

# RESEARCH AND REVIEWS: JOURNAL OF MEDICAL AND HEALTH SCIENCES

## Primary Testicular T-Cell Non-Hodgkin's Lymphoma.

Manjit Singh Bal, Mohanvir Kaur, Nishit Gupta, and Vijay Kumar Bodal\*.

Department of Pathology, Govt. Medical College Patiala, and Rajindra Hospital, Patiala, Punjab, India.

### Case Report

Received: 17/05/2014  
Revised: 16/06/2014  
Accepted: 21/06/2014

#### \*For Correspondence

Department of Pathology,  
Govt. Medical College Patiala,  
and Rajindra Hospital,  
Patiala, Punjab, India.

**Keywords:** Non-Hodgkin's  
Lymphoma, Testicular  
swelling, T-Cell lymphoma

#### ABSTRACT

Primary testicular non-Hodgkin lymphoma (NHL) is an uncommon extra nodal presentation, constituting 1% of all NHL, majority of which are B-Cell type, with only very few cases of primary T-Cell lymphoma. A 60 years male presented with asymptomatic unilateral testicular swelling. Ultrasonography revealed a heterogeneous testicular mass in relation to head of epididymis. Orchidectomy done grossly revealed a circumscribed growth replacing the normal testis. Microscopically, a diagnosis of T-Cell Non-Hodgkin's Lymphoma was considered. This case is being presented for its rarity in literature.

#### INTRODUCTION

Primary testicular non-Hodgkin lymphoma (NHL) is an uncommon extra nodal presentation, constituting 1% of all NHL. It accounts for approximately 9% of testicular neoplasms. Despite this low overall incidence, however, it is the most common testicular malignancy in the elderly; the median age at presentation is 60 years. Although intermediate-grade diffuse large B-cell lymphoma is the most common histologic pattern among primary testicular lymphoma, secondary infiltration of the testis, especially in high-grade Burkitt's lymphoma, is more prevalent [1]. The most common clinical presentation is a unilateral painless scrotal swelling, sometimes with sharp scrotal pain or hydrocele. Systemic B symptoms are present in 25–41% of patients with advanced stage. Less frequently, abdominal pain, and ascites can be seen in patients with involvement of retroperitoneal lymph nodes. Bilateral testicular involvement is detected in up to 35% of patients. Testicular lymphoma has a rather high incidence of bilateral involvement and a propensity for extranodal spread to the skin, subcutaneous tissue, CNS, lung, and Waldeyer's ring. Orchidectomy followed by R-CHOP combination, with CNS prophylaxis, and prophylactic irradiation of the contralateral testis is the recommended first-line treatment for patients with limited disease [2].

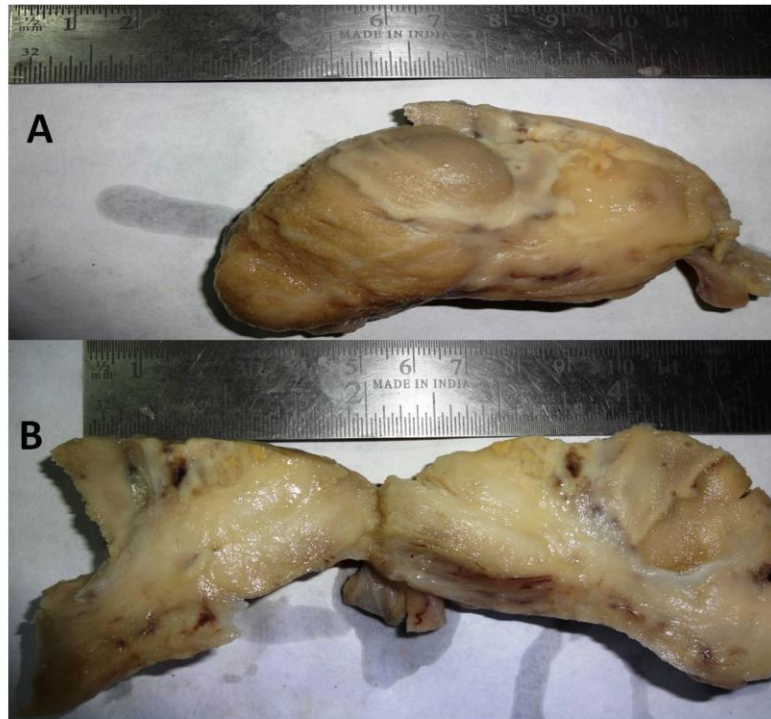
#### Case History

A 60 year old male presented to the surgical OPD of Rajindra hospital with complaints of painless swelling of left testis for 2 months gradually increasing in size. It was not associated with any urinary complaints, fever, loss of weight or loss of appetite. On routine physical examination no other swelling was found. An ultrasound testis done on 02/03/2014 showed a heterogeneous mass in relation to the head of left epididymis measuring 3.7 X 2.9 cm in size with microcalcification. On 04/03/2014, orchidectomy was done and received in the department of pathology.

