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Oncology

Treatment-refractory non-Hodgkin lymphoma of the prostate: A case report and review of the literature

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ABSTRACT

Non-Hodgkin lymphoma of the prostate is uncommon. Prostate specific antigen and transrectal ultrasound do not aid in diagnosis. Survival and treatment options are ultimately based on immune-histologic subtype and stage. Lower urinary tract symptoms attributed to lymphoma of the prostate can be refractory to systemic treatments as well as transurethral resection. This case provides the first description of the longitudinal clinical course of treatment-refractory localized Non-Hodgkin lymphoma of the prostate.

Introduction

Non-Hodgkin lymphoma (NHL) is one of the more common types of cancers in the United States. For perspective, There will be an estimated 74, 680 new cases of NHL in the United States in 2018, compared to an estimated 164,690 cases of prostate cancer.[1] The finding of NHL primarily in the prostate is rare. Of the few cases that have been reported, the majority were published in two series in the 1990s.[2,3] The largest series documented only 62 cases after querying all prostate pathology records as far back as 1940 between MD Anderson Cancer Center and the Mayo Clinic.[2] Treatment-refractory disease of the prostate has not been described. We describe a case of a patient with obstructive LUTS due to infiltrative lymphoma which required repeat TURP within one year.

Case presentation

A 77 year old physically active man with history of gout, coronary artery disease, and CLL presented for urinary retention. His CLL was diagnosed years prior due to leukocytosis and was being followed by medical oncology. The patient had presented with fevers, chills, weakness and left lower quadrant abdominal pain and presented to the emergency department where a CT scan demonstrated extensive retroperitoneal lymphadenopathy along left iliac chain and into left inguinal region with a diffusely enlarged and heterogeneous prostate (Fig. 1). A Foley catheter was placed for urinary retention. A PSA level was obtained and returned at 5.42.

At his outpatient urology appointment, his digital rectal examination demonstrated a symmetric prostate without induration or nodules. He was started on tamsulosin and dutasteride. He failed a trial of void the next month. Cystoscopy revealed obstructing lateral prostate lobes and was counseled toward a transurethral resection of the prostate, which he underwent. He passed a trial of void a week postoperatively. Pathology from the TURP revealed B-cell small lymphocytic lymphoma/chronic lymphocytic leukemia (a subtype of non-Hodgkin lymphoma) involving the prostate (Fig. 2). There was no evidence of prostate cancer.

The patient developed obstructive and irritative LUTS two months after the TURP and was started on clean intermittent catheterization due to incomplete bladder emptying and recurrent UTI. His PSA three months postoperatively decreased to 5.05. He was started on ibrutinib by medical oncology with significant improvement in LUTS and UTIs for a two-month period, but was unable to tolerate the medication due to side effects (fatigue, muscle cramps and acute gouty attack). His symptoms recurred after the ibrutinib was discontinued. He was then started on chlorambucil, which was better tolerated and provided control of his LUTS. LUTS later recurred again within two months of chlorambucil initiation. Office cystoscopy demonstrated a large, intrusive median lobe, obstructing lateral lobes, and a bladder full of debris. CT showed interval improvement in the prostate size and lymphadenopathy (Fig. 3). He underwent another TURP one year after the first with pathology showing persistent lymphocytic infiltrate

Abbreviations: NHL, non-Hodgkin lymphoma; CLL, chronic lymphocytic leukemia; LUTS, lower urinary tract symptoms; PSA, prostate specific antigen; CT, computed tomography; UTI, urinary tract infection; TURP, transurethral resection of prostate; BPH, benign prostatic hyperplasia

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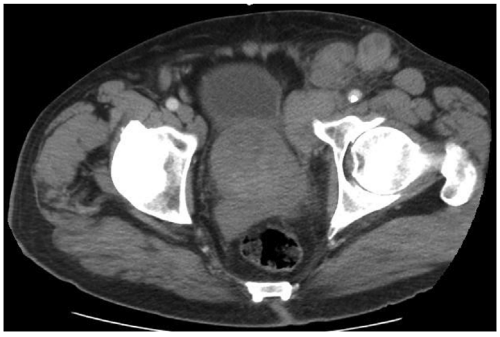

Fig. 1. CT showing prostatic enlargement with left retroperitoneal and inguinal lymphadenopathy.

