PRIMARY LYMPHOMA OF TESTIS: A CASE REPORT

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Abstract

Primary Non-Hodgkin's Lymphoma of Testis is a rare and unique tumor. It is more common than primary testicular tumors in males above 50 years. It often shows bilaterality and systemic spread, particularly to central nervous system. Due to its rarity and aggressive nature, opinion regarding its treatment regime is rather divided and its prognosis is poor. Here we present a case of 60 year old male with rapid enlargement of right testis with no extra-testicular manifestation of lymphoma at the time of presentation.

Keywords: Primary non-Hodgkin's Lymphoma of Testis; Primary Testicular Lymphoma; Diffuse Large-cell Lymphoma of Testis.

Introduction:

Primary malignant lymphoma of the testis is a rare disease that accounts approximately for 5% of all testicular neoplasm and only 1% of lymphoma presentations. However, it is the most common testicular malignancy in patients older than 50 years of age [1,2]. The purpose of the present case is to present the clinical, histopathological and immunohistochemical findings of primary non-hodgkins lymphoma of testis in 60 year old male.

Case Report:

A 60 year male was admitted with right-sided testicular mass. As per history patient noticed slight enlargement of right testis. At that time, there was no pain or tenderness in or around the organ. Soon after he noticed rapid increase in testicular size and weight, along with development of a dragging pain that extended from right lower lumbar region to the right flank and further down to the testis. Within a period of five weeks, pain became unbearable and patient sought medical help. At the time of

admission, no palpable lymphadenopathy was observed anywhere in the body. Other body vitals were also within normal limits. Routine hematology and urine examination did not reveal any significant finding. His x-ray chest was also within normal limits. Provisional diagnosis of right sided testicular tumor, probably seminoma, was made. Surgery was performed four days after admission. High orchidectomy was performed and specimen was sent for histopathology. Patient recovered from surgery satisfactorily with no complications.

On gross examination, entire testicular mass measured 70×65×40 mm and attached spermatic cord measured 80×25 mm. Outer surface was smooth. On cutting open, the testis showed variegated and lobular appearance. Areas of necrosis and hemorrhage were seen. Histopathology sections, stained by hematoxylin and eosin, revealed a tumor which was very cellular. The cells were distributed diffusely, lying close to each other but discreetly. These cells were round, with small amount of cytoplasm and medium-sized, round or cleaved

nuclei. Some of the cells showed angiocentric distribution, infiltrating the wall of blood vessels and forming intra-luminal deposit in a few blood vessels. Remnants of seminiferous tubules could be made out amidst these tumor cells. Small amount of atrophic testicular tissue was seen in the periphery of the tumor (Fig. 1). The tumor extended into the spermatic cord and invaded the loose fibro-adipose tissue around the spermatic cord structures. Tumor also involved the surgical margin. Immunostained sections (BioGenex) showed positivity for LCA-CD45 (leucocyte common antigen); while EMA (epithelial membrane antigen) was negative (Fig. 2). A diagnosis of testicular lymphoma – large cell type, high grade, was made. Patient was re-examined for lymphadenopathy and Computerized Tomography (CT) of abdomen and thorax was done during follow-up. However no lymphadenopathy was found. Thus final diagnosis of primary lymphoma of testis – non-hodgkin's, diffuse, large cell type, high grade, was made. Patient was referred to specialized cancer centre for treatment. He returned to us after about ten days of discharge to get the paraffin blocks of the specimen, as required by the treating cancer specialist. On being enquired about his recovery, he mentioned that since past five days he had developed

a right axillary mass, which on examination was about two centimeter in diameter and was non-tender, discreet but showed restricted mobility. He also showed the report of repeat CT scan of abdomen which had started showing para-aortic lymphadenopathy. Patient was lost to further follow-up.

Figure 1: Photomicrograph showing a very cellular tumor with diffuse but discreet cells, with round or cleaved nuclei. Small amount of atrophic testicular tissue seen adjacent the tumor. (Hematoxyline & Eosin, x400)

Figure 2: Photomicrograph showing Immunohistochemical stains: A. Tumor cell positivity for LCA-CD45 (leucocyte common antigen); B. Tumor cells show negative staining for EMA (epithelial membrane antigen) (x400); C. Higher magnification of tumor cell in HE stain section(x400); D. Positivity of reticulin stain(x400).

Discussion:

Testicular non-Hodgkin's lymphoma is a rare, unique and aggressive extranodal presentation of non-Hodgkin lymphoma. It is the most common secondary testicular cancer. Among men older than 50, it is more common than primary testicular tumors [1,3]. Testicular lymphoma shows no well-documented etiological or predisposing factors or any significant association with history of trauma, chronic orchitis or cryptorchidism. It has a predilection for dissemination to non-contiguous extranodal sites such as the CNS, Waldeyer's ring, skin and lungs [4,5].

