Clinics in Surgery

Case Report
Published: 05 Mar, 2021

# Rare Case of Obstructive Anuria Revealing Urinary Tuberculosis

*Abdi El Mostapha*, Nedjim Abdelkerim Saleh, Al Afifi Mahmoud, Ait Mahanna Hamza, Nachid Abdella, Dakir Mohamed, Debbagh Adil and Aboutaieb Rachid*

*CHU Ibn Rochd, Casablanca, Morocco*

## Abstract

The percentage of urogenital TB among extrapulmonary TB is 33.7% to 45.5%. According to the World Health Organization reports reviewed in March 2014, about one-third of the world's population has latent Tuberculosis (TB). Obstructive anuria is defined as a stop total diuresis or an amount less than 400 ml/24 h, secondary to an obstacle located at any level of the upper excretory canal. Neoplastic etiologies are the most common causes. In rare cases urogenital tuberculosis causes obstructive anuria by bilateral ureteral stenosis.

Mr. AM is 37 years old, with no particular pathological history. The patient has had bilateral low back pain for 5 years without hematuria. Admitted to the emergency room for bilateral low back pain with anuria. On examination, the blood pressure is 11/6 mmHg and the temperature is 37°C, anuric with diuresis below 200 cc/24 h, the urogenital examination finds bilateral lumbar sensitivity, absence of bladder globe Renal function is impaired: urea: 2.01 g L-1, creatinine: 77 mg L-1.

Ultrasound revealed a major ureterohydronephrosis on the right, laminating the cortex and moderate left with an empty bladder. The urinary tree without preparation does not show an image of radiopaque lithiasis. We performed a bilateral percutaneous nephrostomy after failure of double J stent and cytobacteriological examination of urine for *Mycobacterium tuberculosis* (Mtb) confirmed the diagnosis. Anti-bacillary treatment was started. The evolution was marked by an improvement in creatinine and urea levels after nephrostomy.

The main reasons for late diagnosis are a lack of alertness on UGTB among urologists, general practitioners and the nonspecific variable clinical features. Destructive forms of Kidney Tuberculosis (KTB) cannot be cured by chemotherapy, so surgery is necessary.

**Keywords: Anuria; Diagnosis; Tuberculosis; Urogenital; Management**

**OPEN ACCESS**

***Correspondence:***
*Abdi El Mostapha, CHU Ibn Rochd, 212 BD, Resistance Casablanca, Morocco,*
*E-mail: davecf05@hotmail.fr*

**Received Date**: *22 Jan 2021*
**Accepted Date:** *22 Feb 2021*
**Published Date:** *05 Mar 2021*

***Citation:***
*El Mostapha , Saleh NA, Mahmoud AA, Hamza AM, Abdella N, Mohamed D, et al. Rare Case of Obstructive Anuria Revealing Urinary Tuberculosis. Clin Surg. 2021; 6: 3093.*



## Introduction

According to the World Health Organization reports reviewed in March 2014, about one-third of the world's population has latent Tuberculosis (TB). Persons with compromised immune systems, such as people with Human Immunodeficiency Virus (HIV), diabetes mellitus, malnutrition, or people who use tobacco, have a much higher risk of becoming ill [1].

The percentage of urogenital TB among extrapulmonary TB is 33.7% to 45.5%. More than 50% of patients with male genital TB also have pulmonary [2,3].

Urogenital Tuberculosis (UGT) remains a major cause of serious condition, despite prevention by the vaccination and effective tuberculosis chemotherapy. The slow progression and multifocality of the lesions mean that the TUG is often discovered at the stage of recurrent cystitis, of hematuria, rarely at occasion of obstructive anuria.

We will present a rare case of obstructive anuria revealing urogenital tuberculosis and we will discuss the diagnostic approach, ethiopathogeny, and means of management.

## Observation

Mr. AM is 37 years old, with no particular pathological history. The patient has had bilateral low back pain for 5 years without hematuria. Admitted to the emergency room for bilateral low back pain with anuria. On examination, the blood pressure is 11/6 mmHg and the temperature is 37°C, anuric with diuresis below 200 cc/24 h, the urogenital examination finds bilateral lumbar

