age between 25-44 years and Damjanov I et al. [10] reported it in the age group between 30-50 years. Testicular neoplasm of germ cell origin is the most common malignancy in men aged between 18-35 years. [7] All our cases were also found in men younger than 40. Non seminomatous tumors are known to present in younger age than seminomatous type. [11] We had similar findings as we found one pure seminoma in 3rd decade; one yolk sac tumour and one immature teratoma in 1st decade respectively. Cryptorchidism is the single most important risk factor associated with testicular cancer with 10% of all testicular cancer patients having history of cryptorchidism. [12] Although we found 11 cases of undescended testis, none of them showed neoplastic focus and also none of the 4 cases of testicular neoplasms had history of undescended testis. Our finding is in concordance with Reddy H et al. [13]

In our study the non-neoplastic lesions of testis were more common than the neoplastic lesions (88.8 vs 11.1%). This is similar to the study by Reddy H et al. [13] (86 vs 14%) and Patel MB et al. [14] (85 vs 15%) but doesn't correlate with Robertson GS et al. [15] (31.5 vs 68.4%). We found undescended testis (20.7%) as the most common non neoplastic lesion. A study by Charak A et al. [16] and Sharma M et al. [17] also showed the same results. In other studies from India, inflammatory lesions and torsion testis is the most common non neoplastic lesion.

As shown above, testicular tumors were less frequent in the present study. We found only 4 cases amounting to only 7.5% of the total cases. Incidence of testicular tumors varies from country to country and place to place thus pointing to various causative factors. [18] Our 100% cases of testicular neoplasms were germ cell tumours only. No sex cord stromal tumour, lymphoma or metastasis were reported. As per Mostofi and Price, [19] germ cell tumors constitute more than 94% and stromal tumors consist of 3% of testicular tumors.

Our study reported 3 cases of epididymal cyst which accounted for 5.6% of the total cases whereas it constituted 1.7% of the total cases in a study done by Sanjay M et al. [20] Epididymal cysts may be uni- or multilocular and are lined by cuboidal to attenuated epithelial cells. [21]

There was only 1 case of filariasis epididymis in the age range 31-45 years in our study whereas in a study done by Siddhi G.S. Khandeparkar et al. [22] there were four cases of filarial epididymitis and the age ranged from 11 to 40 years.

Among the scrotal lesions, our study reported 7 cases(13.2%) of hydrocoele. In the study done by Mukherjee et al. [23] the most common category of lesions was cystic

lesion (49.3%), with hydrocele (18.4%) being the most frequent.

CONCLUSION

Non-neoplastic lesions of testis are more common than neoplastic ones. Among the neoplastic lesions germ cell tumors were in majority. All the testicular and paratesticular specimens should be carefully grossed and examined to rule out any malignancy.

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How to cite this article: 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.

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