

# Tuberculosis of the Prostate: A Case Report

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## Abstract

Prostate tuberculosis is a rare form of genitourinary tuberculosis. It poses a major diagnostic challenge because its clinical and biological presentation often mimics tumor pathology (benign or malignant). We report the case of a 69-year-old man who presented with acute urinary retention. His PSA level was elevated and the digital rectal exam suggested suspicious prostatic hypertrophy. An adenectomy was performed. Pathological examination revealed adenomyomatous hyperplasia of the prostate with no morphological signs of malignancy. The prostatic parenchyma also contains epithelioid and giant cell granulomas with caseous necrosis, leading to a diagnosis of caseous follicular tuberculosis associated with adenomyomatous hyperplasia. Prostatic localization of tuberculosis is rare even in areas where it is endemic. The misleading clinical presentation can mimic prostate adenocarcinoma. Recent cases reported in the literature confirm the difficulty of diagnosis. This case highlights the importance of considering prostatic tuberculosis in the differential diagnosis of prostatic hypertrophy, particularly in regions with a high prevalence of tuberculosis. Pathological examination has an essential role in establishing the diagnosis and determining the treatment.

## Keywords

Granuloma, Histology, Madagascar, Prostate, Tuberculosis

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## 1. Introduction

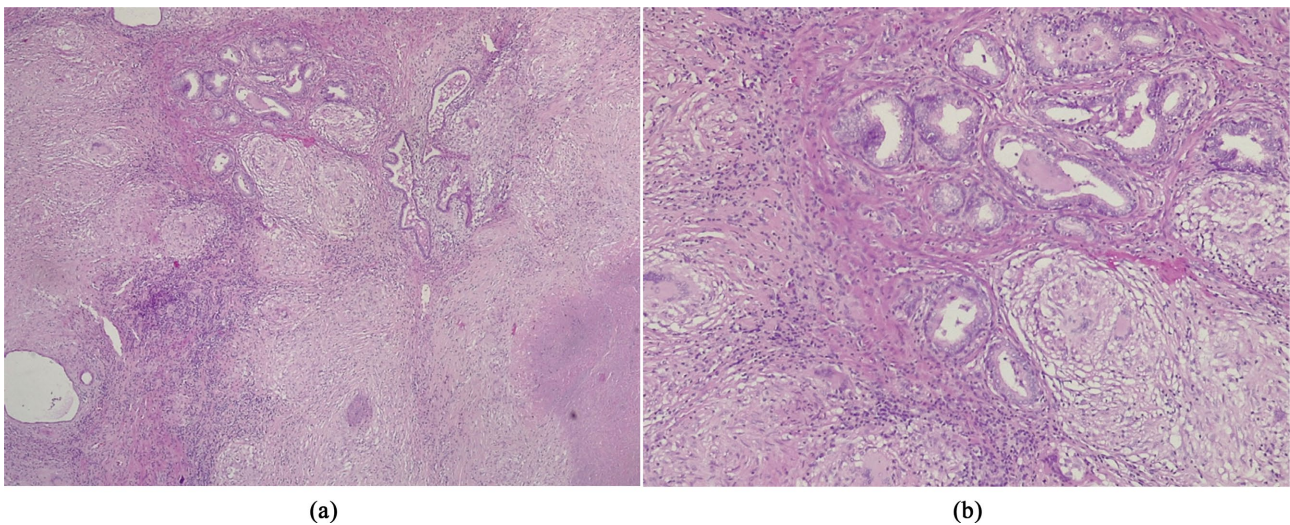
Tuberculosis is a chronic infection caused by *Mycobacterium tuberculosis*. In 2020, the World Health Organization (WHO) estimated that there were 9.9 million new cases and 1.5 million deaths [1]. Although pulmonary tuberculosis remains predominant, extrapulmonary forms account for approximately 15% of cases, and

urogenital tuberculosis accounts for 10 to 14% of these [2].

Prostatic tuberculosis is extremely rare, even in a high-endemic country [3]. Its nonspecific symptoms make diagnosis difficult and often incidental, relying mainly on histopathological examination. We report a case of prostatic tuberculosis discovered incidentally after adenomectomy for hypertrophy of the prostate.