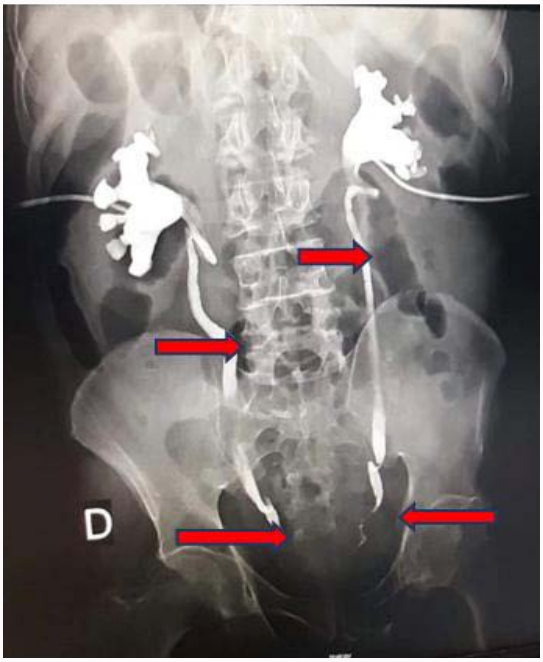


**Figure 1**: Multiple ureteral stenosis with absence of bladder opacification.

sensitivity, absence of bladder globe and rectal examination, the prostate is estimated at 30 g. Renal function is impaired: urea: 2.01 g L-1, creatinine: 77 mg L-1.

Ultrasound revealed a major ureterohydronephrosis on the right, laminating the cortex (cortical index: 6.4 mm) and moderate left (cortical index: 11.6 mm) with an empty bladder. The urinary tree without preparation does not show an image of radiopaque lithiasis. We performed a bilateral percutaneous nephrostomy (Figure 1) after failure of double J stent and cytobacteriological examination of urine for *Mycobacterium tuberculosis* (Mtb) confirmed the diagnosis. Anti-bacillary treatment was started. The evolution was marked by an improvement in creatinine and urea levels after nephrostomy.

## Discussion

Tuberculosis is still a serious challenge to the world public health, chiefly in developing countries [4]. More than 95% of patients diagnosed with Tuberculosis Both Pulmonary (PTB) live in developing countries.

It has been well described that the urogenital system is a common site of Tuberculosis Extrapulmonary (EPTB) in adults, but the true incidence of Urogenital Tuberculosis (UGTB) is less clear [5]. Urogenital Tuberculosis (UGTB) occurs in fourth place in terms of frequency, after lymph nodes, pleural and osteoarticular. In a review of 9,178 patients described in 39 case series, Urogenital Tuberculosis was seen to affect two males to each female, with a mean age of 40.7 years [3]. There is a big family of *Mycobacteria*, but not all members of this family are pathogenic for humans. *Mycobacterium tuberculosis* (Mtb) and *Mycobacterium bovis* (M bovis) are combined in the mycobacterial complex and are obligatory pathogens for the human organism. In 80% to 95% of cases, Urogenital TB is caused by Mtb, but M bovis is also an etiologic agent of TB [6]. From lung lesions, the bacilli can disseminate to the kidneys by hematogenous route, where they form multiple cortical foci, often bilateral [7]. Next, the infection spreads through the descending urinary tract, with extension to the medullary, papillae and chalices then to the excretory tract.

The nonspecific clinical features of UGTB make the early and accurate diagnosis of this disease difficult. As a whole, kidney TB patients complain of flank pain (80%), dysuria (54%), renal colic (24%) and gross hematuria (20%) may occur [8,9].

Kidney destruction might be due to progression of a focal lesion, with caseous granuloma formation, fibrosis, and renal cavitation. However, Obstructive anuria is defined as a stop total diuresis or an amount less than 400 ml /24 h, secondary to an obstacle located at any level of the upper excretory canal. It can be an obstacle bilateral or unilateral on single functional kidney or anatomic [10]. It is a medical-surgical emergency that requires early diagnosis and urgent management. Neoplastic etiologies are the most common causes [11]. In a rare cases urogenital tuberculosis causes obstructive anuria by bilateral ureteral stenosis [12]. Anatomo-functional alterations of the kidneys (hydronephrotic transformation, nonfunctioning kidney) in 28.5% of patients [13].

Our patient was admitted for bilateral low back pain with anuria, the urogenital examination finds bilateral lumbar sensitivity, absence of bladder globe and rectal examination, the prostate is estimated at 30 g. Renal function is impaired: Urea: 2.01 g L-1, creatinine: 77 mg L-1.

Leukocyturia is found in 90% to 100% of patients with kidney TB and hematuria in 50% to 60% [14]. Before the antibiotic era, sterile pyuria was a specific sign of kidney TB. The diagnosis of urogenital TB is confirmed when Mtb is detected, but in recent years, Mtb could be found in only half of TB patients. Therefore, in patients suspected of having urogenital TB, but without documented evidence, the diagnosis of urogenital TB has to be made on the basis of a skin test, caverns revealed by intravenous pyelography, sterile pyuria or histologic findings [14].

