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Case Report
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Primary Diffuse Large B-cell Lymphoma of the Prostate: A Rare Case Report

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Background

Non-Hodgkin lymphoma is a common malignant tumor and about one third of cases occur in extranodal regions [1]. However, primary lymphoma of the prostate is relatively rare about 0.1% in all non-Hodgkin lymphoma and 0.09% of all prostate neoplasms [2]. In this article, we report an individual case of primary diffuse large B-cell lymphoma of the prostate and review of the literature.

Case Presentation

A 79-year-old man denied any systemic diseases before, but only benign prostatic hypertrophy with lower urinary tract syndrome with conservative medication control for 10 years. He had been otherwise healthy without underlying diseases, hepatosplenomegaly, anemia, or other systemic symptoms and signs. Family has colorectal cancer history. In 2023 March, he first visited our hospital due to diarrhea 20 times per day, treated with symptomatic medication. Then, in 2023 May, he suffered from acute urine retention and poor response to bethanechol and tamsulosin, still repeated acute urine retention then urethral catheterization was inserted. He was referred to our hospital, physical examination showed suprapubic region distension. And digital rectal exam found asymmetrical (Right >Left), hard consistency of right lobe, grade II. The PSA level was 0.266 ng/mL. Hb 11.1 g/dl. WBC 3.95 × 10^3/μl, Monocyte 11.6%, LDH 319 U/L. Bladder sonography volume has 154 cc, prostate size 43.2 cc. He also mentioned body weight loss 4 kg in recent months. Denied fever chillness or bone pain. Transrectal Ultrasound of prostate (TRUS) -biopsy was indicated to abnormal finding of digital rectum examination, and patient decided combined Transurethral Resection of Prostate (TURP). Bipolar TURP 10 gm was resected. TRUS biopsy showed diffuse large B-cell lymphoma, NOS, non-GCB subtype by Han's algorithm in both lobes (Figure 1). Contrast computed tomography of pelvis showed prostate irregular shape and inhomogeneous density with rectum invasion (Figure 2). Contrast computed tomography of lung showed no lesion. Positron emission tomography scan showed heterogeneously intense FDG uptake over the enlarged prostate SUVmax = 20.9, consistent with biopsy proven lymphoma. Multiple FDG-avid enlarged nodal lesion over the peri-rectal, pre-sacral space, bilateral internal/external/common iliac chains and abdominal para-aortic/caval space, left axillary level II-III and right SCF/ICF regions, suggestive of lymphoma with both sides of diaphragm. Bone marrow biopsy showed no lymphoma involvement. Port-A was then implanted. Following chemotherapy with R-modified CLOP, Mabthera, Lipodox, Vincristine, Endoxan, Retuximab.

Discussion

The diagnosis of primary lymphoma depends on the patient's clinical symptoms, histopathological,

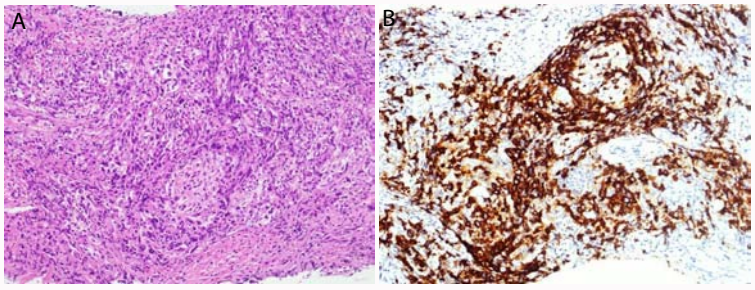

Figure 1: (A) The HE stain 200x shows a picture of diffuse proliferation of large lymphoid cells infiltrating in the prostatic stroma, accompanied with small reactive lymphocytes. The nerve is also involved by the lymphoma. (B) Immunohistochemically 200x, the lymphoma cells are positive for CD20.

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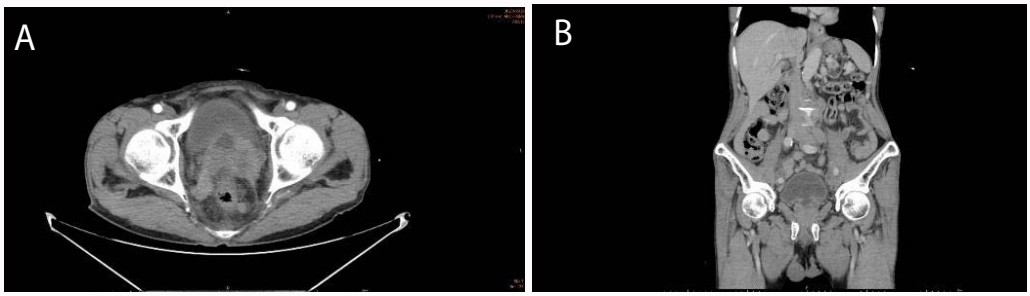

Figure 2: Contrast computed tomography (A)Axial view showed rectum invasion (B) Para-aortic multiple nodal involvement.

immunochemistry and relevant molecular exam results [3]. Also, confined in the prostate gland without any retroperitoneal lymph node or organ involvement. Most symptoms are like those of other prostate diseases, nonspecific symptoms such as urgency, frequency, painful urination, hematuria, increased nocturia, dysuria, and acute urinary retention, however specific symptoms associated with lymphoma such as fever, night sweats, and weight loss rarely appear in the early stages. For the diagnosis of primary lymphoma of the prostate, in addition to routine examinations, urological ultrasound, abdominal and pelvic CT, MRI, Positron Emission Tomography (PET)-CT, whole-body bone scan, cystoscopy, bone marrow biopsy, PSA, LDH, and other examinations are all useful items, which can help to diagnosis accurate neoplasm stage and assess the prognosis.

The present treatment of primary lymphoma of the prostate as reported in the literature is similar to that of other forms of lymphomas, mainly including chemotherapy, radiotherapy, and combined chemoradiotherapy [4]. According to Whitmore, surgical resection can relieve urinary tract obstruction but does not improve survival, but when a puncture biopsy is inconclusive and there is a high clinical suspicion of primary lymphoma of the prostate, a surgical biopsy may be the approachable option [5]. Chemotherapy is still the primary treatment as R-CHOP regimen [6].

In the study of Bostwick and Mann et al., the survival rate of prostate lymphoma was 1 year 64%, 2 years 50%, 5 years 33%, 10 years 33%, and 15 years 16% [7]. The prognosis of primary lymphoma of the prostate is relatively poor. Not only the stage, but also the histologic type is related to the prognosis. More primary lymphoma of prostate cases is needed for further research.

Conclusion

Early diagnosis depends on our caution. This disease might be masked as other prostate diseases before a surgical biopsy. There is always another differential diagnosis, never ignore the history taking and digital rectum examination. Early and proper treatment can extend survival rate and improve the life quality.

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