

Urogenital Tuberculosis: Case Reports

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Abstract

Tuberculosis of the urogenital tract is a form of extrapulmonary TB; it's relatively common in countries with a substantial burden of tuberculosis.

UG-TB can manifest with acute or chronic inflammation of the urinary or genital tract, abdominal pain, abdominal mass, obstructive uropathy, infertility, menstrual irregularities and abnormal renal function tests. Imaging can aid in localizing site, extent and effect of the disease, obtaining tissue samples for diagnosis.

The specific diagnosis of UG-TB is achieved by culturing *Mycobacterium tuberculosis* from an appropriate clinical sample or by DNA identification.

The therapeutic protocol of this form of tuberculosis doesn't differ from that of pulmonary tuberculosis. The prognosis is depending in an early diagnosis and adequate treatment.

Keywords: Tuberculosis; Extrapulmonary; Urogenital; Immunocompetent Patient

Introduction

Tuberculosis (TB) is a major public health problem worldwide. An estimated 10,4 million people developed TB in 2017 [1].

Urogenital tuberculosis is a frequent form of extrapulmonary TB but it is mostly overlooked disease because its insidious onset and no specific symptoms. Ureteral stenosis is the most frequent lesions in the urinary forms, while in the genital forms are the epididymal nodule in man and chronic salpingitis in women. The authors report three cases of urogenital tuberculosis in immunocompetent patients.

Case Report

Case report 1

A 65 year-old-man sought medical attention due to 4 months history of dysuria, pollakiuria and suprapubic pain associated with sporadic vespertine fever and a weight loss.

His symptoms continued after receiving different antimicrobial treatment. No abnormalities were found upon abdominal examination.

Laboratory tests showed the following results: hemoglobin 12 g/dl, White blood 5300/mm³, platelets 233000/mm³, liver function was normal and glomerular Filtrate rate (GFR) 98 ml/min/1,73m². HIV status was negative and urine analysis showed hematuria y leukocyturia and traces of proteins. Abdominal ultrasound revealed dilatation of the right pyelocaliceal system. This data was confirmed by abdominal computed tomography (Figure 1 and 2).

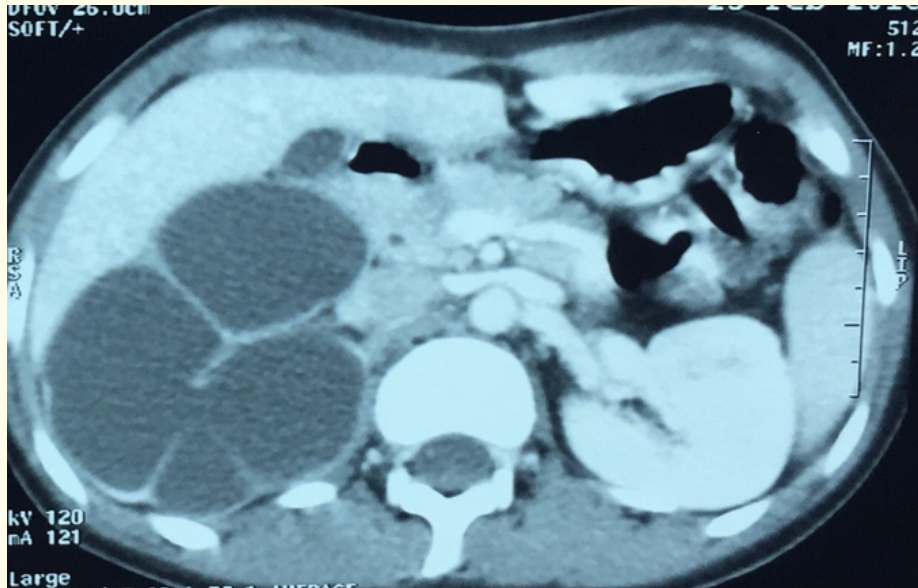


Figure 1: Abdominal-pelvic computed tomography Scan showed cortical thinning with markedly dilated calices.



Figure 2: Urography showed right ureterohydronephrosis.

Intravenous urography showed right ureterohydronephrosis with ureteral stenosis.

Due to suspected renal tuberculosis we performed a tuberculin skin test which was positive (12 mm) and screened for acid-fast bacilli in the urine which was positive in direct exam and culture. Chest x-ray showed no abnormalities.

We decided a placement a double J stent in right side and the patient began antituberculosis treatment. The outcome after 6 months was good.

