ORIGINAL ARTICLE

Testicular and Paratesticular Neoplasms in Old Patients

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Abstract

Testicular and Para testicular tumours from 27 patients aged 60-85 yrs. were assessed with respect to histological types. The tumours of germ cell origin were 15 in number (55.5%) and non germ cell tumours were 12 in number (44.5%). There were 13 cases of seminoma and 2 cases of mixed germ cell tumour. Among non germ cell type, 7 were Non-Hodgkin's Lymphoma, 2 were leiomyosarcoma, 2 were metastatic deposits of adenocarcinoma and 1 was of adenomatoid tumour of epididymis.

Key Words

Testicular, Paratesticular, Tumours, Old age

Introduction

The testicular tumours are almost entirely limited to three age groups, infancy and childhood, young adults and old age with peak incidence in 35-39 years (1,2). The histopathological type and behaviour of these tumours significantly vary in each group. Seminoma is not seen in infants in whom the commonest testicular tumour is yolk sac tumour (3). Seminoma, embryonal carcinoma and teratoma are common in fourth decade of life, whereas spermatocytic seminoma, lymphoma and secondary deposits are seen in old age (2,4,5).

Material and Methods

In a comprehensive retrospective study of testicular and paratesticular tumours from the Department of Pathology, Government Medical College, Srinagar, 27 patients were taken who were of 60 years of age and above. Their clinical details, histopathological slides and paraffin wax blocks were taken out from the departmental archives. The slides were reviewed and wherever needed fresh sections were cut from paraffin wax blocks. Routine stain used was Haematoxylin & Eosin but other stains like PAS, Alcian blue, Reticulin and mucicarmine were used as and when required.

Results

Orchidectomy specimens of 27 patients aged 60 years and above were received in Department of Pathology,

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Government Medical College, Srinagar from 1st January 1984 to 31st August 2002 and were reported either as primary tumours of testis or adnexae, (25 cases) and secondary deposits (2 cases) from primary malignancy else where (Refer Table). They included 15 cases of germ cell tumours, 7 cases of non-Hodgkin's lymphoma, 2 cases of leiomyosarcoma, 2 cases of metastatic deposits and one case of Adenomatoid tumour of epididymis. There were 13 cases of seminomas, 10 being typical semonima (W.H.O Classification) where as 3 cases were spermatocytic seminoma. Patient's age varied from 60 years to 85 years. The tumour size varied from 65 mm (in which the tumour compressed testicular tissue to one side) to 210 mm in which entire testis was replaced by tumour and had extensive necrosis with hemorrhage. On cut section, cut surface of most of the tumours was grey white and lobulated. Cut surfaces of spermatocytic seminoma were greyish white gelatinous, with small mucinous cystic areas surrounded by solid areas (Fig. 1). On microscopy typical seminoma consisted of sheets and nests of monomorphic large cells with clear vacuolated cytoplasm around round to oval nuclei containing 2 to 3 prominent nucleoli. The cellular nests/ sheets were intervened by fibro vascular stroma containing lymphocytic infiltrates (Fig. 2). In three cases the inflammatory reaction was exuberant with lymphoid follicle formation. Granulomatous reaction was seen in two cases and syncytiotrophoblastoid cells were seen in one case. Cord and capsule was infiltrated by tumour cells in two cases. Spermatocytic seminoma exhibited tricellular morphology. Small cells with perfectly round nuclei and a rim of eosinophilic cytoplasm, medium sized cells- lymphocyte like but larger than lymphocytes & giant cells (Fig. 3).

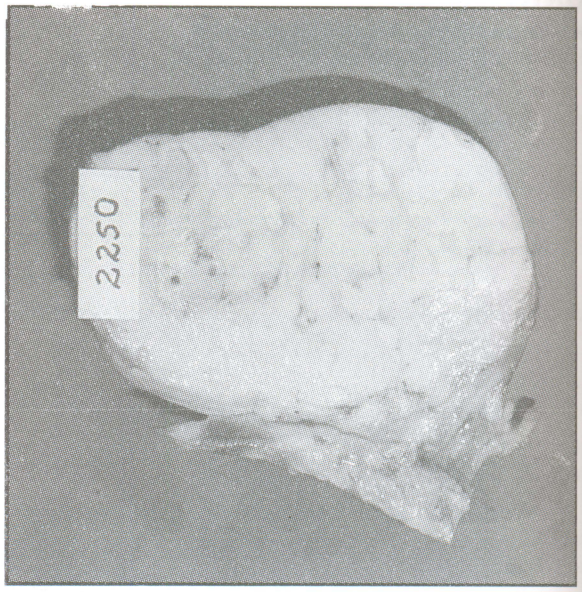

Fig. 1. Cut surface of seminoma testis.

