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. 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). 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. It was first described in 1882 by Jasmin et al. It’s incidence is estimated at 6.6% of the urogenital tuberculosis according Scotch Brady Urological.

3. Discussion

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

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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. 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. 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%. Unfortunately, these new tests are still difficult to access in developing countries such as ours.

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 epitheliogigantocellular granuloma with characteristic caseous necrosis. 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.

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. 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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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.

Table 1
Reported cases of tuberculosis prostatic.

| Authors             | Years | Numbers of patients | Symptoms                          | Country     | Imaging | Treatment                     | Follow up |
|---------------------|-------|---------------------|-----------------------------------|-------------|---------|--------------------------------|-----------|
| Duarte ojeda jm and | 1995  | 01                  | unknown                           | Spain       | Trus    | Drainage and ATT              | Recovered |
| Wolf Le             | 1996  | 01                  | Urinary hesitancy 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 Kiyoo     | 1998  | 01                  | urinary retention                 | Japan       | 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 |
| Cobo Ka             | 2002  | 01                  | fever and dysuria                 | USA         | US      | ATT                            | None      |
| Bhargava 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 weigb 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                            | Recovered |
| 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 Haral         | 2020  | 01                  | Urgency and nocturia              | Nepal       | US      | ATT                            | Recovered |

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

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