Med. J. Cairo Univ., Vol. 62, No. 2, June (Suppl.) : 211-217, 1994.

Testicular Tumours : A Retrospective Study of 154 Cases

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Abstract

In a retrospective study of all cases of testicular tumours managed at the National Cancer Institute, Cairo University and Kasr El Eini University Hospitals during the last 7 years (from 1986 till 1992), the files of the patients had been revised in the Statistic Departments. The results obtained showed that 154 cases of testicular tumours were managed during that period. Ninety six cases presented with a testicular tumour proved to be malignant after inguinal orchiectomy, 32 cases referred from outside with a testicular biopsy or orchiectomy which proved to be malignant and 26 cases referred for biopsy from the medical oncology departments with testicular relapse of leukaemia or non Hodgkin lymphoma. Eleven cases had a history of undescended testes, 8 cases had a history of congenital inguinal hernia and 12 cases had a history of previous inguinoscrotal operations. The age ranged between 9 months and 73 years with a mean age of 27.34 years. Tumours of the right testis (51.9%) were more common than the left (31.8%). The commonset pathological type was seminoma (28.6%) and the rarest was choriocarcinoma (1.3%). The commonest presentation was only a testicular swelling (71.43%). Elevation of human chorionic gonadotrophin occurred in 77.9% of the cases while elevation of alpha fetoprotein occurred in 51.7% only. Pelviabdominal sonography showed enlarged abdominal lymph nodes in 45.2%, while pelviabdominal C.T. showed enlarged nodes in 30.8%. Pedal lymphography showed signs of positive abdominal lymph nodes invasion in 44.9%. The commonest management done was orchiectomy and chemotherapy (31.8%). Retroperitoneal lymph nodes dissection was done in 3 cases. One case was positive for metastases and 2 cases were negative.

Introduction

ALTHOUGH testicular cancer is a relatively uncommon disease accounting for only 0.4% of all cancers and for only 1% of all male malignancy, it is important because it is the most common carcinoma in the 15-35 years old age group [1].

Genetic factors and testicular dysgenesis are incriminated in the aetiology of testicular tumours and approximately 10% of them are associated with cryptorhidism [2].

The usual presentation of testicular cancer is painless enlargement of the testis, however the patient may present with atypical hormonal manifestations as gynaecomastia or metastatic manifestations as abdominal lymphadenopathy or lung metastases with an occult testicular lesion [3].

Also testicular cancer is one of the few neoplasms associated with accurate serum markers as alphafetoprotein (AFP), human chorionic gonadotrophin (HCG) and lactic dehydrogenase (LD) that are important in the diagnosis and follow-up of testicular tumours. However, a pathological diagnosis can be done by an inguinal approach exploration and biopsy from any doubtful testicular mass [4,5,6].

Surgery, radiotherapy and chemotherapy are different modalities used in the management of testicular tumours either alone or in combination according to the histopathologic type of the tumour [7].

This work is a retrospective study of all testicular tumours managed at the National Cancer Institute (NCI) of Cairo University and Kasr El Eini University Hospital during the last seven years.

Material and Methods

In a retrospective study of all testicular neoplasms managed at the NCI and Kasr El Eini University Hospitals during the last seven years (from January 1986 to December 1992), the files of the patients had been revised in the Statistic Departments and the main data obtained from the files were :

- Age of the patients.
- Site of the tumours (right, left or bilateral).
- History of previous operations in the inguino-scrotal region.
- History of congenital anomalies in the inguino-scrotal region.
- Whether the patient presented to us with a testicular tumour or was referred from outside with a testicular biopsy proved to be a malignant neoplasm.
- The accurate presentation of the patient and whether there was invasion of scrotum or spermatic cord or there was abdominal or inguinal lymphadenopathy.
- Pathological report whether preoperative, (in those patients referred with testicular biopsy) or postoperative.
- Investigations done for the patients.
- Management, whether surgical in the form of orchiectomy with/or without retroperitoneal lymph node dissection (RPLND), radiotherapy and chemotherapy, whether alone or in combination.

Results

In our study for all cases of testicular tumours managed at NCI and Kasr El-Eini University Hospitals during the period from 1986 to 1992, it was found that :

— 154 cases of testicular tumours were managed during the last 7 years.

