Medical Suspicion Overcomes Misleading Clinical and Laboratory Aspects of Genitourinary Tuberculosis

Florencia Neffa*, Analia Galvan, Sebastian Huelmo, Alvaro Despaux, Emmanuel Montana and Lucia Garcia

Department of Urology, Hospital de Clinicas, Montevideo, Uruguay

Abstract

Introduction: Tuberculosis is accountable for 2 billion people infected from Mycobacterium tuberculosis worldwide; ultimately 5 to 10% will get sick. Gold standard treatment is effective for the vast majority of the affected population. However, it remains an unresolved public health problem.

Case presentation: In this case report the authors portray the long journey of an immune competent, healthy, young patient towards genitourinary tuberculosis detection.

Conclusion: Tuberculosis is still to this day a concern of public health. Pulmonary as well as extra-pulmonary manifestations could develop in a misleading manner delaying best course of treatment. Specific and effective medication is available, which only evidences the fact that we are failing to diagnose properly and timely this deceiving disease.

Keywords: Genitourinary; Tuberculosis; Mycobacterium tuberculosis

Key Note Message

Fast and proper diagnosis of tuberculosis is of the essence to provide an optimal treatment and clinical care to the patient. Consideration of Genitourinary tuberculosis in patients from endemic regions who present with urinary symptoms, negative urine cultures, abnormal urinary tract imaging and in whom treatment for common urinary infections have failed, is clearly necessary. Even though medical therapy is currently available, delayed diagnosis could lead to chronic and/or fatal consequences.

Introduction

Tuberculosis (TB) is a major global cause of death, being a public health concern worldwide. Around one third of the world population is infected with Mycobacterium Tuberculosis (MBT), whereas these have a 5 to 15% lifetime risk of getting sick sick [1]. An alarming 95% is concentrated in developing countries [2]. According to 2012 ciphers, Asia concentrates up to 60% of all new cases per year [1]. Although specific standardized treatment is effective for most part of the affected population, it still remains an unresolved public health problem [3]. An estimated 1.3 million people died from TB in 2017. Out of the 10 million people who developed the illness 9% were HIV-positive. Immunological integrity status is key to successfully overcome the disease, being HIV carriers much more expose to disease and death [4]. Uruguay is denominated the Latin-American country with the lowest disease prevalence, detecting 2.76 deaths per 100,000 habitants in 2016 [5].

Extrapulmonary involvement can be expected in 10 to 42% of cases. The order of organ affection being: Pleural, lymph node, and renal TB (3 to 21%) [6]. Urogenital TB (UGTB) is a much more silent ailment, mostly overlooked compared to pulmonary TB, although being the second most common form of TB in countries with a severe epidemic situation and the third most common form in regions with a low incidence of TB.

The kidneys are primary targets due to hematogenous spread of the bacilli, mainly derived from prime pulmonary infection, with a 3 to 10-year dilatation, according to the host immune system integrity. Nonspecific clinical manifestations are the rule, often resulting in delayed diagnosis and ominous prognosis [7]. Sub diagnosis of UGTB arises many inconsistencies regarding different nomenclature, disease classification, therapeutic strategies and management.

The present publication describes a case of GUTB in a young, immuno-proficient man, with no personal or environmental history of TB, with severe renal function loss and urinary tract obstruction symptoms, portraying the importance of acknowledging the misleading nature of clinical manifestations and naive background.

Materials and Methods

The patient is a healthy 34-year-old male, with no personal or familial history of TB or HIV, nor previous contact with known TB individuals. He first presented at 31 years of age with symptomatic elevated blood pressure ciphers treated successfully with standard medication. Subsequent controls over a 3-year period of time showed a marked increase in creatinine levels. Recent episodes of persistent fever and dysuria in an acute renal failure context, triggered a full...
medical, urological and nephrological evaluation. Clinical examination was consistent with: Lumbar bilateral pain, enlarged prostate in rectal palpation and multiple urethral strictures. Computed tomography of chest-abdomen and pelvis without contrast was done. Figure 1 laboratory tests showed the following results: hemoglobin 8.4 mg/dL; white blood count 12,690 mg/mm3; creatinine 6.08 mg/dL (estimated glomerular filtration rate (GFR) = 18.16 mL/min based on Cockcroft-Gault formula); urea 133 mg/dL; the patient tested negative for hepatitis B, hepatitis C, Human Immune Deficiency Virus (HIV) infection and syphilis. Urinalysis showed the following results: pH 5.5, leukocyturia 50/high power field and hematuria 15/high power field. One hemo culture and three consecutive urine cultures were performed not yielding any positive findings. Urine and pulmonary bacilloscopy were negative for Mycoplasma TB (Figure 1).

