



PRIMARY DIFFUSE LARGE B CELL LYMPHOMA OF PROSTATE: A RARE CASE REPORT

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ABSTRACT

Primary lymphoma of the prostate is a rarely encountered entity in surgical pathology. Usually it presents as secondary involvement from leukemia or lymphoma at a common site. Out of these, chronic lymphatic leukemia or small lymphocytic lymphoma is commonly detected. Prostatic non-Hodgkin lymphoma is extremely uncommon accounting for approximately 0.2-0.8% of extranodal lymphomas and 0.1% of all prostate neoplasms. Here we report the case history of a 48 year old man presenting with urinary obstructive symptoms and normal prostate specific antigen value. After open prostatectomy, histopathological examination revealed diffuse infiltration of atypical lymphoid cells in the stroma and atrophy of the prostatic glands. Positive immunostaining for CD 45 and CD 20 positivity and negative staining with CK proved the case as diffuse large B cell lymphoma. The patient did not have hepatomegaly or splenomegaly. After receiving RCHOP regimen the patient is doing well for last 14 months.

KEYWORDS: CD20, CD45, CK, diffuse large B cell lymphoma, prostate.

INTRODUCTION

Prostatic enlargement is mainly attributed to benign hypertrophy and adenocarcinoma. More than 90% of prostatic malignancies are caused by adenocarcinoma and other histological subtypes account for only 5-10%. Lymphoma of prostate though very rare is not an uncommon entity. Prostate involvement in lymphoma accounts for 0.09% of all the prostatic neoplasms and about 0.1% of non-Hodgkin's lymphoma(NHL).^[1] The correct diagnosis by histological examination and immunohistochemistry is mandatory for the patient management.

CASE REPORT

A 48 year old man presented with urinary urgency, hesitancy and weak urinary stream for last 2 years. Digital rectal examination showed mildly enlarged prostate with fibroelastic consistency. Prostate-specific antigen (PSA) value was normal around 0.8 ng/ml. Transurethral ultrasonography revealed findings suggestive of benign prostatic hypertrophy. All other blood investigations were within normal limits. The

patient had no hepatosplenomegaly and lymphadenopathy. Clinically the patient was diagnosed as a benign hypertrophy of prostate and prostatectomy was done. Gross received was grayish white globular structure measuring 4x3x3 cm (Figure 1). Cut section was solid, whitish and homogenous. Multiple sections were taken from different areas and all the tissue sections revealed similar histomorphology. There were diffuse effacement of the entire prostatic architecture by discohesive uniform looking tumor cells (Figure 2A). Cells were large with scanty cytoplasm, vesicular nuclei, irregular nuclear contour and prominent nucleoli in some cells(Figure 2B). Some atrophic glands are noticed with lumen containing the atypical lymphoid cells(Figure 2C). To establish the diagnosis as lymphoma immunohistochemistry was done for CD 45 and CD 20 which showed diffuse positivity (Figure 3A & B). CD 3 & CD5 were negative. The tumor cells were also negative for cytokeratin. Final diagnosis was done as primary diffuse large B cell lymphoma (DLBCL) of prostate based on the above observations. For the staging of lymphoma bone marrow examination was carried out

and reported as free of tumor cells. CSF analysis also was reported as free from tumor cells. Computer tomography of whole body was done and no primary focus was identified.

Photographs



Fig. 1:- Nodular grayish white tissue together measuring 4x3x3 cm.

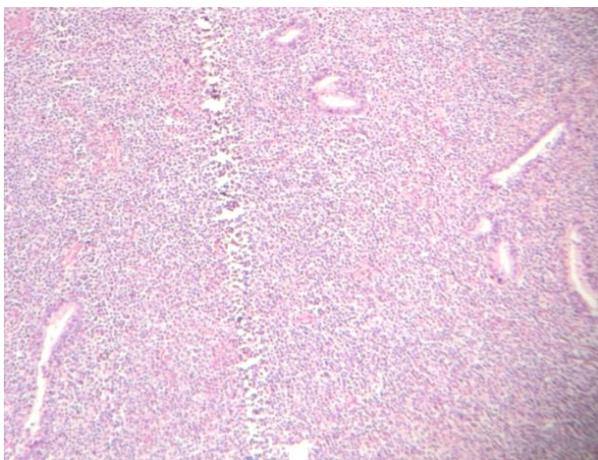


Fig. 2A:- H & E x 100. Low power view shows diffuse infiltration of atypical lymphoid cells into the prostatic tissue.

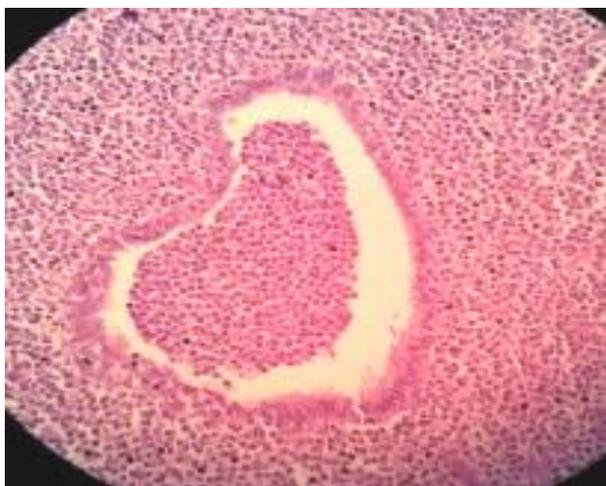


Fig. 2C:- H & E x 400. Atypical lymphoid cells surrounding the atrophic prostatic gland.