Case report 2

A 36-year-old male smoker without history of pulmonary tuberculosis or exposure to bacilliferous patients. He was admitted to the hospital with scrotal pain.

The clinical examination revealed a testicular mass with multiple cutaneous fistulae was observed (Figure 3).

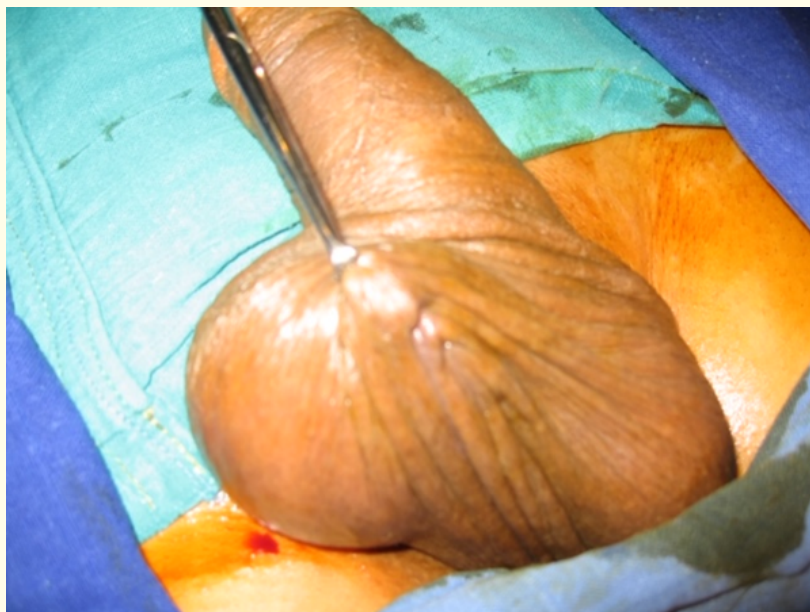


Figure 3: Right epididymitis associated with multiple cutaneous fistulas.

The usual blood tests showed normocytic normochromic anemia with a 10 g/dl, 35 mm erythrocyte sedimentation rate (ESR) in the first hour and a 25 mg/l CRP.

Renal and hepatic biological assessments were normal. The tuberculin skin test was positive at 15 mm and chest X-ray showed no abnormality and Koch bacillus research in sputum and urine was negative on direct examination and tumor markers were normal.

The scrotal ultrasound showed a heterogeneous change in the right epididymis.

Partial epididymectomy was performed with resection of the fistulous pathway (Figure 4). The histological study showed an epithelioid giant cell granuloma with caseous necrosis suggestive of genital tuberculosis.

The patient received anti-tuberculous regimen with rifampicin, isoniazid, pyrazinamide and ethambutol for 2 months, the isoniazid and rifampicin combination for 4 months with good clinical evolution.

Case report 3

A 45 year old multiparous female with no premorbid illness came to emergency with complaints of abdomen pain distension and fever since 3 months.



Figure 4: Partial epididymectomy with fistulous path resection.

Patient also complained of decreased appetite and 10 kg weight loss. Pelvic examination revealed normal size, anteverted, mobile uterus. Left adnexa were palpable and others systems were normal.

Initially laboratory studies showed hemoglobin 10,5 g/dl, total leukocyte count 6580 cells/mm³, erythrocyte sedimentation rate (ESR) 35 mm/h. Liver and renal function was normal. Mantoux test and three samples of sputum acid-fast bacteria were negative. Carbohydrate antigen (CA) was 125 U/ml (normal < 35 U/ml). Chest X ray showed no abnormality and HIV status was negative.

Pelvic Magnetic Imaging (MRI) revealed a left adnexal mass (Figure 5).

The radio clinical feature is suggestive of an ovarian tumor. Exploratory laparotomy showed left adnexal mass an peritoneal inflammation with adhesences.

Histopathology revealed chronic granulomatous lesions suggesting tuberculosis.

Patient started antituberculosis treatment and, on follow up, symptoms and CA-125 levels normalized.

Discussion

Tuberculosis (TB) is a current public health problem, remaining the most common worldwide cause of mortality from infectious disease. Urogenital tuberculosis accounts for 5.3% of extrapulmonary TB, can reach the two kidneys, the ureters the bladder, the prostate, the vas deferens, the epididymis and the testes.