Patient manifested rapid clinical deterioration with increasing creatinine and azotemia ciphers and infection parameters, combined with high fever, pyuria and right flank pain. An anesthetized exploratory urethro-cystoscopy was performed, observing an indurated urethra with diminished caliber, a poor capacity bladder with inflammatory aspect and a whitish substance covering almost all vesical surface. Sample biopsy from bladder wall and pyuric urine from left urether were taken for analytic purposes. Urine derivation was performed by placing a urethral and vesical catheter. The pathology report informed a granulomatous necrotic process of the bladder with a negative Ziehl Nielsen test result. The urine bacilloscopy was finally positive for Mycobacterium TB. A posterior urine culture using the Lowenstein-Jensen medium isolated M. tuberculosis.

Based on these results, the patient began a 6-month course of rifampin, isoniazid, pyrazinamide and ethambutol according to World Health Organization current guidelines. According to the classification of UGTB8 some of the complications already observed were: unilateral kidney loss, right polycavernous kidney, hydronefrosis, shrunken bladder, renal failure, urethral stricture and clinical prostate TB. Patient is now in a pre-hemodialysis list, with a GFR of 28 ml/seg despite adequate treatment.

Discussion

As stated by the World Health Organization (WHO) in 2014, over 30% of the worldwide population are infected by Mycobacterium tuberculosis, and these carry an accumulated risk of 10% of suffering from Tuberculosis throughout their lifetime [8]. This disease is the second most frequent cause of death due to a single infectious microorganism. Most of the focus is put into pulmonary TB, however, GUTB is a frequent manifestation of Mycobacterium tuberculosis infection and due to misleading symptoms causing late diagnosis, the prognosis is often compromised, in spite of having an adequate course of treatment.

Regarding GUTB, there are no specific clinical signs a practitioner could rely to diagnose it. When considering this pathology, it includes a wide spectrum of symptoms among different patients, but most importantly between the various forms and stages of the disease, making it impossible to apply a standard unified approach of diagnosis and treatment [8]. In patients from endemic areas who present with: urinary symptoms, negative urine cultures, abnormal urinary tract imaging and in whom treatment for common urinary infections have failed, a high degree of clinical suspicion is clearly necessary. Delayed diagnosis is detrimental, leading to chronic and fatal consequences [9].

Conclusion

Tuberculosis is an ancient disease which still remains in a latent form in a great part of the world’s development countries population, affecting the most vulnerable individuals, generating millions of deaths. Both pulmonary and extra-pulmonary manifestations could develop in a misleading manner, causing late diagnosis and delaying best course of treatment. Specific and effective medication is available, which only adds concern to the fact that we are failing in recognizing properly and timely this deceiving disease. We portrayed the story of one immune proficient, healthy, young patient through his 3-year journey towards GUTB detection.

