



# Genitourinary tuberculosis: a case report

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## ■ ABSTRACT

Tuberculosis is a disease which has a high incidence worldwide. However, involvement of the urogenital system is not so common, occurring in only 1.2% of cases. A clinical case of a 61-year-old patient who was admitted into our hospital with severe kidney and bladder tuberculosis is presented.

This case illustrates both the significant damage genitourinary tuberculosis can cause and the urologist's role in the diagnostic and therapeutic approaches to the disease.

**KEY WORDS:** Tuberculosis, Urogenital.

## ■ RESUMEN

*La tuberculosis es una enfermedad con alta incidencia a nivel mundial. Sin embargo, a pesar de esto el involucro del sistema urogenital no es tan elevado, afectando sólo en 1.2% de las ocasiones. Nosotros presentamos el caso clínico de un paciente de 61 años que acudió a nuestro hospital con afección severa por tuberculosis a nivel renal y vesical.*

*En el caso de este paciente se observaron los importantes daños que puede ocasionar esta enfermedad, y el papel que desempeña el urólogo en el abordaje diagnóstico y terapéutico.*

**Palabras clave:** tuberculosis, urogenital.



## ■ INTRODUCTION

One third of the world population is estimated to be infected with *Mycobacterium tuberculosis* and 8 to 10 million new cases present annually. Among the factors responsible for this are HIV, immigrants with health problems and the deterioration of public health institutional infrastructure (1).

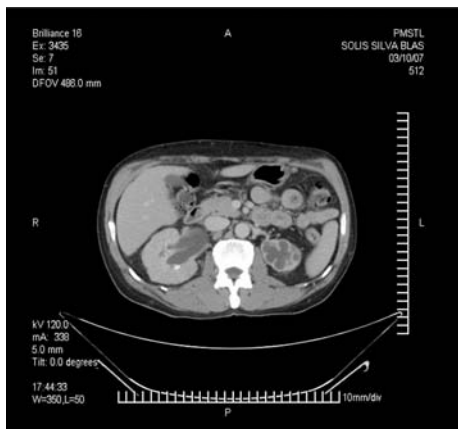
Genitourinary tuberculosis (GUTB) is an important but uncommon presentation of tuberculosis found in approximately 1.2% of patients in a variety of geographic locations (1).

All tuberculosis bacillus infections are acquired via the respiratory tract. Infection probability depends on the length of exposure, the size of the inoculum,

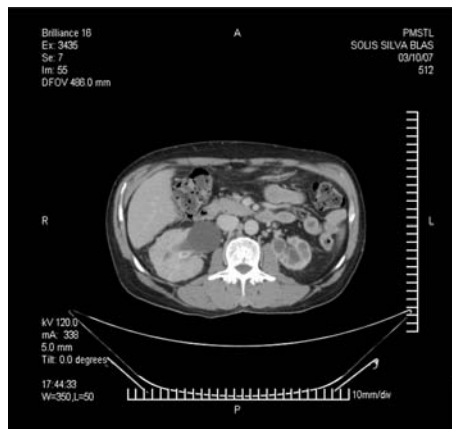
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**Figure 1.** Computerized tomography revealed severe hydronephrosis and loss of the cortex/medulla relation in the left kidney and moderate hydronephrosis with a good cortex/medulla relation in the right kidney.



**Figure 2.** Computerized tomography showing left hydroureter.

the microbial infectivity as well as on the state of the patient's immune system.

### ■ CLINICAL CASE

The case of a 61-year-old male patient, with a history of serious alcoholism, is presented. He was admitted to the emergency room with oliguria, together with oral intolerance, nausea, vomiting and a sudden dysfunction of his general physical state.

Physical examination revealed normal thorax, soft, palpable abdomen, slight pain in the hypogastrium, positive (+) right costovertebral angle percussion, benign Grade I rectal examination and normal genitals.

Blood test results showed hematocrit 41.9%, hemoglobin 13.4grs/dl, platelet count 485 000 K/ul, leukocytes 14.6 K/ul, normal coagulation, glucose 126, BUN 169.3, creatinine 9.7, chloride 91, sodium 131, K 4.74, and calcium 9.68. Urinalysis showed leukocytes 100/c, erythrocytes 20/c, negative nitrites and pH 7.

Computerized tomography revealed severe hydronephrosis and loss of the cortex/medulla relation in the left kidney and moderate hydronephrosis with a good cortex/medulla relation in the right kidney. There was bilateral hydroureter, generalized thickening of the bladder wall and the image was suggestive of neoplasm in the trigone of bladder (Figs. 1- 4)

Cystoscopy showed evidence of hemorrhagic cystitis and abundant detritus. The ureteral meatuses were not able to be seen in the study, but a cheeselike mass was observed. Transurethral resection of bladder (TURB) was

carried out on the mass, as well as mapping biopsies and urinary cytology. Right percutaneous nephrostomy catheter was subsequently put into place.