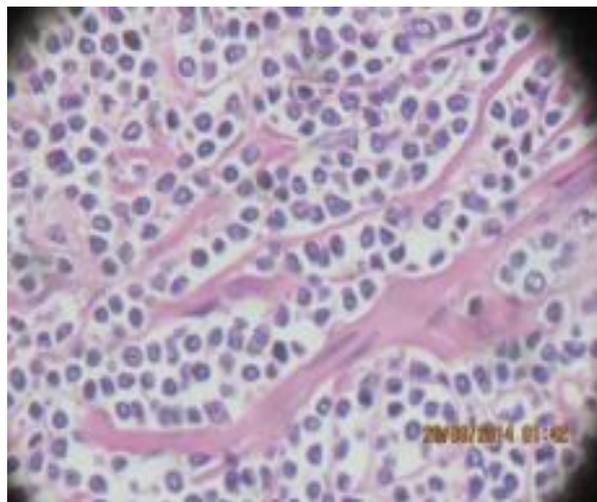


Fig. 2B:- H & E 400 X. atypical lymphoid cells having scanty cytoplasm with prominent nucleoli infiltrating in between the prostatic stroma.



Fig. 3A:- CD 45 x 100. The atypical lymphoid cells are diffusely positive sparing the glands.

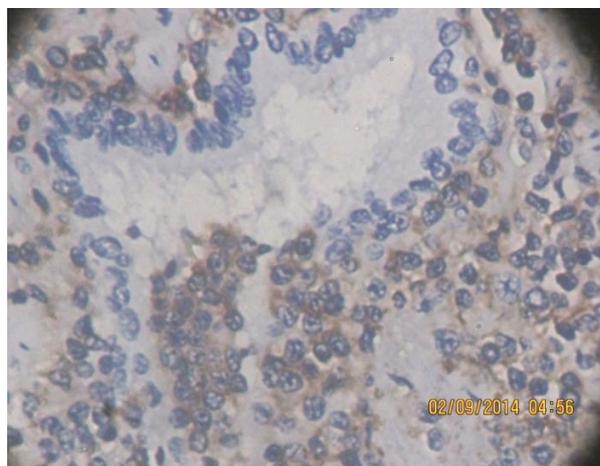


Fig. 3B:- CD 20 x 400. The lymphoid cells are of B cell origin as these are CD 20 positive.

DISCUSSION

Diffuse prostatic enlargement in an elderly person can raise a lot of clinical conditions out of which lymphomas are a very rare one. The occurrences of lymphoma as a primary focus accounts for only 0.09%. Indian literature

till date have documented few cases of primary non-Hodgkin's lymphoma of prostate. According to Bostwick and Mann, there are certain criteria proposed to designate a lesion as a primary lymphoma of prostate. These are 1) the symptoms of the patient should be due to prostate enlargement. 2) Prostate should be the primary site of involvement 3) there must be absence of hepatosplenomegally and no lymphadenopathy at least within 1 month of diagnosis.^[2]

According to the literature, till date the largest series of study was carried out by Bostwick *et al*^[2] (62 cases) and more recently by Chu *et al*^[3] (29 cases). Out of 62 cases of prostatic lymphomas, Bostwick found 22 cases as primary, as 30 cases as secondary and 10 indeterminate cases. Chu *et al* study showed out of 29 cases; 18 as incidental and 11 concurrent cases. All most all are of B cell origin. Among the histologic subtypes, DLBCL is the most common type followed by chronic lymphocytic lymphoma/small cell lymphocytic lymphoma.^[2] Rare lymphomas like mantle cell lymphoma, Burkitt lymphoma, MALT lymphoma^[4,5] and follicular lymphoma^[4] were encountered.

The mean age of the patient is 62 years with a range from 50 – 89 years. The most common symptoms include urinary obstruction such as urgency, frequency.^[1,2] Rare presentation may be hematuria, acute retention of urine and renal failure. Concurrent adenocarcinoma may be found.^[6] In our case, the patient presented with enlarged prostate and urinary obstructive symptoms along with normal PSA value. The clinical diagnosis was suspected as benign hypertrophy of prostate. The gross received was firm and nodular. Histopathological examination revealed proliferation of atypical lymphoid cells surroundign normal to atrophic prostatic glands. Immunohistochemically, the cells were CD 45 and CD 20 positive and CK, CD 3 & CD 5 negative.

The differential diagnosis for DLBCL of prostate includes high grade carcinoma, small cell carcinoma, sarcoma and non- neoplastic condition like granulomatous prostatitis. High grade carcinoma may mimic lymphoma because of single cell infiltration of highly undifferentiated malignant cells into the stroma. Immunohistocheistry for PSA and CD 45 will rule out carcinoma. Small cell carcinoma can be ruled out basing on its morphological appearance like small cell with scanty cytoplasm, stippled chromatin and cytokeratin positivity. Due to intravesicular BCG therapy sometimes granulomatous prostatitis develops which may show infiltration of epithelioid cells and lymphocytes along with atrophy of the prostatic glands. Here the histiocytes are only reactive in nature and focal presence of CD 45 positive lymphocytes is observed.

Out of various modalities of treatment chemotherapy regimen RCHOP is the standard one for prostate lymphoma.^[7] Out of various studies carried out on

prostate lymphoma, it has been suggested that the prognosis with both primary and secondary lymphoma are almost similar. The overall prognosis in prostatic lymphoma is poor. More than 60% patients die of lymphoma although survival up to 10 years is possible with combination chemotherapy.^[8] This patient received chemotherapy and now asymptomatic for last 14 months. Finally though lymphoma of the prostate is a rare entity it should be considered as a differential diagnosis of prostatic enlargement in order to avoid wrong diagnosis and to implement early therapy particularly if the PSA value is normal.

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