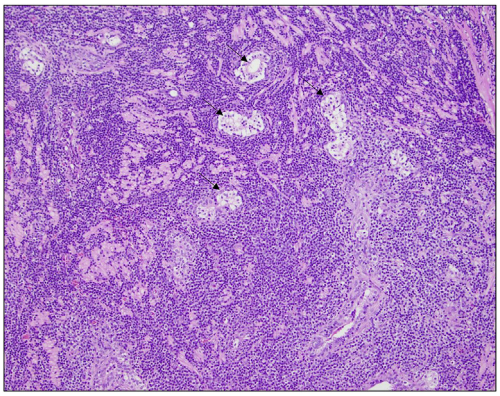

Fig. 2. Prostate chips demonstrating benign prostatic glands (arrows) engulfed by a diffuse infiltrate of small lymphoid cells. Hematoxylin and Eosin stains, 100X. The lymphoid cells are positive (not demonstrated) for CD20, PAX5, CD5, CD23 and negative for cyclin D1, with low MIB-1 proliferative index, consistent with B-cell small lymphocytic lymphoma/chronic lymphocytic leukemia.

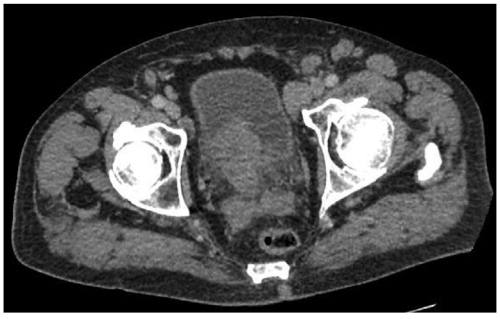

Fig. 3. Improvement of lymphadenopathy and interval decreased prostate size after systemic treatment and TURP.

consistent with his CLL. His International Prostate Symptom Score 4 months postoperatively was 4, and he subjectively was doing well at that time from voiding standpoint.

Discussion

Our 77 year-old patient was diagnosed with chronic/small lymphocytic leukemia/lymphoma (also known as CLL). The average age of diagnosis for CLL is 67 years old, an age where LUTS in males is most often attributed to BPH. CLL of the prostate tends to be an incidental finding in pathologic specimens, most commonly during transurethral resection.[2] In one series, 62% of the cases were diagnosed via transurethral resection, whereas 32% were found on needle biopsy, and 5% were found on prostatectomy specimens.[2] Transurethral biopsy of the prostate does not appear to be highly sensitive to detecting prostatic lymphoma, as a study of 1092 prostatectomy specimens showed that presence of lymphoma was predicted by TRUS biopsy only 22% of the time. Transrectal ultrasound does not aid in diagnosis of prostatic CLL.[3] CT scan may reveal adenopathy that can raise the level of suspicion for a lymphoma. PSA does not appear to be associated with presence of prostatic lymphoma. Mean PSA at time of diagnosis for lymphoma of the prostate was 2.6 in the largest series to date.[2] Only 20% of patients had elevated PSA > 4 ng/mL. Our patient had a PSA of 5.42 at the time of diagnosis, and he had no prostate adenocarcinoma noted on TURP specimen.

A retrospective study of 1092 prostatectomy specimens revealed that 0.8% of specimens were noted to contain lymphoma, all of which were low grade and stage.[3] This likely represents the closest approximation of the prevalence of prostatic lymphoma in a population with concurrent prostate cancer. None of those patients died from lymphoma, although average follow-up interval was not specified. Their survival data is in contrast to the Bostick series, where the vast majority of pathologic specimens did not reveal concurrent prostate cancer, and 25 of 62 cases harbored aggressive diffuse B cell lymphoma. With a mean follow-up of 34 months, 2-year lymphoma-specific survival was only 50%.[2]

CLL can typically be treated conservatively if the patient is asymptomatic and lacks bulky adenopathy. If treatment is indicated, options depend on the stage of the disease. For CLL confined to only one lymph node area, radiation is an option. Otherwise the treatment is generally systemic therapy such as chemotherapy (i.e. chlorambucil), targeted therapy (i.e. ibrutinib), or monoclonal antibody therapy (i.e. rituximab).[1] In our case, the patient demonstrated clinical response with ibrutinib, but this was discontinued due to side effects. He showed clinical and radiographic response to chlorambucil initially (Figs. 1 and 3), but eventually there was significant tissue regrowth and he required repeat transurethral resection which was able to control symptoms.

Conclusion

Non-Hodgkin lymphoma of the prostate is rare. Low grade lymphoma is typically not aggressive and can be monitored, although definitive cure is difficult. TURP can help to temporarily manage LUTS. For recurrent LUTS, systemic therapy for low grade CLL involving the prostate may temporarily control LUTS. For LUTS that are refractory to systemic therapy, the durability of TURP is unclear, and in our case the patient required a repeat procedure within one year. Optimal management of prostatic CLL is not yet well-defined.

Consent

The subject provided written consent to publish this case study.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.eucr.2019.100867.

Disclosures

Declarations of interest

None.

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