The histopathological report revealed bladder tuberculosis and positive Ziehl-Neelsen stain for acid-alcohol resistant bacilli (Figs. 5 and 6).

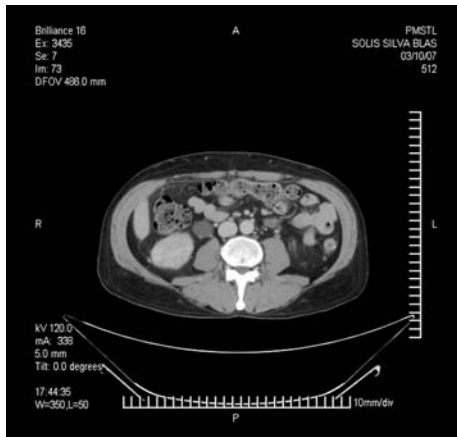
### ■ DISCUSSION

Genitourinary tuberculosis is acquired through the blood stream during initial infection. The kidney is usually the first infected organ of the urinary tract and other parts are then infected by direct extension. Initial infection occurs at the renal cortex where the bacillus lodges and forms granulomas. Disease development depends on interaction between the pathogen and the host immune system (1).

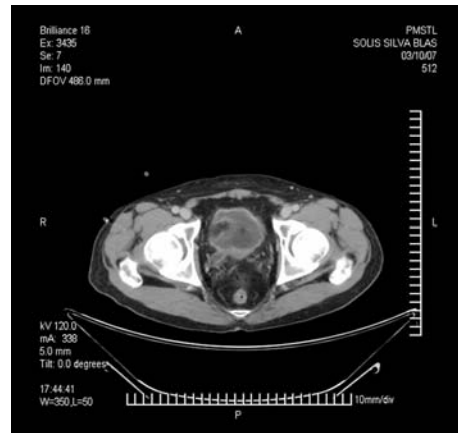
Initial infection in this site is around the ureteral meatus, which becomes edematous and then forms granulomas that obstruct the ureteral orifice. If this process advances, the rest of the bladder mucosa becomes edematous and forms granulomas.

In advanced disease stages the bladder wall becomes fibrous and contracts and the ureteral orifice acquires the classical appearance of a golf-hole.

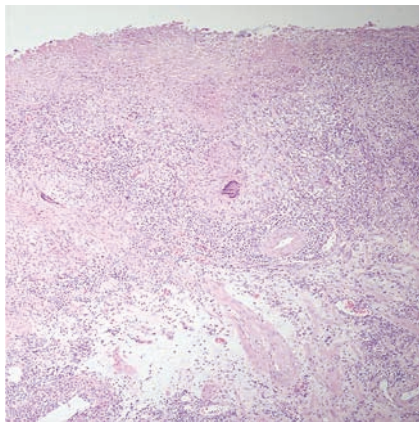
Genitourinary tuberculosis should be considered as a possible diagnosis in the patient presenting with vague urinary symptoms of lengthy progression and no apparent cause. These patients usually present with recurrent cystitis and urinalysis tends to reveal leukocyturia and microscopic hematuria (1).



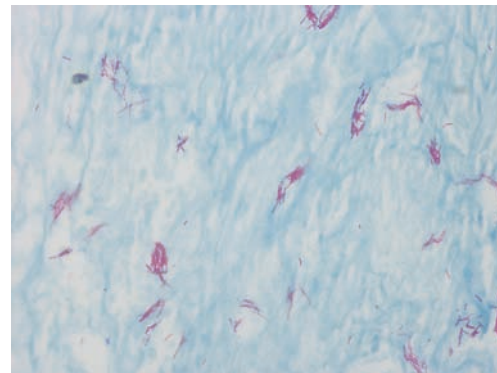
**Figure 3.** Computerized tomography showing right hydronephrosis.



**Figure 4.** Computerized tomography showing generalized thickening of the bladder wall along with right hydronephrosis and a mass in the trigone of bladder.



**Figure 5.** H & E stain in bladder tissue showing granulomas with epithelioid histiocyte ring, giant cells and central necrosis.



**Figure 6.** Ziehl-Neelsen stain positive for acid-alcohol resistant bacilli.

The most important key to GUTB diagnosis is provided by the appropriate urine test (pyuria and *Mycobacterium tuberculosis* culture). Precise and rapid laboratory tests have recently been introduced to detect urinary tuberculosis by polymerase chain reaction (PCR) (2-4).

The most common findings in imaging diagnoses are hydronephrosis and hydronephrosis along with renal

parenchyma cicatrization and an increase in wall density of the urinary tract (3).

## CONCLUSIONS

Genitourinary tuberculosis is not frequently seen. However, it is of utmost importance that it be suspected in cases similar to the present one. If

not treated in its early stages, GUTB progression can cause severe deterioration of the genitourinary apparatus.

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