Prostate Tuberculosis: A Rare Complication of Pulmonary Tuberculosis with Malignant Features Mimicking Prostate Cancer

Amogu K. Eziyi1, Waheed A. Oluogun2*, Kamoru A. Adedokun3, Ganiyu A. Oyeniyi1

1Department of Surgery, Urology Unit, Ladoke Akintola University of Technology Teaching Hospital, 2Department of Morbid Anatomy and Histopathology, Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Osun State, Nigeria, 3Department of Oral Pathology, DUH, King Saudi University Medical City, Riyadh, Saudi Arabia

Abstract

Prostate tuberculosis (PTB) is an extremely rare complication of pulmonary tuberculosis (TB) that is alien to many urologists due to unaccustomed prostate involvement, thus posing a high tendency of confusion with prostate cancer. A 55-year-old Nigerian male presented with lower urinary tract symptoms with micturition difficulty, characterized by dysuria and weak urine stream that did not improve with straining, urge incontinence, and feeling of incomplete bladder emptying, some months after the completion of anti-Koch chemotherapy. The assessment of chronic bladder outlet obstruction secondary to benign prostatic hyperplasia was done, following a digital rectal examination which showed malignant features. The finding prompted requests for serum prostate-specific antigen (PSA) level and prostate biopsy. PSA level was 22.6 ng/ml, whereas histopathological examination showed Langhans-type giant cells suggestive of PTB. There is a high chance of missing out PTB in the diagnosis. Hence, a high index of suspicion is crucial in all TB-burden countries to make a differential diagnosis of PTB from classical prostate cancer.

Keywords: Anti-koch therapy, digital rectal examination, granulomatous prostatitis, prostate cancer, prostate tuberculosis

INTRODUCTION

Prostate tuberculosis (PTB) is a form of miliary tuberculosis (TB) in the prostate gland that is very rare in occurrence and alien to many urologists, and in consequence, the diagnosis and management are often unidentified.1 PTB is relatively an unusual extrapulmonary complication of mycobacterium TB in 1%–3% of all cases owing to massive lymphohematogenous spread of the mycobacterium bacilli.2 Unfortunately, TB is one of the major public health concerns in Nigeria. Indeed, Nigeria is ranked first in Africa among the high TB-burden countries. Statistics show that no fewer than 460,000 cases of TB are reported in Nigeria yearly, with an estimated

*Address for correspondence: Dr. Waheed A. Oluogun, Department of Morbid Anatomy and Histopathology, Ladoke Akintola University of Technology Teaching Hospital, PMB 5000, Osogbo, Osun State, Nigeria. E-mail: adeolokun@yahoo.com; oluogunakanni1@gmail.com

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prevalence of 616 cases/100,000.\[^{[1]}\] However, data show that PTB has been infrequently reported, and therefore, there is very limited information in the literature due to the unusual prostate involvement.

Further, most of the PTB patients are asymptomatic and are only diagnosed incidentally, while others show nonspecific symptoms, thus making the clinical suspicion difficult.\[^{[4]}\] Consequently, there is either a high tendency of misdiagnosis or misunderstanding of the disease due to inability to differentiate it from prostate cancer or benign prostatic hyperplasia. Meanwhile, PTB and prostate cancer have strikingly identical clinical presentation with raised serum prostate-specific antigen (PSA), suspicious prostate abnormality on digital rectal examination (DRE), and LUTS.\[^{[1]}\] Here, we report the case of a 55-year-old Nigerian male previously managed for PTB and later presented with LUTS after the completion of therapy for PTB.

**Case Report**

A 55-year-old male presented to the Surgical Outpatient Department at LAUTECH Teaching Hospital, Osogbo, Osun State, Nigeria, on the account of a 4-month history of micturition difficulty, characterized by dysuria and weak urine stream that did not improve with straining, urgency, hesitancy, urge incontinence, and feeling of incomplete bladder emptying. He had no history of hematuria and no penile discharge, no history of fall astride, and no history of urethral catheterization or instrumentation. He had been treated for pulmonary TB for 2–4 years before the presentation. The respiratory rate was 22 bpm, temperature was 36.5°C, and the blood pressure recorded 140/90 mmHg, while the pulse rate was 88 bpm. Physical examination was unremarkable, and systemic examinations were essentially normal except for inguinoscrotal hernia on the right inguinal area and DRE findings that were suggestive of malignancy. He had been treated for pulmonary TB for 2–4 years before the presentation. The respiratory rate was 22 bpm, temperature was 36.5°C, and the blood pressure recorded 140/90 mmHg, while the pulse rate was 88 bpm. Physical examination was unremarkable, and systemic examinations were essentially normal except for inguinoscrotal hernia on the right inguinal area and DRE findings that were suggestive of malignancy. He had then ordered to do PSA and prostate biopsy, which later came out to be 22.6 ng/ml and histopathological examination for the identification of giant granuloma. Sputum AFB and Gene X-pert were then later requested and both were negative.

