TESTICULAR TUMOURS: HISTOLOGY, PREVALENCE AND EPIDEMIOLOGY

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Histological analysis of 65 testicular tumours received in the Department of Pathology, over 27 years (1962-1988), is being presented. Diagnosis of these cases was based upon light microscopic findings only.

MATERIALS AND METHODS

Sixty five testicular tumours in 27 years accounted for an average of 2-3 cases (specimens) per year. The estimated frequency was therefore 0.04% out of total 165,000 biopsies received during this period. Specimens were sent from surgical units of various hospitals of Karachi be sides Jinnah Postgraduate Medical Centre (JPMC). Sections prepared were stained with routine haematoxylin and eosin; periodic acid schiff, reticulin and trichrome were used in selected cases.

OBSERVATIONS AND RESULTS

Sixty three germ cell tumours constituted the largest group (97%) of the testicular neoplasms. Seminoma was the most frequently encountered germ cell tumour and was seen in 37 cases (54%). The other germ cell tumours were: 9 eases of embryonal carcinomas (14%), 8 teratocareinomas (12.5%), 6 endodermal sinus tumours (9%), 3 teratomas (4.5%) and 1 gonadoblastoma (1.5%). No choriocarcinoma or specialised stromal cell tumours were seen. Ages of the patientts varied from few months to 85 years with clustering of cases in 0 to 20, 21 to 40 and 51 to 60 age groups (trimodal age distribution). However, the age of peak incidence was between 21 and 40 years (Table-I).

TABLE I. Testicular Tumours; Age distribution and frequency.

Testicular Tumours	0-10 yrs	11-20 yrs	21-30 yrs	41-50 yrs	51-60 yrs	60+ yrs	Total yrs	No.	%
Seminoma	1	0	7	14	4	7	2	35	54
Embryonal Carcinoma	4	1	1	0	0	2	1	9	14
Endodermal Sinus Tumour	5	0	1	0	0	0	0	6	9
Teratocarcinoma	0	1	6	0	0	1	0	8	12.5
Seminoma and Teratoma	0	0	0	1	0	0	0	1	1.5
Teratoma (Benign)	1	2	0	0	0	0	0	3	4.5
Gonadoblastoma	0	0	1	0	0	0	0	1	1.5
Leiomyoma	0	0	1	0	0	0	1	1	1.5
Sara	0	0	1	0	0	0	0	1	1.5
Total	11	4	18	15	4	10	3	65	
Percentage	17.0	6.0	28.0	23.0	6.0	15.5	4.5		100.0

DISCUSSION

Testicular tumours are rare[1-3]. The reported frequency is 1-2% of all malignant diseases in white male population[4] and 0.5-0.8% amongst African Negroes[5]. Data from some of the Departments of Radiotherapy and Pathology compiled in the multicenteric tumour report a frequency of 1.8-4.4% from various centres in Pakistan[6-8]. Thus the frequency reported from Jinnah Postgraduate Medical Centre, Karachi, Liaquat Medical College, Hyderabad, King Edward Medical College, Lahore, and Armed Forces Institute of Pathology, Rawalpindi were 1.8%, 4.2%, 3.9% and 4.0% respectively. The prevalence reported from JPMC was thus the least-perhaps based on the recial difference (Table-II).

TABLE II. Frequency of Testicular Tumours (Percentages) in seven Centres of Pakistan.

Year	JPMC	AFIP	KEMC	FJMC	IRNUM & KMC	NMC	LMC
1960-1972	1.8	–	–	–	–	–	–
1973-1974	1.2	3.3	4.7	1.1	0.9	2.5	4.6
1981	1.8	4.5	3.2	–	4.1	–	3.8
Average	1.6	3.9	4.0	1.1	2.5	2.5	4.2

Key: JPMC – Jinnah Postgraduate Medical Centre, Karachi.
AFIP – Armed Forces Institute of Pathology, Rawalpindi.
KEMC – King Edward Medical College, Lahore.
FJMC – Fatima Jinnah Medical College, Lahore.
KMC – Khyber Medical College, Peshawar.
IRNUM – Institute of Radiotherapy and Nuclear Medicine, Peshawar.
NMC – Nishtar medical College, Multan.
LMC – Liaquat Medical College, Hyderabad.

Similar results were obtained when the frequency of germ cell tumours were compared. Collins[3] and Mostofi[9,10] reported 95% frequency compared to 97% reported in the present series. Contrarily, in African series[5,11,12] the frequency was less (74%). Similarity of results with the Caucasian, and different from African series also support the genetic basis of the disease (Table-III).

TABLE III. Frequency of Germ Cell Tumours in Six Series.

Testicular Tumours	Collins & Pugh U.K. 1964 (1)	Templeton Uganda* 1972 (2)	Mostofi & Price U.S.A. 1973 (3)	Zimmerman* & King Kenya 1978 (4)	Junaid* Ibadan 1981 (5)	Present Series 1988 (5)
Germ Cell Tumours	93	75	93	64.5	73.5	97
Others	7	25	7	25.5	26.5	3
Total No. of cases	932	24	950	31.0	57.0	65

*Average of Germ cell tumour in African series is 71% (2,4,5).

Testicular tumours are seen often in patients with dysgenetic gonads and maldescent of the testis. The same is true for repeated infection[1-3]. Though correlation of these factors was not possible in the present series yet a higher frequency of testicular lymphoma and endemic viral infection in these territories appears concomitant[5]. Modern methods of treatment have revolutionised the prognosis of these patients. Pertinent histological diagnosis and serum AFP (alpha feto protein) and HCG (human chorionic gonadotrophins) estimation[13] are important steps in choosing the line of treatment and

assessing the prognosis. Routine screening of individuals in susceptible age group would help earlier detection and thereby better management of cases.

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