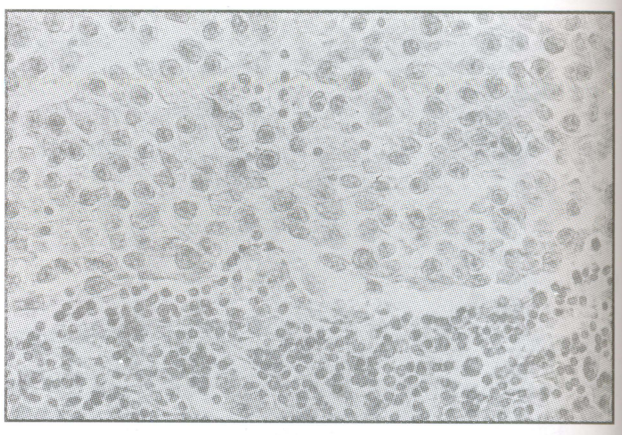

Fig. 2. Microscopy of typical seminoma testis. Lymphocytic infiltrate seen in septa around tumour cells (X200).

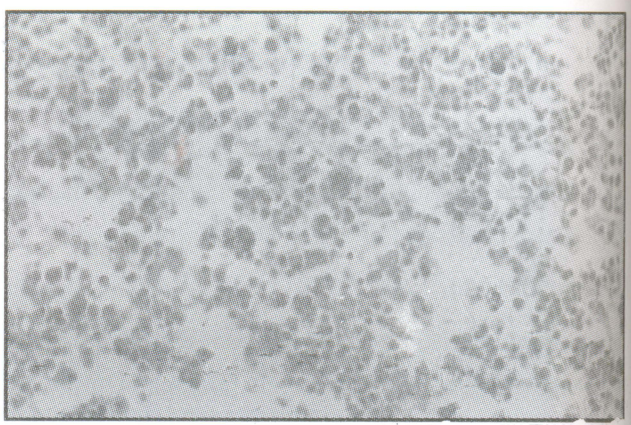

Fig. 3. Microscopy of spermatocytic seminoma - giant cells are clearly visible (X200).

Two cases of mixed germ cell tumours measured 70 and 95 mm with variegated cut surface containing cystic spaces (Fig. 4). On microscopy one case showed keratinous cysts, mucous secreting glands, respiratory epithelium, sebaceous glands, cartilage with foci of intercommunicating channels lined by cuboidal epithelium (Fig. 5) which had vacuolated cytoplasm and at places glomeroid structures (Schiller Duval bodies)- diagnosed as mature teratoma with yolk sac tumour. In addition to mature tridermal structures described above, there was good population of large immature cells arranged in acini, sheets and trabeculae with scanty cytoplasm and angry looking hyperchromatic nuclei and

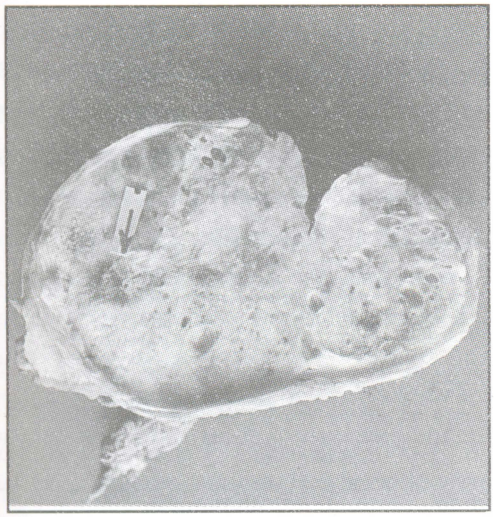

Fig. 4. Cut section of mixed germ cell tumor. Arrow showing focus of haemorrhage and neorosis.

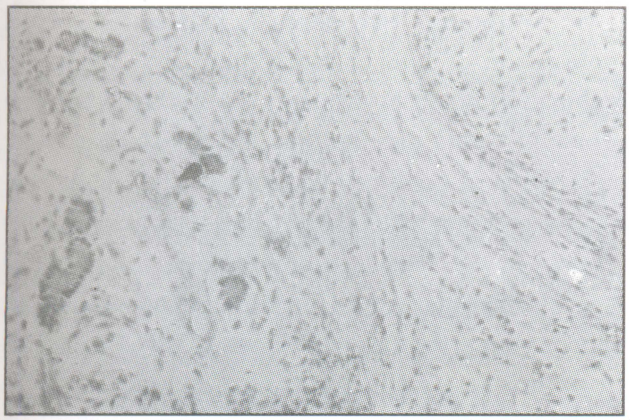

Fig. 5. Microscopy of teratoma showing cartiragee and immature neural element. (X200).

sheets of monotonous large cells with clear cytoplasm and central nuclei in second case. This was diagnosed as combination of teratoma (Mature), embryonal carcinoma and typical seminoma.

