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Isolated prostatic tuberculosis and review of literature

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ABSTRACT

Tuberculosis (TB) is one of the most important infectious diseases, particularly in the world. Amongst the genitourinary organs, prostatic TB is less common. We report an 68 year old patient, immunocompetent who presented obstructive and irritative symptoms of the lower urinary tract. A history of pulmonary tuberculosis was not present. The digital rectal examination was suspicious and PSA was a normal. The biopsy results did not reveal any malignant lesions but the transurethral resection of the prostate performed for voiding purposes showed prostatic tuberculosis. A very good clinical and biological improvement was observed after chemotherapy anti-tuberculosis.

1. Introduction

Tuberculosis (TB) is one of the most important infectious diseases, particularly in the world. Approximately, one-third of the world population is infected with TB.[1] Even though pulmonary system involvement is most common, extrapulmonary involvement is seen in 10% of cases. Of which 30–40% of the patients with extrapulmonary involvement will present with genitourinary tuberculosis(GU TB).[2] Amongst the genitourinary organs, prostatic tuberculosis (PTB) is less common. Here we report a case of unusual presentation of PTB in immunocompetent patient and a review of the literature to identify symptomatology, treatment and prognosis.

2. Presentation of case

An 68 year-old man, consulted for an obstructive lower urinary tract symptoms (LUTS) involving urinary frequency and dysuria lasting. This symptomatology has been evolving for about 4 months. No history of pulmonary TB was noted. He had no family history of tuberculosis. Digital rectal examination (DRE) showed an enlarged prostate with hard consistency and nodular surface. Biology found an elevation rate of prostatic specific antigen (PSA 12ng/ml). The urine culture was sterile. HIV serology was negative. The prostate ultrasound showed a heterogeneous prostate, enlarged, whose weight was estimated at 65g and Post-void residual volume (PVR) at 150 cc(Fig. 1). The chest X-ray was normal A prostate cancer was suspected. We performed an echo-guided prostate biopsy which didn't find malignant lesions. A transurethral resection of the prostate (TURP) was subsequently performed for voiding purposes. The histopathological examinations showed the existence of more follicles with giant cells and caseous necrotic in favor of PTB. (Fig. 2). We performed an intravenous urographic examination without finding any abnormalities in other structures of the urinary tract. The patient received six months of anti-tuberculosis treatement (ATT). Combination of two major (rifampicin, isoniazid) and two minor (pyrazinamide, ethambutol) anti-tuberculosis drugs taken for two months, followed by a combination of two major anti-tuberculosis drugs for four months with good clinical and biological tolerance. After one year, the outcome was uneventful with improvement of LUTS and a PSA level at 2,2ng/ml.

3. Discussion

GU TB represents 10–14% of all locations of extra-pulmonary tuberculosis.[3] Prostate localization, especially if it is isolated, is rare. It was first described in 1882 by Jasmin et al.[2] Its incidence is estimated at 6.6% of the urogenital tuberculosis according Scotch Brady Urological

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Fig. 1. Heterogeneous prostate of 65g with a post-void residual volume of 150 cc.

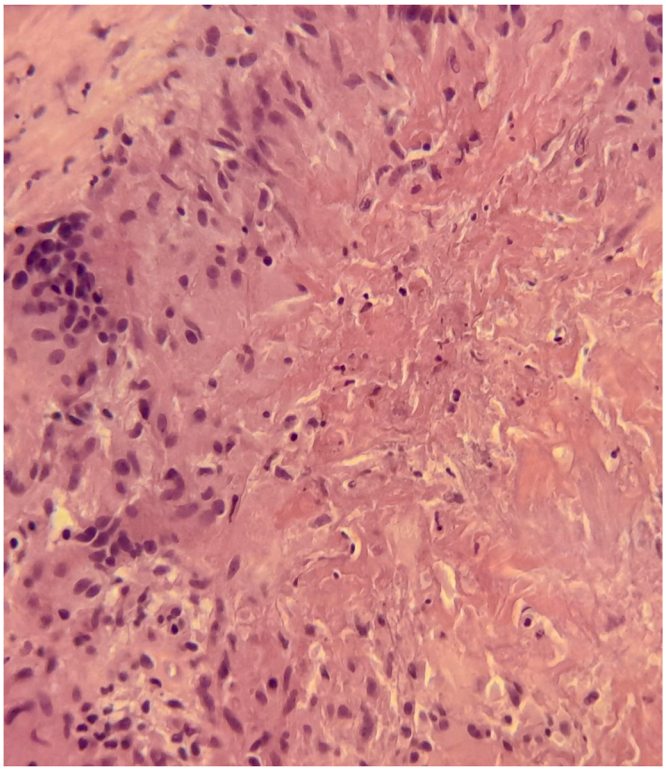

Fig. 2. Epithelioid and gigantocellular granuloma centred by caseous necrosis.(HEx40).

Institute in Baltimore.[4]

Based on a systematic Pubmed search using the keywords « tuberculosis prostatic », we have found 34 cases published in the literature. We have excluded those who associated others organs. We have selected therefore 25 cases for review. All the cases are summarized in (Table 1). The main limitation of our analysis is the lack of information in some cases. Most of the published cases are case reports.