Testicular lymphoma is now considered to be the most common bilateral tumor of testis; with reported incidence of bilateral metachronous testicular involvement of 35% and bilateral synchronous testicular involvement of 3% [5]. Other authors have reported the incidence of bilateral involvement of about 10-40% [6]. As such there is no direct lymphatic or venous connection between the right and left testes. Thus some authors suggest a multicentric origin theory in such cases where other testis also gets involved by lymphoma [3,4,6]. In our patient, the other testis was free of lymphoma during post-operative follow-up.

Some authors are of the view that testicular lymphoma could be a secondary manifestation of occult systemic lymphomatous malignancy. However, the fact that patients of testicular lymphoma have been cured through orchidectomy alone favors its existence as a primary disease [4]. This finding supports the notion that testicular lymphoma is a clinical entity originating primarily in the testis and is not just the initial manifestation of subsequent generalized lymphomatous disease.

Approximately 68% of testicular lymphoma cases are classified as intermediate grade, diffuse large B-cell subtype, followed by high-grade, diffuse small non-cleaved subtype in about 30% of the patients [4]. In our case, final diagnosis of primary lymphoma of testis – non-hodgkin's, diffuse, large cell type, high grade, was made. However, there is no prognostic advantage for any pathological subtype [4]. Histopathological differentiation of testicular lymphoma from seminoma is usually a challenge [5]. In the present case, immunohistochemical stain positivity for LCA-CD45 (leucocyte common antigen); and negative EMA (epithelial membrane antigen) helped in confirming its identity as lymphoma (Figs. 1 & 2)

The prognosis of testicular lymphoma is generally poor, since disseminated disease is usually evident within the first two years following the diagnosis [4,7-10]. In our case too, CT-scan during follow-up showed enlargement of para-aortic lymph nodes, besides a right axillary node enlargement. The rarity of testicular lymphoma has prevented the carefully designed prospective trials that would evaluate clinical outcome of specifically targeted treatment programs for this disease. Therefore, clinical approach to the treatment of these cases has generally followed the evolution of knowledge in the treatment of similar, extra-testicular presentation cases [1,2]. For early-stage disease, opinion is divided regarding systemic chemotherapy following orchidectomy. Though, due to high incidence of disease spread, especially to the central nervous system (CNS), use of CNS prophylaxis with intrathecal chemotherapy is advocated [4]. The potential benefit of contralateral testicular irradiation also needs to be taken into account in the treatment planning [2]. Prospective multicenter trials incorporating a large number of patients would lead to better treatment options and more effective CNS prophylaxis, including combined modalities, in this uncommon site of extranodal lymphoma [1-4,7,9].

Conclusion:

Primary Non-Hodgkin's Lymphoma of Testis is a rare, most common testicular tumor in older males and has a propensity for bilateral involvement. The prognosis is generally poor, since disseminated disease is usually evident within the first two years following the diagnosis. Advanced-stage disease is usually managed with doxorubicin-based chemotherapy. Primary Non-Hodgkin's Lymphoma of Testis should be kept as differential diagnosis of testicular tumor in older age.

References:

1. Moller MB, d'Amore F, Christensen BE: Testicular lymphoma: A population-based study of incidence, clinicopathological correlations and prognosis—The Danish Lymphoma Study Group, LYFO. *Eur J Cancer* 1994; 30:1760-64
2. Tondini C, Ferreri AJM, Siracusano L, Valagussa P, Giardini R, Rampinelli I, et al. Diffuse Large-Cell Lymphoma of the Testis. *J Clin Oncol.* 1999; 17:2854-58
3. Fonseca R, Habermann TM, Colgan JP, O'Neill BP, White WL, Witzig TE et al. Testicular lymphoma

is associated with a high incidence of extranodal recurrence. *Cancer* 2000;89:713-14

4. Bhatia K, Vaid AK, Gupta S, Doval DC, Talwar V. Primary testicular non-Hodgkin's lymphoma--a review article. *Sao Paulo Med J.* 2007;125:286-88
5. Sussman EB, Hajdu SI, Lieberman PH, Whitmore WF. Malignant lymphoma of the testis: a clinicopathologic study of 37 cases. *J Urol.* 1977;118:1004-7.
6. Tepperman BS, Gospodarowicz MK, Bush RS, Brown TC. Non-Hodgkin lymphoma of the testis. *Radiology.* 1982;142 :203-8.
7. Zouhair A, Weber D, Belkacémi Y, Ketterer N, Dietrich PY, Villà S, et al. Outcome and patterns of failure in testicular lymphoma: a multicenter Rare Cancer Network study. *Int J Radiat Oncol Biol Phys.* 2002;52:652-56.
8. Wang C, Wang H, Wang Q et al. Primary testicular lymphoma: experience with 13 cases and literature review. *Int J Hematol* 2013;97:240–5.
9. Mazloom A, Fowler N, Medeiros LJ et al. Outcome of patients with diffuse large B-cell lymphoma of the testis by era of treatment: the M. D. Anderson Cancer Center experience. *Leuk Lymphoma* 2010;51:1217–24.
10. Thomas LC, Adonizio C, Filicko-O'Hara J et al. Testicular lymphoma. *Semin Oncol* 2010; 37:549–54.