— 26 cases (16.9%) referred from the medical oncology departments for testicular biopsy, post chemotherapy for cases of leukaemia and non Hodgkin lymphoma (NHL) and these cases showed testicular relapse of the disease.

— 32 cases (20.8%) referred from outside the NCI and Kasr El-Eini with either a testicular biopsy or orchiectomy which proved to be malignant.

— 96 cases (62.3%) presented to us with a testicular tumour proved to be malignent after inguinal orchiectomy.

— 11 cases (7.2%) had a history of undescended testis and 8 cases (5.2%) had a history of congenital inguinal hernia.

— 12 cases (7.8%) had a history of previous inguino-scrotal operations either in the form of orchiectomy or repair of inguinal hernia.

Age distribution : (table 1) :

Table (1) : Age Distribution.

Age group (in years)	Frequency	Percentage (%)
0 - 9	22	14.3
10 - 19	30	19.5
20 - 29	42	27.3
30 - 39	23	14.9
40 - 49	16	10.4
50 - 59	12	7.8
60 - 69	6	3.9
Above 70	3	1.9

The age ranged between 9 months and 73 years with a mean of 27.34 years.

Tumour sites (table 2) :

Table (2) : Site of Testicular Tumours.

Tumour	Frequency	Percentage (%)
Right testis	80	51.0
Left testis	49	31.8
Bilateral	25	16.2

Tumours of the right testis (51.9%) were more common than those of the left testis (31.8%).

Pathology of tumours (table 3) :

Table (3) : Pathology of Testicular Tumours.

Pathology	Frequency	Percentage (%)
Seminoma	44	28.6
Embryonal carcinoma	28	18.2
Teratoma	9	5.8
Teratocarcinoma	8	5.2
Yolk sac tumour	9	5.8
Choriocarcinoma	2	1.3
Soft tissue sarcoma	16	10.4
Leukaemia	22	14.3
Non Hodgkin lymphoma (NHL)	16	10.4

— The commonest pathological type was seminoma (28.6%) and the rarest was choriocarcinoma (1.3%).

— 16 cases (10.4%) of soft tissue sarcoma of the testis were recognized which included : fibrosarcoma, embryonal rhabdomyosarcoma, malignant fibrous histiocytoma, spindle cell sarcoma and hemangiopericytoma.

Clinical presentations :

— 110 cases (71.43%) presented with only a testicular swelling (commonest presentation).

— 7 cases (4.5%) presented with a testicular swelling which invades the scrotum.

— 6 cases (3.9%) presented with a testicular swelling and enlarged palpable abdominal lymph nodes.

— 3 cases (1.9%) presented with a testicular swelling and supraclavicular lymph node enlargement.

— 2 cases (1.3%) presented with a testicular swelling and enlarged inguinal lymph nodes. After lymph node biopsy one case was positive for metastases and the other was negative.

Investigations :

a) Serum tumour markers were done for 118 cases, it showed :

   — Elevation of human chorionic gonadotrophin (HCG) in 92 cases (77.9%).

   — Elevation of alpha fetoprotein (AFP) in 61 cases (51.7%).

   — Normal levels of serum markers in 22 cases (18.6%).

b) Pelviabdominal ultrasonography was done for 62 cases, it showed enlarged abdominal lymph nodes in 28 cases (45.2%).

c) Pelvi abdominal CT was done for 39 cases, it showed enlarged abdominal lymph nodes in 12 cases (30.8%).

d) Pedal lymphography was done for 78 cases, it showed signs of positive abdominal lymph nodes invasion in 35 cases (44.9%).

Management (table 4) :

— 26 cases (16.9%) received chemotherapy only without orchiectomy, these were the cases of bilateral testicular relapse of leukaemia and NHL.

— The main treatment of seminoma was orchiectomy and radiotherapy, only 3 advanced cases of seminoma received in addition chemotherapy.

— The main treatment of non seminomatous germ cell tumours was orchiectomy and chemotherapy, only 5 cases received in addition radiotherapy.

— RPLND was done for 3 cases, 2 cases were testicular embryonal carcinoma and the postoperative pathology was negative for lymph node metastases in both cases, and the remaining case was malignant teratoma and the postoperative pathology was positive for lymph node metastases and this patient received postoperative chemotherapy.