In seven cases of non-Hodgkin's lymphoma, age of patients varied from 60 to 85 years and tumour size from 54 mm to 80 mm in diameter. Microscopy showed diffuse lymphoid infiltrate with residual semineferous tubules (Fig. 6). The latter showed diffuse germ cell atrophy and intra tubular lymphoid infiltrates. Epididymis and spermatic cord were infiltrated in 5 cases. Two cases had diffuse large cell morphology and others showed

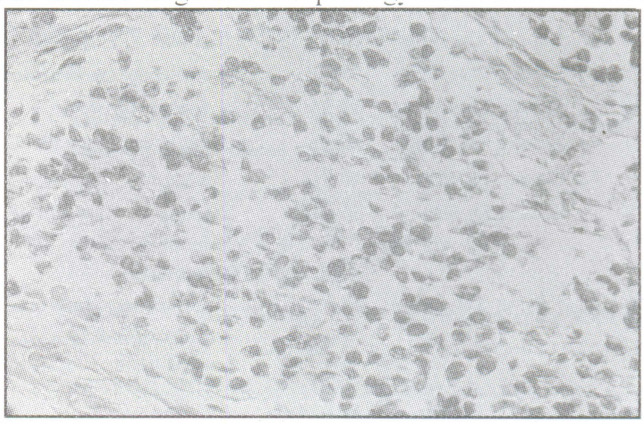

Fig. 6. Microscopy showing Non-Hodgkin's lymphoma (X400).

diffuse mixed cellularity. There were 2 cases of metastic deposits in testis. Right testis was involved in one case and left in other. In both cases testis was compressed on one side and tumours measured 20 mm and 25 mm in maximum diameter. In right sided tumour, patient aged 75 years with primary from prostate where as left sided tumour was in a 65 years old patient, with undetected primary as patient died because of wide tumour dissemination. Two cases of leiomyosarcoma were in patients 60 and 65 years of age with tumour size measuring 80 mm & 140 mm in maximum diameter. Microscopy showed well differentiated leiomyosarcoma with interlacing spindle cells having fibrillary cytoplasm and vesicular nuclei. The mitotic figure could easily be spotted (6/10 HPF).

One case of adenomatoid tumour measured 3 cm in diameter, grey white with small cysts on cut section. On microscopy tubules showed cuboidal benign looking epithelial lining with prominent intervening stroma and dense lymphocytic infiltrate.

Table showing Patient Details (Tumor Classification as per WHO)

S. No.	Clinical presentation	Age/Side yrs.	Histopathological Diagnosis
1	Rt. Scrotal Swelling	60 Rt.	NHL
2	Rt. Scrotal Swelling	70 Rt.	NHL Large cell type
3	Lt. Scrotal Swelling	80 Lt.	NHL
4	Rt. Scrotal Swelling	60 Rt.	Seminoma (typical)
5	Rt. Scrotal Swelling	65 Rt.	Seminoma (typical)
6	Lt. Scrotal Swelling	60 Lt.	Leiomyosarcoma
7	Lt. Scrotal Swelling	60Lt.	Seminoma (typical)
8	Lt. Scrotal Swelling	60 Lt.	Seminoma (typical)
9	Lt. Scrotal Swelling	65 Lt.	Metastatic deposits of adenocarcinoma (Papillary)
10	Rt. Scrotal Swelling	65 Rt.	Seminoma + Teratoma with malignant component + Yolk sac tumour
11	Rt. Scrotal Swelling	65 Rt.	Seminoma (typical)
12	Rt. Scrotal Swelling	60 Rt.	Seminoma (typical)
13	Rt. Scrotal Swelling	63 Rt.	Seminoma (typical)
14	Rt. Scrotal Swelling	60 Rt.	Seminoma (typical)
15	Rt. Scrotal Swelling	85 Rt.	NHL Large cell type
16	Rt. Scrotal Swelling	60 Rt.	Adenomatoid tumour
17	Rt. Scrotal Swelling	75 Rt.	Seminoma (typical)
18	Rt. Scrotal Swelling	65 Rt.	NHL (Lympho plasmocytic)
19	Lt. Scrotal Swelling	75 Lt.	Seminoma (typical)
20	Lt. Scrotal Swelling	65 Lt.	Seminoma (typical)
21	Rt. Scrotal Swelling	68Rt.	Leiomyosarcoma
22	Lt. Scrotal Swelling	76 Lt.	Seminoma (typical)
23	Lt. Scrotal Swelling	60 Lt.	NHL (Diffuse mixed cellularity)
24	Lt. Scrotal Swelling	60 Lt.	NHL
25	Lt. Scrotal Swelling	60 Lt.	Seminoma (typical)
26	Lt. Scrotal Swelling	70 Lt.	Teratoma + Yolk sac tumour
27	Rt. Scrotal Swelling	75 Rt.	Metastatic deposits of well differentiated adenocarcinoma