## 2. Observation

This is a 69-year-old man without a known history of tuberculosis. He consulted for acute urinary retention, with irritative urinary symptoms. A digital rectal exam revealed an enlarged, firm, nodular prostate. PSA rate was high (27 ng/ml). A pelvic ultrasound revealed an enlarged prostate estimated at 90 ml. A prostate adenomectomy was performed. The surgical specimen was nodular, whitish and firm. The sections showed yellowish areas. Histological examination revealed a prostatic parenchyma with mixed glandular and myomatous hyperplasia without morphological criteria of malignancy. This was associated with a granulomatous, epithelioid, and Langhans giant cell inflammatory infiltrate, and caseous necrosis (**Figure 1**). The diagnosis was caseous follicular tuberculosis of the prostate associated with adenomyomatous hyperplasia. The patient was received as a medical treatment, antituberculous chemotherapy. He will receive Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol for 2 months and Isoniazid, Rifampicin for 4 months. He is only in the first month of his treatment. There was no suspicion of other site of tuberculosis.



Source: Department of Pathology, JRA University Hospital.

**Figure 1.** Prostate. Presence of numerous epithelioid granulomas with Langhans-type giant cells and caseous necrosis. HE  $\times$  40 (a); HE  $\times$  100 (b).

## 3. Discussion

Prostatic tuberculosis remains rare, accounting for less than 2% of urogenital tuberculosis cases [4]. In Madagascar, Rabesalama *et al.* reported the first published

case in the country in 2010 [5]. This observation is probably the second case described in the Malagasy literature. Recent series confirming this rarity have been described in the literature. Mishra *et al.* in India observed five cases between 2013 and 2018 [6], Alioune *et al.* two cases in Senegal in 2020 [7], Abdennasser *et al.* in Morocco one case in 2022 [8] and William *et al.* in Indonesia observed one case in 2023 [9]. The spread of *Mycobacterium tuberculosis* to the prostate is most often hematogenous from a pulmonary or renal localization [10] [11]. Spread by contiguity from the seminal vesicles or epididymis is rarer [4]. Some forms occur after intravesical instillation of BCG in the treatment of bladder carcinomas [12]. Our patient had no history of pulmonary or extrapulmonary tuberculosis.

The symptoms are nonspecific, consisting of dysuria, pollakiuria, or urinary retention. A digital rectal exam often reveals a hard prostate, suggestive of tumor pathology [7] [9]. PSA is often moderately elevated, as in our case. In the study made by Alioune *et al.* in India, 60% of patients had a PSA level above 20 ng/mL [6]. In prostatic tuberculosis, an elevated PSA level may be observed. Inflammation and granulomatous prostatitis cause disruption of prostatic epithelium. It is leading PSA to being released into the circulation. Necrosis and fibrosis can also stimulate epithelial irritation responsible for increasing PSA levels. Ultrasound usually shows a heterogeneous prostate with hypoechoic areas or calcifications, without specificity [9]. Yang *et al.* showed that ultrasound reveals non-enhanced areas corresponding to foci of caseous necrosis in 83% of cases [13]. However, this technique only guides the biopsy; usually, histological examination provides the diagnosis [14].

Microscopic examination shows epithelioid and giant cell granulomas with caseous necrosis. PCR (GeneXpert MTB/RIF) improves the sensitivity of the diagnosis to 95% [15]. Histopathological confirmation remains the key to diagnosis.

The treatment is based on a medical treatment, antituberculosis chemotherapy. The treatment regimen is the same as for other forms of extrapulmonary tuberculosis.

#### 4. Conclusion

Prostatic tuberculosis remains a rare condition, but it should be considered in all cases of atypical prostatic hypertrophy. Its clinical and biological similarity to cancer requires systematic histological confirmation. Early diagnosis and rapid initiation of anti-tuberculosis treatment lead to a favorable outcome. Prostatic tuberculosis should not be ruled out in case of prostatic hypertrophy in high-prevalence regions.

#### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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