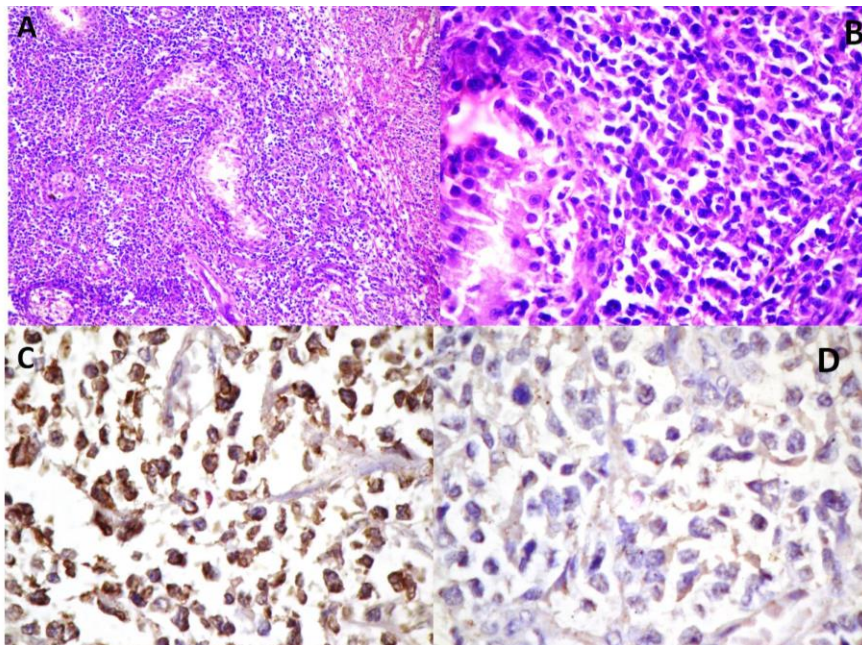
#### Pathological Findings

Gross Examination (Figure 1A, B): Specimen of testis measuring 10 X 5 X 2 cm with spermatic cord attached. Tunica stripped separately. Cut section throughout was greyish white. Areas of haemorrhage identified. Representative sections submitted.

Microscopic examination (Figure 2A, B): Multiple pieces and sections studied show neoplastic growth consisting of monomorphic appearing cells separated by fibrous septae on low power of microscope which are enclosing seminiferous tubules at places. Cells are small to medium sized with increased nucleocytoplasmic ratio, open nuclear chromatin, irregular nuclear contour and scant cytoplasm. There are seen some areas of haemorrhage and necrosis. Features are those of lymphomatous lesion; possibly Non Hodgkin's Lymphoma (to be confirmed on IHC).



**Figure 1:** A- Gross photograph of enlarged left testis measuring 10X5X2 cm  
B- Cut surface shows a circumscribed growth with scant areas of hemorrhage and residual normal tissue.



**Figure 2:** A- 100X, H&E, Monotonous population of lymphoid cells enclosing seminiferous tubules; B- 400X, H&E, Lymphoid cells with dispersed chromatin, irregular nuclear contour, scant cytoplasm; C- 1000X, IHC, CD 3 Positive; D 1000X, IHC, CD 20 Negative

## Immunohistochemistry

CD45 (Leucocyte common antigen marker): Strongly positive in 95% tumor cells.  
CD3 (T-Lymphocyte marker) (Figure 2C): Strongly positive in 90% tumor cells.  
CD20 (B-Lymphocyte marker) (Figure 2D): Focal positive in 5-8% tumor cells  
CK (Epithelial cell marker): Negative.

It confirmed the diagnosis of T cell, Non Hodgkin Lymphoma-Testis.

Subsequently, bone marrow aspiration done on 28/04/2014 revealed a mildly hypercellular marrow with normal hematopoiesis.

## DISCUSSION

Although primary testicular lymphoma (PTL) is the most common form of testicular cancer in men over the age of 60, and accounts for 7% of all testicular tumors, it accounts for only 1% of all non-Hodgkin's Lymphomas and represents up to 38% of bilateral tumors. It is the most common testicular tumor in the patient age range 60 to 80 years and has a mean age on presentation of 64 years [3,4,5,6,7]. Our patient presented at 60 years of age.