Table (4) : Management of Testicular Tumours.

Management	Frequency	Percentage (%)
Chemotherapy	26	16.9
Orchiectomy	44	28.9
Orchiectomy + chemotherapy	49	31.8
Orchiectomy + radiotherapy	24	16.6
Orchiectomy + chemotherapy + radiotherapy	8	5.2
Orchiectomy + RPLND	2	1.3
Orchiectomy + RPLND + chemotherapy	1	0.6

Discussion

Although testicular cancer is a relatively uncommon disease accounting for only 0.4% of all cancers and for only 1% of all male malignancy it is important because it is the most common carcinoma in the 15-35 years old age group[**1**]. In Egypt testicular cancer is rare, constituting only 0.4% of all cancers, 0.7% of male malignancy and 13.9% of cancers of male genital organs[**8**].

Testicular cancer is the most common malignancy that develops in men between 20-40 years of age with a mean of 28 years[**9**]. In our retrospective study for cases of testicular tumours managed at NCI and Kasr El-Eini University Hospitals during the last 7 years, the youngest age was 9 months, the oldest was 73 years and the mean age was 27.34 years.

In our study seminoma was never reported in infants whereas embryonal carcinoma and teratoma were the most common tumours in infancy and childhood.

In most large series of testicular tumours approximately 10% are associated with cryptorchidism[**2**] and in our study it was found that about 7.2% of the cases with testicular tumours had a history of undescended testis.

As regards the affected side, the right testis was affected more than the left and the ratio was 5 : 4 and bilateral tumours constituted 2% of the cases[**10**]. In our study, the right side was affected more than the left side and the ratio was 8 : 5, and the incidence of bilateral tumours was 16.2% which is much more higher than that reported by Blandy in 1966[**10**]. It was higher than expected as most of these cases with bilateral tumours were referred from the medical oncology departments with bilateral testicular relapse of leukaemia or NHL for biopsy.

The incidence of different histopathological types of testicular tumours are seminoma 40%, pure embryonal carcinoma is about 3%, but embryonal carcinoma

element in testicular tumours is about 45%, teratoma constitutes 2 - 3% of germ-cell tumours in adults but constitutes 40% of testicular neoplasms in infants, choriocarcinoma constitutes about 5% [**11,12**].

In El-Bolkainy experience[**8**], seminoma constituted 39% of testicular tumours, teratocarcinoma 22%, embryonal carcinoma 13%, yolk sac carcinoma 10% and miscellaneous tumours 16%.

In our retrospective study, the incidence of different histopathological types was : Seminoma 28.6%, embryonal carcinoma 18.2%, teratoma 5.8%, teratocarcinoma 5.2%, yolk sac carcinoma 5.8%, choriocarcinoma 1.3%, soft tissue sarcoma 10.4%, leukaemic infiltration 14.3% and NHL, either solitary testicular NLH or testicualr infiltration in lymphoma 10.4%. The incidence of leukaemia and NHL in our study was higher than that reported by Ulbright and Roth[**11**] as most of these cases were referred from the medical oncology departments for testicular biopsy post chemotherapy for cases of leukemia and NHL.

About 80% of patients with testicular tumours presented with only painless testicular swelling[**10,13**]. In our study 71.4% of patients presented with testicular swelling only, 4.5% presented with scrotal invasion, 3.9% presented with palpable abdominal lymph nodes and 1.9% presented with supraclavicular nodes and 1.3% presented with enlarged inguinal lymph nodes.

In disseminated non seminomatous germ cell tumours, approximately 40% of all patients will have an elevated AFP and 75% an elevated HCG, and 85% will have one or both markers elevated[**14,15**]. In our retrospective study HCG was elevated in 77.9% of patients and AFP elevated in 51.7% and there were normal marker levels in 18.6%.

Although RPLND permits accurate tumour staging, minimizes the risk of retroperitoneal recurrence and cures a substantial number of patients without chemotherapy, but it is a tedious, shocky procedure which adds no more to the prognosis and may be associated with loss of ejaculation[**16,17**]. It was done for 3 cases only in our study, one case was positive for metastases and 2 cases were negative.

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