Tubercular infection of the prostate is usually the result of hematogenous spreading. It can also occur as a result of descending infection from the urinary tract or local spreading from the genital tract.[4]

Initially, the patients are usually asymptomatic or present with non specific irritative voiding symptoms. Patients may present with symptoms of prostatic enlargement such as nocturia, pollakiuria and dysuria. In the review of literature, amongst the patients with PTB, 19/25 patients presented with urinary symptoms (76%). The DRE data have no specificity and can be confused with a prostatic adenoma.[5] PTB may cause transient elevation of PSA levels that decreases with resolution of inflammation. In our case, serum PSA came down to normal range after 6–8 weeks of ATT.

Tuberculosis serology by enzyme-linked immunosorbent assay (Elisa) or polymerase chain reaction (PCR) tests currently allow for a rapid biological diagnosis of tuberculosis with a sensitivity of 80 and 95%.[4] Unfortunately, these new tests are still difficult to access in developing countries such as ours.[3]

On the morphological level, ultrasound usually shows an enlarged prostate, of heterogeneous echostructure with sometimes areas of calcification. Endorectal ultrasound provides images and guides the biopsy. The diagnosis is based on the detection of Koch's bacillus (BK)in urine or seminal fluid (direct examination and culture on a specific medium) and/or on anatomopathological examination of biopsy specimens. The histological appearance is that of a typical epitheliogiganto cellular granuloma with characteristic caseous necrosis.[4] In our case, the confirmatory diagnosis was made after histopathological examination. On the anatomopathological level, the macroscopic aspect depends on two opposite processes: one of destruction and caseation creating cavities, the other of defense by fibrosis limiting the extension of the lesions. It is this latter process that leads to obstructive phenomena.[4]

Treatment is essentially medical using antibacillaries. The protocol is currently well codified,. Antituberculosis treatment combines two major (rifampicin, isoniazid)and two minor(pyrazinamide and ethambutol) antituberculosis drugs taken once daily for 2 months, followed by a combination of two major antituberculosis drugs(rifampicin, isoniazid) for 4 months. Surgical treatment is only indicated in cases where medical treatment has failed.[4] It consists of excision of the lesions, with or without drainage, by endoscopic or open drainage. A well-conducted medical treatment usually leads to a favourable evolution. Majority of the cases in the literature review were treated similarly and did well.

4. Conclusion

Isolated prostatic tuberculosis is rare. It can simulate prostate cancer. Histological analysis is essential for diagnosis. It should be considered in an elderly patient, especially in countries where tuberculosis is endemic. Treatment was based on antituberculosis antibiotics with a good prognosis.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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Table 1
Reported cases of tuberculosis prostatic.

Authors	Years	Numbers of patients	symptoms	Country	Imaging	Treatement	Follow up
Duarte ojeda jmand	1995	01	unknown	Spain	Trus	Drainage and ATT	Recovered
Wolf Le	1996	01	Urinary hesitency and perineal pain	India	Not provided	ATT	Not provided
Stephen J	1996	01	fever and irritative voiding symptoms	USA	Trus	Drainage and ATT	Recovered
Hinyokika Kiyo	1998	01	urinary retention	Japan	Trus	ATT	Recovered
A kostakopoulos f	1998	05	urinary retention	Grece	Trus	ATT	Recovered
Keita fujikawa	1999	01	Scrotal pain	Japan	US	ATT	Recovered
Chan WBC	2000	01	dysuria	Australia	TRUS	ATT	Recovered
Rafique M	2001	01	urinary retention	Pakistan	Cystoscopie	ATT	Recovered
Oka N	2001	01	hematuria	Japan	Trus	ATT	Recovered
Cebo Ka	2002	01	fever and dysuria	USA	US	ATT	None
Bhargawa N	2003	01	urinary retention	India	US	ATT	Recovered
Benchekroun A	2003	02	LUTS symptoms of lower urinary tract	Morocco	US	ATT	Recovered
Aust Tr	2005	01	dysuria	USA	US	ATT	Recovered
Kumar S	2006	01	pyroxia	India	CT	Drainage and ATT	Recovered
Daniel Saenz abad	2008	01	Fever fatigue and weigh lost	Spain	Trus	ATT	Recovered
SALLAMI S	2009	10	LUTS and retention urinary	Tunisia	US	ATT	Recovered
Lee Py	2010	01	urgency	Malaysia	Trus	ATT	Recovored
Puri r	2010	01	Dysuria et fever	India	MRI	Drainage and ATT	Recovered
Doo Sw	2012	01	Urinary urgency	Korea	Trus	Drainage and ATT	Recovered
Liang K	2015	01	Urinary retention	USA	Trus	Drainage and ATT	Recovered
Santosh Kuma	2015	01	Pyroxia unknown	India	Trus	Drainage and ATT	Not provided
El Majdoub aziz	2016	01	Obstructive lower urinary tract involving	Morocco	Trus	ATT	Recovered
Ajay Verma	2016	01	Alteration of the general condition	India	Trus	ATT	
Kumar Gaura	2019	05	LUTS	India	Trus	ATT	Recovered
Suman baral	2020	01	Urgency and nocturia	Nepal	US	ATT	Recovered

ATT: antituberculosis treatement; US:ultrasound; TRUS:transrectal ultrasound; LUTS:lower urinary tract symptoms.

Author contribution for-profit sectors

All authors have contributed to this work and have read and approved the final version of the manuscript.

Declaration of competing interest

The authors declare that they have no conflicts of interest.

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