**Discussion**

PTB is uncommon and rarely reported in Nigeria, despite the TB endemic situation. Not only in Nigeria is the report of PTB scarce in the literature but also the underdiagnosis of PTB is noted worldwide. About 77% of men that die from pulmonary TB have PTB occasioned by the constant missing of the diagnosis.\[^{[1]}\] In addition, patients with PTB usually present with nonspecific symptoms, except in few cases where symptoms such as irritative voiding, dysuria, and/or hematospermia are presented.\[^{[4]}\] In this regard, our case presented with difficult micturition (or dysuria), weak urine stream with straining, hesitancy, urge incontinence, and incomplete bladder emptying that are rarely observed in PTB. Again, in reverse to the previous case report,\[^{[4]}\] our patient did not experience neither hematuria nor hematospermia.

In addition, our case showed the characteristics of prostate cancer with a high elevation of PSA level and malignancy features on DRE. Meanwhile, PSA level and DRE are the gold standards for prostate cancer screening.\[^{[6]}\] Distinguishing PTB from prostate cancer is usually difficult, especially when the prostate gland is hard and nodular on DRE.\[^{[7]}\] At this state, a range of diagnostic investigations may be helpful. To obtain a definite diagnosis, we furthered our investigations with prostate biopsy. Histopathological examination showed chronic granulomatous prostatitis with few Langhans-type giant cells and lymphocytes, all suggestive of TB [Figure 1]. The case was discussed with the patient who was asked to recommend another course of anti-Koch chemotherapy consisting of isoniazid, pyrazinamide, and rifampicin, all *ante cibum* for the first 3 months. This was followed with the same combinations but with the replacement of pyrazinamide for pyridoxine under a scheduled follow-up. PSA level became normal at an interval of 3-month schedule. Besides, the lower urinary tract symptoms disappeared without surgical intervention, and radiological investigation was normal.

Moreover, most patients with PTB are commonly asymptomatic, and like in the majority of the literature,\[^{[4]}\] PTB is mostly diagnosed incidentally through histological examination by pathologists.\[^{[8]}\] Furthermore, in some years back, Huang *et al.*\[^{[9]}\] in Taiwan carried out a study involving ten patients who presented with DRE findings suggestive of prostate cancer over 10 years. However, needle biopsy of the prostate finally revealed TB. Therefore, suspicion of tuberculous prostatitis may require a confirmatory biopsy of the prostate.

**Conclusion**

PTB is one of the presentations of miliary TB, and this can manifest as either irritative or obstructive LUTS. As a result, the high index of suspicion is required to diagnose PTB, and clinicians must always consider it as one of the differentials of both benign prostatic hyperplasia and cancer of the prostate.

![Figure 1: Image showing histology of the infected prostate biopsy (H and E, ×40). The red arrow indicates Langhans-type of giant cell, the blue arrow indicates foreign-body type of giant cell, and the green arrow indicates lymphocytes](image-url)
particularly in TB-endemic regions or in every patient with a history of TB regardless of the treatment course. Furthermore, when TB prostatitis is diagnosed, we recommend that the patient should receive a full course of anti-TB medication.

**Declaration of patient consent**
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**
There are no conflicts of interest.

**References**
1. Mishra KG, Ahmad A, Singh G, Tiwari R. Tuberculosis of the prostate gland masquerading prostate cancer; five cases experience at IGIMS. Urol Ann 2019;11:389-92.
2. Diagnostic Standards and Classification of Tuberculosis in Adults and Children. This official statement of the American Thoracic Society and the Centers for Disease Control and Prevention was adopted by the ATS Board of Directors, July 1999. This statement was endorsed by the Council of the Infectious Disease Society of America, September 1999. Am J Respir Crit Care Med 2000;161:1376-95.
3. World Health Organization Report. Global Tuberculosis Control: Surveillance, Planning & Financing; 2008. Available from: https://apps.who.int/iris/bitstream/handle/10665/43831/9789241563543_eng.pdf?sequence=1&isAllowed=y. [Last accessed on 2019 Sep 09].
4. Abdulsalam AJ, Abdulsalam MA. An unusual case of prostate tuberculosis: A case report. Int Med Case Rep J 2015;8:99-102.
5. Kulchavenya E, Kholtovin D. Diseases masking and delaying the diagnosis of urogenital tuberculosis. Ther Adv Urol 2015;7:331-8.
6. Jang JY, Kim YS. Is prostate biopsy essential to diagnose prostate cancer in the older patient with extremely high prostate-specific antigen? Korean J Urol 2012;53:82-6.
7. Aziz EM, Abdelhak K, Hassan FM. Tuberculous prostatitis: mimicking a cancer. Pan Afr Med J 2016;25:130.
8. Lee SY, Choi SH. Treatment experience for incidentally diagnosed asymptomatic prostate tuberculosis in a patient with history of BCG intravesical therapy. Urol Case Rep 2018;17:39-41.
9. Huang K, Wu H, Hsu Y. Tuberculosis of the Prostate. J Urol 2001;12:126-30.