

Case Report

Prostatic melioidosis rarely reported in China: two cases report and literatures review

Guobin Tan, Jianchang Li, Lieqian Chen, Xiaojun Chen, Sai Zhang, LongzhiKe, Jianjun Liu

Urologic Surgery, Affiliated Hospital of Guangdong Medical College, Zhanjiang, 524001, China

Received August 16, 2015; Accepted November 7, 2015; Epub November 15, 2015; Published November 30, 2015

Abstract: Melioidosis is a fatal, endemic disease caused by *Burkholderiapseudomallei* which is a gram-negative bacillus. Melioidosis present diversely that ranging from chronic disease to fulminant sepsis, and may affect almost any organ in the body. And in China, melioidosis presenting primarily as prostatic abscesses has rarely been reported. Rapid and accurate diagnostics are needed for melioidosis as the clinical presentation is nonspecific and treatment requires specific antibiotics. Here, we report the clinic features of two cases of prostatic melioidosis that we had cured during 1995 to 2015 and discuss its diagnosis and specific treatment.

Keywords: Diagnosis, melioidosis, prostatic abscess, treatment

Introduction

Melioidosis is a fatal, endemic disease caused by *Burkholderiapseudomallei*. In China, melioidosis is commonly found in the following provinces, such as Hainan, Guangdong, Guangxi, Hong Kong and Taiwan [1]. However, melioidosis presenting primarily as prostatic abscesses has rarely been reported. In this article, we do search for prostatic melioidosis presenting abscess formation and the resultant urinary retention from January, 1995 to January, 2015 and review analysis its clinical features, diagnosis, differential diagnosis and treatment. We have found two cases and reported them as follows.

Case report

Case 1

A 63-year old man who was subjected to recurrent fever with frequent micturition and odynuria for more than one month was limited to internal medicine of the hospital in 1995. The clinical manifestation revealed that dysuria and nycturia (about 7 times every night), but no cough, expectoration and stethalgia. The patient said he became emaciated since the onset of disease. The routine test of blood show-

ed that WBC $15.9 \times 10^9/L$ (with 85% neutrophils, 15% lymphocytes), Cr 133 $\mu\text{mol/L}$, BUN 3.5 mmol/L and indexes of liver function were normal. And the routine test of urine showed that RBC 0~2/HP, WBC 0~2/HP. Furthermore, the results of antistreptolysin O test (ASO) and erythrocyte sedimentation rate (ESR) were normal. Series tests of antinuclear antibody (ANA), Widal's and Weil-Felix were also normal. In addition, the culture of blood, urine and marrow were negative. As the lower urinary tract symptoms (LUTS), consultation was held with urological doctors. Rectal examination showed obvious apophysis which was rough and tough in the left lobe of prostate. Computed tomography scan revealed prostate cancer, the lesion of which invaded spermatophore and fundus of the bladder. The result of transperineal prostate biopsy revealed chronic suppurative inflammation of prostate tissue. *Burkholderiapseudomallei* was identified in the culture of pus after three days while the drug sensitive test showed that it was sensitive to Ceftriaxone Sodium and Cefoperazone sodium. Antibacterial therapy was switched to sensitive drug subsequently. Not surprisingly, the patient's fever was gone and the LUTS improved. Clinical symptoms of the patient improved gradually at 6 months' follow-up.



Figure 1. The Transrectal ultrasound scan of the prostate showed that prostatic abscesses which were multiloculated.

Case 2

A 76-year-old man who had a 2-year history of stable LUTS was admitted to the hospital in December, 2014 because of aggravation of LUTS and recent appearance of scrotal swelling last month. He complained of LUTS that negatively impact quality of his life and additionally painful of scrotal swelling. Temperature was 36.7°C, pulse was 110 and respiration rate was 18. Blood pressure was 118/70 mmHg. Routine test of blood showed Leukocyte count is $10.6 \times 10^9/L$ (with 60.99% neutrophils, 13.46% monocytes and 24.19% lymphocytes) while the other indexes were normal. Urine analysis revealed 20-24 leukocytes and 15-18 erythrocytes per high-power field while the direct examination showed gram-negative rods. Physical examination revealed the left scrotal swelling, tenderness of testicle and epididymis that were swelling and firm. II degree of enlargement and suspicious nodules could be touched. The Transrectal ultrasound scan of the prostate showed that a prostatitis with abscesses which were multiloculated (**Figure 1**). The pus aspirated from the prostatic abscess was sent for culture and the result showed *Burkholderiapseudomallei*. We were not conscious of melioidosis presenting as prostatitis till the culture of urine and pus revealed gram-negative rods identified as *Burkholderiapseudomallei*, the isolated of which was sensitive to cef-