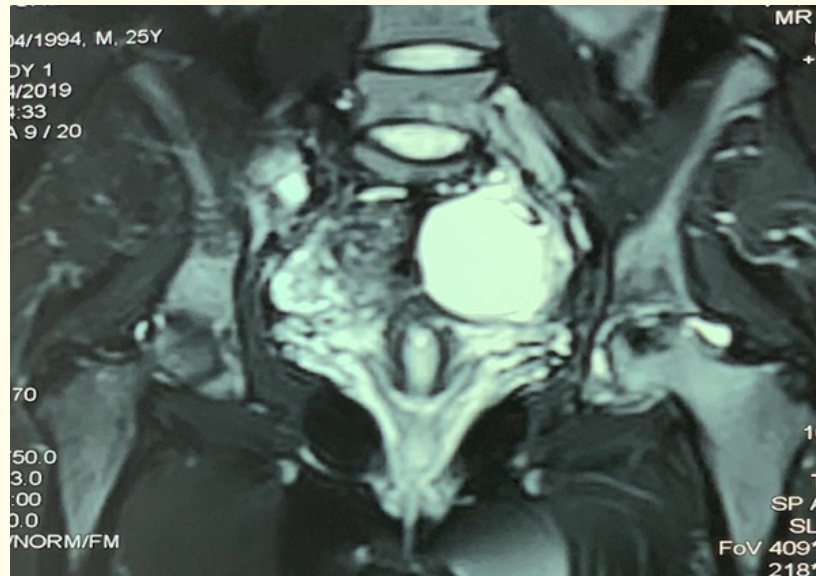


Figure 5: Pelvis MRI showed left adnexal mass.

In women, the most common disease is salpingitis [2]. Evidence from the literature suggest that the infecting *Mycobacterium tuberculosis* bacilli reach the kidney through hematogenous spread from the lung, then spread down the ureter, bladder and/or prostate [2].

UG-TB can manifest with acute or chronic inflammation of the urinary or genital tract. Delay in diagnosis results in disease progression, irreversible tissue and organ damage and chronic renal failure.

The bacilli are lodged in the cortico-medullary junction and form granulomas that can remain stable for many years and then reactivate and cause kidney damage.

Clinical symptoms are often insidious; dysuria and macroscopic hematuria are more frequent symptoms. Renal colic can occur in up to 10% of cases [3].

When TB infection progresses, papillary necrosis may occur with destruction of the renal parenchyma and extension to the collecting system. In addition, ureteral stenosis can cause obstructive uropathy with renal failure.

The combination of alterations in the renal tract and in the urinary tract is highly suggestive of urinary tuberculosis [4].

The definitive diagnostic will be done with the demonstration of the *Mycobacterium tuberculosis* in the urine.

The direct examination and the urine culture puts the diagnosis with a sensitivity between 37% and 79%. PCR puts diagnosis of TB in 24 to 48 hours with a sensitivity of 75 - 94% [5]. The treatment of urogenital tuberculosis is essentially medical. Surgical intervention as an adjunct to medical drug treatment is required in certain circumstances.

Genital tuberculosis affects generally young adult and the most commonly involved organ is the epididymis. Around 30 to 50% of patients have no history pulmonary involvement or exposure to tuberculosis [6].

Clinical manifestations are variable and may include fever, increased frequency of urination, frank pain, dysuria with sterile pyuria or hematuria, suprapubic pain or a painless testicular mass [7].

The presence of cutaneous fistulas in advanced processes is possible. EPTB is a difficult diagnostic to make because the presenting non-specific symptoms and some cases require surgical confirmation. Epididymitis tuberculosis can be potentially cured by anti-TB medications if diagnosed correctly and surgical resection is usually reserved for those patient who do not respond to medical treatment [8].

Female genital TB is rare; its incidence varies by references from 2.5% in the Maghreb to 0.005% in developed countries [9].

Genital TB in females is well recognized as an important etiological factor of infertility in countries with a high prevalence of TB.

Genital TB is mostly secondary to pulmonary TB or intrapulmonary foci such a kidneys, meninges, skeletal system and gastrointestinal system.

The most frequent locations of genital TB are the fallopian tubes (95 - 100%) followed by the endometrium (50 - 60%), ovaries (20 - 30%) [10].

Clinical signs include infertility, hypogastric pain, leucorrhoea, more pelvic, and menstrual disorders. Genital TB can mimic or coexist with other gynaecological and abdominal pathologies [11].

Conclusion

Genitourinary tuberculosis is common in countries endemic to tuberculosis; it is under-diagnosed because the symptoms aren't specific.

This disease should be evoked inside any urinary signs and epididymitis or adnexal mass especially in patient immunocompromised or coming from endemic area.

Conflict of Interest

None.

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