Right- Rt., Left-Lt., NHL- Non-Hodgkin's Lymphoma

Discussion

Testicular tumours are said to show peak incidence in young adults. Tumour types vary according to age of patients. In old age, germ cell tumours show a decline where as percentage of non germ cell tumours goes up (1,2). In present study these tumours comprised 14.3% (27 of 189 cases) of all testicular & Para testicular tumours. Abert MR (5) found this percentage to be nine which is, similar to Collen and Pugh but unlike latter, they had lymphoma as the commonest tumour type in this age group where as Collin and Pugh reported seminoma as the commonest tumour type which is similar to our observations (6). There were three cases of spermatocytic and 12 cases of typical seminoma. Spermatocytic seminoma is a distinct tumour with old age predilection, tends to occur in pure form with different histology and best prognosis. Orchidectomy is the only management recommended in these cases. Very rarely metastatic or sarcomatous potential is observed. . Typical seminoma, the commonest tumour type was found to have metastasized to abdominal nodes in three cases and had cord infiltration in two. Lymphoid infiltrates were observed in all the cases, granulomas in two cases and elements of choriocarcinoma in one case.

Majority of germ cell tumours contain more than one tumour components like combination of seminomas with yolk sac tumour or teratoma with yolk sac tumour and choriocarcinoma. Two cases in this series showed combination of two or more tumours. Commonest combination noted by Mostofi (2) was teratoma with embryonal cell carcinoma. He also noted other combination of germ cell tumours as well. He had two cases of teratoma with embryonal cell carcinoma out of 12 cases in the same age group as ours. Differential diagnosis of primary non-Hodgkin's lymphoma of testis, includes granulomatous orchitis, pseudo lymphoma and seminoma testis (4). Granulomatous orchitis is characterized by diffuse polymorphous infiltrates with or without giant cells in the intersitium and within

tubules. Pseudolymphoma is much rare than lymphoma characterized by formation of lymphoid follicles, with lymphocytes and plasma cells. Seminoma poses a serious challenge at times. A number of clinical, gross and histopathological differences exist between lymphoma and seminoma. Lymphoma testis usually have short clinical history of testicular enlargement with small tumour size where as seminoma have long history with large testicular lumps. Lymphomas are fish flesh in appearance, centered towards hilum where as seminomas are larger, better circumscribed and are usually restricted to testicle. They are soft, with lobulated cut surface and have frequent areas of necrosis. Microscopically, lymphomatous cells surround and compress the semineferous tubules until they are destroyed. This feature is better appreciated at advancing peripheral areas of the tumour. The lymphomatous cells are distinctly different microscopically from uniform, pale clear cells of seminoma. Areas of necrosis and fibrosis are infrequent in lymphoma (5).

Non-Hodgkin's lymphoma comprised 26% of present series,which is in complete contrast to the study of Abell and Holtz (5), who reported incidence of lymphoma as high as 44% percent. Lymphomas of testis are usually seen in old age after sixty (7).The cases of NHL reported were unilateral and were labelled primary tumours of testis, with cord infiltration in 5 out of 7 cases. Infiltration to epididymis and cord is more often a feature of lymphoma and leukemia than germ cell tumours (8).Talerman also reported infiltration to epididymis in 21 of 27 cases (9). All the cases of NHL in present study were diffuse in architecture, these findings are similar to what is already reported in literature (2,7,8). Two cases of leiomyosarcoma reported arose either from the epididymis or adjacent cord and presented clinically as testicular tumours. Most of leiomyosarcoma in this area arise from spermatic cord (10), but epididymal leiomyosarcomas are also reported in literature (11).

Adenomatoid tumours are the common tumours of epididymis. Most of them are small sized, measuring less than 3 cms. Majority of these tumours are found in 4th decade (5). Secondary deposits in testis, though rare, are reported in literature and their incidence increases when incidence of germ cell tumours start falling (12). Tumours of prostate, lungs, colon, kidney, stomach, pancreas, melanoma are reported to throw secondaries in testis and testicular swelling could be the only presenting sign in occult primary of above mentioned sites (13). Rarely secondaries from retinoblastoma, neuroblastoma, bladder, ureter and bile duct malignancies and even carcinoid are also reported in testis (12, 13).

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