Ultrasonography allows to confirm the dilatation of the upper excretory tract and to guide the kidney puncture and the implementation of a nephrostomy with opacification of the urinary tree which has a double interest, therapeutic and diagnostic [15]. The uroscanner is a reference examination, but requires the injection of contrast material to visualize ureteral stenosis. The succession of narrowed and dilated segments gives the appearance classic "pearl necklace" [16,17]. Antibacillary treatment should be initiated as soon as the diagnosis of TUG is confirmed or at least if the biological and radiological assessments are highly suggestive. The treatment of this pathology consists in draining urine by ureteral catheter or double J-stent to allow the return of renal function. The urinary diversion must be performed urgently in order to avoid hyperkalemia and metabolic disorders. Kerr et al. [18] and O'flynn [19] performed a study on 108 ureteral stenoses were treated with 89 good results, whereas for Benchekroun, the results are not conclusive. However, if double J stent failure then nephrostomy is recommended. In our patient, we performed a bilateral percutaneous nephrostomy after failure of double J stent and anti-bacillary treatment was started after confirmation of the diagnosis.

## Conclusion

The main reasons for late diagnosis are a lack of alertness on UGTB among urologists, general practitioners and the nonspecific variable clinical features. Standard chemotherapy is effective only for early diagnosed form of UGTB. Destructive forms of Kidney

Tuberculosis (KTB) and Genital Tuberculosis (MGTB) cannot be cured by chemotherapy, so surgery is necessary.

## References


1. World Health Organization. Tuberculosis. 2020.
2. Harries AD, Dye C. Tuberculosis. Ann Trop Med Parasitol. 2006;100:415–31.
3. Figueiredo AA, Lucon AM. Urogenital tuberculosis: update and review of 8961 cases from the world literature. Rev Urol. 2008;10(3):207-17.
4. Gow JG. Genitourinary tuberculosis. In: Walsh PC, Retik AB, Vaughan ED, Wein AJ, editors. Campbell's Urology, 7th Ed. WB Saunders Company. Philadelphia. PA. 1998.
5. Zarrabi A, Heyns C. Clinical features of confirmed versus suspected urogenital tuberculosis in region with extremely high prevalence of pulmonary tuberculosis. Urology. 2009;74(1):41-5.
6. de Kantor IN, LoBue PA, Thoen CO. Human tuberculosis caused by Mycobacterium bovis in the United States, Latin America and the Caribbean. Int J Tuberc Lung Dis. 2010;14(11):1369-73.
7. Medlar EM. Cases of renal infection in pulmonary tuberculosis: Evidence of healed tuberculous lesions. Am J Pathol. 1926;2(5):401-414.15.
8. Lenk S, Schroeder J. Genitourinary tuberculosis. Curr Opin Urol. 2001;11(1):93-8.
9. Kulchavenya EV, Krasnov VA, Scornyakov SN, Mukambaev K, Zuban' ON, Kholtobin DP. Current tendencies of epidemic situation on extrathoracic tuberculosis. Tuberc I bolezn legk. 2013;12:34-8.
10. Mosbah AT, Ben Sorba N. Prise en charge précoce de l'anurie obstructive: Travaux du premier congrès Maghrébin. Février. 2005.
11. Ballager PH. Les anuries obstructives: Approche moderne. J Urol. 1989;95(1):53-4.
12. Ramanathan R, Kumar A, Kapoor R, Bhandari M. Relief of urinary tract obstruction in tuberculosis to improve renal function. Analysis of predictive factors. Br J Urol. 1998;81(2):199-205.
13. Batyrov F, Nersesian A, Merkur'evaIa A. [Urogenital tuberculosis: problems of present day diagnosis and treatment]. Urologiia. 2004;(5):16-24.
14. Kulchavenya E. Urogenital tuberculosis: Epidemiology, diagnosis, therapy. Heidelberg, Germany: Springer; 2014.
15. Bennani S, Hafiani M, Debbagh A, El Mrini M, Benjelloun S. Tuberculose uro-genitale: Aspects diagnostiques. J Urol. 1995;101(4):187-90.
16. En-Nouali H, El Fenni J, Mahi M, Chouir S, Amil T, Benameur M, et al. Tuberculose urogénitale: apport de l'imagerie, a propos de 50 observations. J Radiologie. 2008:15-35.
17. Lezar S, Adil A, Kadiri R. Tuberculose urogénitale: Place de l'imagerie. J Maroc Urol. 2006;1:3-6.
18. Kerr WK, Gale CL, Strthers NW, Peterson KS, Coulthard HS, Greatrex GE, et al. Prognosis in reconstructive surgery for urinary tuberculosis. Br J Urol. 1970;42(6):672-8.
19. Borthiwick WM. Present position of urinary tuberculosis. Br J Urol. 1970;42(6):642-6.