In primary T-cell lymphomas, most case reports are of T-cell/Natural Killer (NK) cell lymphoma with very few cases of peripheral T-cell lymphoma (Not otherwise specified) [4,5,6]. Our case represents one of those few cases of peripheral T-cell lymphomas previously reported in the literature

Clinical presentation is usually of a painless, unilateral testicular swelling. Symptoms of occasional sharp pain have been documented, with cases of abdominal pain with ascites being reported due to large retroperitoneal lymph nodes. No pain or ascites was reported at the time of presentation [7, 8]. Associated B-symptoms (fever, night sweats, and weight loss) usually present only in advanced stages, accounting for 25% to 41% of patients at diagnosis [9, 10, 11]. Our patient had a painless testicular mass for the past two months without B-symptoms.

A malignant lymphoma in which the tumor mass is limited to the testis at the time of clinical onset of the disease is rare. Since the first report of non-Hodgkin lymphoma manifesting as a testicular mass, described by Malassez in 1877, primary testicular lymphoma has attracted attention because of its rarity and poor prognosis. Testicular lymphoma is a lethal disease with a median survival of approximately 12 to 24 months [4, 6, 9, 10]. Our patient had no other lymphadenopathy or spleno-hepatomegaly as was demonstrated by ultrasonography. Until now, 3 month follow up has been done and the patient is alive. He received chemotherapy the conventional cyclophosphamide, adriamycin, vincristine, and prednisolone (CHOP) regimen initially.

Most of patients with testicular large-cell lymphoma have a poor outcome and the long-term survival curves show no clear evidence of a substantial proportion of cured patients. Even for patients with stage I disease and good-risk International prognostic index (IPI), the outcome seems worse than that reported for diffuse large cell lymphoma (DLCL) at other sites [9,10,11]. There are reports of a high rate of extranodal recurrence and the frequent involvement of unusual sites. The duration of survival after relapse seems to be poor. Failures usually occur within 1 to 3 years after the initial therapy [9, 11, 12]. However, several late relapses of testicular lymphomas have been observed up to 14 years after diagnosis, especially in the central nervous system (CNS) and the contralateral testis, the latter raising the problem of distinguishing a new primary disease versus a late recurrence. The possibility of late CNS relapses has been reported in other studies as well, and is in marked contrast with the median time to CNS relapse of less than 1 year in patients with aggressive nodal lymphomas, so long-term follow up is mandatory for these patients [12, 13].

This report indicates that testicular T-cell lymphoma deserves to be distinguished from the other testicular lymphomas for example, diffuse large B-cell lymphoma and Hodgkin's lymphoma, because of the different treatment options. In fact, this lymphoma tends to occur at a younger age, to disseminate early, to have an aggressive course, and is strongly associated with EBV [6, 12]. Response to multi-agent chemotherapy (such as CHOP, bleomycin, adriamycin, cyclophosphamide, vincristine, and prednisone (BACOP), or ProMACE-CytaBOM is often poor, even if complete remission is obtained, relapse may develop soon after. More aggressive treatment should be sought for this particular malignancy. A common protocol has still not been developed for refractory or relapsed peripheral T-cell lymphoma. Some commonly used

regimens in these cases are ifosfamide, carboplatin, and etoposide (ICE), dexamethasone, high dose Ara C, and cisplatin (DHAP) and etoposide, methylprednisolone, cytarabine, and cisplatin (ESHAP). Also various clinical trials are underway using histone deacetylase inhibitors, proteasome inhibitors, nucleoside analogues, monoclonal antibodies and immunomodulatory drugs [12,13,14].

## CONCLUSIONS

Testicular peripheral T-cell lymphomas are rare and highly aggressive cancers, with clinical and histological differentials of seminoma, nodal Hodgkin's lymphoma infiltrating testis & Lymphoblastic leukemias involving testis in relapse and non-neoplastic conditions. Correct diagnosis with immunohistochemical techniques is mandatory for the proper treatment and further directed management of these tumors.

## Abbreviations

BACOP: Bleomycin adriamycin cyclophosphamide, vincristine, and prednisone; CNS: Central nervous system; CT: Computerized tomography; CHOP: Cyclophosphamide adriamycin vincristine, and prednisolone; DHAP: Dexamethasone high dose Ara C and cisplatin; DLCL: Diffuse large cell lymphoma; EBV: Epstein-Barr virus; ESHAP: Etoposide methylprednisolone cytarabine, and cisplatin; ESR: Erythrocyte sedimentation rate; ICE: Ifosfamide carboplatin and etoposide; LMP: Latent membrane protein; PTL: Primary testicular lymphoma; NK: Natural killer; IPI: International prognostic index.

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