References

1. WHO (2018) Tuberculosis. WHO, Geneva, Switzerland.
2. Kulchavenya E (2013) Best practice in the diagnosis and management of urogenital tuberculosis. Ther Adv Urol 5: 143-151.
3. Barry C, Konstantinos A; National Tuberculosis Advisory Committee (2009) Tuberculosis notifications in Australia, 2007. Commun Dis Intell Q Rep 33: 304-315.
4. World Health Organization (2014) Global Tuberculosis report 2014. World Health Organization, Geneva, Switzerland.
5. Pan American Health Organization (2016) Situation of tuberculosis in Uruguay. Pan American Health Organization, Uruguay.
6. Gibson MS, Puckett ML, Shelly ME (2004) Renal tuberculosis. Radiographics 24: 251-256.
7. Abbara A, Davidson RN (2011) Etiology and management of genitourinary tuberculosis. Ther Adv Urol 5: 143-151.
8. Kulchavenya E (2014) Urogenital tuberculosis: Definition and classification. Ther Adv Infect Dis 2: 117-122.
9. Zarrabi AD, Heyns CF (2009) Clinical Features of Confirmed Versus Suspected Urogenital Tuberculosis in Region With Extremely High Prevalence of Pulmonary Tuberculosis. Urology 74: 41-45.
Journal of Anesthesia & Clinical Care
Journal of Addiction & Addictive Disorders
Advances in Microbiology Research
Advances in Industrial Biotechnology
Journal of Agronomy & Agricultural Science
Journal of AIDS Clinical Research & STDs
Journal of Alcoholism, Drug Abuse & Substance Dependence
Journal of Allergy Disorders & Therapy
Journal of Alternative, Complementary & Integrative Medicine
Journal of Alzheimer’s & Neurodegenerative Diseases
Journal of Angiology & Vascular Surgery
Journal of Animal Research & Veterinary Science
Archives of Zoological Studies
Archives of Urology
Journal of Atmospheric & Earth-Sciences
Journal of Aquaculture & Fisheries
Journal of Biotech Research & Biochemistry
Journal of Brain & Neuroscience Research
Journal of Cancer Biology & Treatment
Journal of Cardiology: Study & Research
Journal of Cell Biology & Cell Metabolism
Journal of Clinical Dermatology & Therapy
Journal of Clinical Immunology & Immunotherapy
Journal of Clinical Studies & Medical Case Reports
Journal of Community Medicine & Public Health Care
Current Trends: Medical & Biological Engineering
Journal of Cytology & Tissue Biology
Journal of Dentistry: Oral Health & Cosmesis
Journal of Diabetes & Metabolic Disorders
Journal of Dairy Research & Technology
Journal of Emergency Medicine Trauma & Surgical Care
Journal of Environmental Science: Current Research
Journal of Food Science & Nutrition
Journal of Forensic, Legal & Investigative Sciences
Journal of Gastroenterology & Hepatology Research
Journal of Gerontology & Geriatric Medicine
Journal of Genetics & Genomic Sciences
Journal of Hematology, Blood Transfusion & Disorders
Journal of Human Endocrinology
Journal of Hospice & Palliative Medical Care
Journal of Internal Medicine & Primary Healthcare
Journal of Infectious & Non Infectious Diseases
Journal of Light & Laser: Current Trends
Journal of Modern Chemical Sciences
Journal of Medicine: Study & Research
Journal of Nanotechnology: Nanomedicine & Nanobiotechnology
Journal of Neonatology & Clinical Pediatrics
Journal of Nephrology & Renal Therapy
Journal of Non Invasive Vascular Investigation
Journal of Nuclear Medicine, Radiology & Radiation Therapy
Journal of Obesity & Weight Loss
Journal of Orthopedic Research & Physiotherapy
Journal of Otolaryngology, Head & Neck Surgery
Journal of Protein Research & Bioinformatics
Journal of Pathology Clinical & Medical Research
Journal of Pharmacology, Pharmaceutics & Pharmacovigilance
Journal of Physical Medicine, Rehabilitation & Disabilities
Journal of Plant Science: Current Research
Journal of Psychiatry, Depression & Anxiety
Journal of Pulmonary Medicine & Respiratory Research
Journal of Practical & Professional Nursing
Journal of Reproductive Medicine, Gynaecology & Obstetrics
Journal of Stem Cells Research, Development & Therapy
Journal of Surgery: Current Trends & Innovations
Journal of Toxicology: Current Research
Journal of Translational Science and Research
Trends in Anatomy & Physiology
Journal of Vaccines Research & Vaccination
Journal of Virology & Antivirals
Archives of Surgery and Surgical Education
Sports Medicine and Injury Care Journal
International Journal of Case Reports and Therapeutic Studies
Journal of Ecology Research and Conservation Biology