pime, ceftazidime, trimethoprim-sulfamethoxazole (TMP-SMZ), Imipenem and amoxicillin-clavulanate, and resistant to aminoglycoside. And then, the therapy was switched to intravenous ceftazidime and TMP-SMZ, while the empirical treatment was intravenous ciprofloxacin before. Due to less improvement of LUTS after antibacterial therapy, transurethral deroofing and resection of the prostate have been chosen primarily by us. The significant improvement of LUTS was received after the operation. And then the antibacterial therapy is switched to oral maintenance therapy

for 6 months. Furthermore, follow-up should be done well.

Discussion

Melioidosis is an infectious disease caused by gram-negative bacillus *Burkholderiapseudomallei* that has been recognized for more than 90 years since it was first reported in Rangoon [2]. With the advanced investigation of melioidosis, it is considered as endemic to Southeast Asia and northern Australia that approximately locate in the tropical latitudes between 20°N and 20°S.

Melioidosis present diversely that ranging from chronic disease to fulminant sepsis, and may affect almost any organ in the body. Diagnostic confusion with BPH and prostatitis may exist; especially prostatic melioidosis is so rarely reported and recognized during our clinical experience. Thorough physical examination is required because of the lower urinary tract symptoms. Rectal examination should be performed and may find marked pelvic tenderness and prostatic bogginess. Transrectal ultrasound is preferred than CT or magnetic resonance imaging unless the abscess has penetrated the confines of prostate gland. The traditional technologies of Gram stain and culture are the mainstay of diagnosis for melioidosis. With advanced development in investigation,

Prostatic melioidosis rarely reported in China

an immunofluorescent stain is sensitive to fresh specimen (particularly, sputum or urine), which can be obtained easily [3]. In addition, serology is generally used in endemic area, the clinical utility and specificity of which has been shown to be poor.

As the Transrectal ultrasound shown that melioidosis prostatic abscesses tend to be multiloculated, we have not attempted to do Transrectal aspiration. Especially, II degree of benign prostatic hyperplasia is detected by Transrectal examination and Transrectal ultrasound. Transurethral derroofing and resection of the prostate have been chosen primarily by us. In case of postoperative infection, we must focus on the following general measures which are in place: aggressive resuscitation, close monitoring and appropriate antibiotic therapy. Antibiotic agents should be used besides performing the operation of surgical drainage. Several clinical trials implicated that, in accordance with the accumulating evidence, the superiority of ceftazidime against the previous regimen of cotrimoxazole-doxycycline-chloramphenicol for intensive phase is intriguing and has been demonstrated a mortality benefit. Subsequently, TMP-SMZ is used as the maintenance therapy to reduce the relapse. And the total course of the treatment is recommended for 12-20 weeks and the patients should be follow-up and monitored carefully.

To our knowledge, prostatic melioidosis is an extremely rare disease in China; only one case [4] in Hong Kong, China had been reported in PubMed. Physicians should be aware of the disease and suspect it in patients who were rice farmer especially in China.

Acknowledgements

The manuscript entitled, "Prostatic melioidosis rarely reported in China: two cases report and literatures review" is funded by the key department foundation of affiliated hospital of Guangdong Medical College.

Disclosure of conflict of interest

None.

Address correspondence to: Dr. Jianjun Liu, Urologic Surgery, Affiliated Hospital of Guangdong Medical College, Zhanjiang, 524001, China. Tel: +86-759-2387079; E-mail: Zj-liujj@163.com

References

- [1] Xuhu M. Progress on melioidosis. *Journal of Third Military Medical University* 2011; 33: 1315-7.
- [2] Whitmore A, Krishnaswami C. An account of the discovery of a hitherto undescribed infective disease occurring among the population of Rangoon. *Indian Med Gaz* 1912; 47: 262-7.
- [3] Wuthiekanun V, Desakorn V, Wongsuvan G, Amornchai P, Cheng AC, Maharjan B, Limmathurotsakul D, Chierakul W, White NJ, Day NP, Peacock SJ. Rapid immunofluorescence microscopy for diagnosis of melioidosis. *Clin Diagn Lab Immunol* 2005; 12: 555-6.
- [4] Woo ML, Chan PS, French GL. A case of melioidosis presenting with prostatic abscess in Hong Kong. *J Urol* 1987; 137: 120-1.