

Primary tuberculosis of the penis in a renal transplant patient

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ABSTRACT

Background: Extrapulmonary tuberculosis is a complication of pulmonary tuberculosis that is disseminated through hematogenous or lymphatic system and may involve any organs. We present a case of primary tuberculosis of the penis that is a very rare presentation of tuberculosis.

Patient: The patient was a 43-year-old man who had kidney transplantation. He admitted with painful ulceration on the glans of penis. Physical examination strongly suggested ulcer lesion that resemble to carcinoma or herpetic ulcer. He did not have any evidence of pulmonary tuberculosis. Having received empiric treatment against herpetic, bacterial and fungal infection, his condition did not improve and he was ordered biopsy of the lesion. Histopathologic studies and PCR revealed Mycobacterium tuberculosis, thus, anti-TB drugs were commenced. The ulcer was improved without any recurrence during a two-year follow up.

Conclusion: In patients with kidney transplantation especially in countries endemic for Mycobacterium tuberculosis, chronic ulcer not responding to empiric therapy should be evaluated for Mycobacterium tuberculosis infection.

Keywords: *Chronic ulcer, Tuberculosis, Penis, Kidney transplantation.*

(Iranian Journal of Clinical Infectious Diseases 2007;2(2):95-98).

INTRODUCTION

Tuberculosis (TB) remains a common infectious disease worldwide and endemic in most of the developing countries and resurgent in both developed and developing countries with high rates of human immunodeficiency virus (HIV) infection. Mortality rates range from 50 to 80 percent in untreated patients. Extrapulmonary tuberculosis also was increased in recent decade and any organs may be involved. The diagnosis of extrapulmonary TB depends even more heavily upon a high index

of clinical suspicion than the diagnosis of pulmonary TB. The incidence of extrapulmonary TB is higher among HIV-infected individuals (1-4).

Recovery of *M. tuberculosis* from a specimen is still hallmark of confirming the diagnosis, but it is more frequently necessary to obtain tissue for the diagnosis of extrapulmonary TB. The diagnosis of tuberculosis was also confirmed by response to antituberculosis chemotherapy (5,6).

Ulcerative lesions of the penis have many possible etiologies, including infectious, neoplastic, traumatic, drug-induced, and autoimmune (7-10). Chronic ulcer on physical examination in glans of

Received: 10 April 2007 *Accepted:* 1 July 2007

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penis without response to antibiotics, is also a suspicious finding for tuberculosis. Tuberculosis of the penis has become a rare disease since anti-tuberculosis drugs have come to be widely used. It may be primary or secondary to coexisting tuberculosis elsewhere in the body. Although the most frequent neoplasm presenting as an ulcerative penile lesion is squamous cell carcinoma and it is not always easy to differentiate from tuberculosis of the penis (11).

Primary tuberculosis of the glans penis is extremely rare but may occur from coital contact with female genital disease. There was no coexisting tuberculosis infection elsewhere in the body. Genital tuberculosis may or may not be associated with renal involvement. Sterile urethral discharge in the absence of venereal contact should raise the suspicion of acute tuberculosis and the sexually transmitted diseases such as chancroid, lymphogranuloma venereum and granuloma inguinale should be considered for differential diagnosis. The mucocutaneous manifestations of these three diseases must be also distinguished from the lesions of other venereal diseases, such as primary syphilis and genital herpes simplex (12-14).

Penile ischemia may be due to rare complication of diabetic end-stage renal disease. Penile skin necrosis in a patient suffering from urinary incontinence caused by a secondary neurogenic bladder developed out of continuous pressure from the condom catheter (15).

Here, we present a case of primary tuberculosis of the penis that is a very rare presentation of tuberculosis.

CASE REPORT

A 43-year-old Iranian male patient who received renal transplantation three years ago due to end-stage renal failure, was complicating of insulin-dependent diabetes mellitus and presented with a penile ulcer since two months ago. He

receives conventional immunosuppressive treatments (cyclosporin, azathioprine and prednisolon).

This patient was admitted with low-grade fever (38.3°C) and painful ulceration on the glans of penis. Physical examination strongly suggested ulcerative lesion that resembled carcinoma or herpetic lesion other than infectious diseases. He has noticed a painless indurate and erythematic lesion with a central ulceration on the glans of penis. He had no known drug allergic. The patient denied any possibility of venereal disease and his female partner was asymptomatic. On examination, an indurate ulcer of 3.5 cm in diameter 1 cm in depth was noted adjacent to the penile corona. It was firm and tender, and had an irregular edge, shallow over a larger purpuric base and involving the distal portion of the shaft. Meanwhile, no inguinal adenopathy or buboes were found. Smear and culture for bacterial agents was negative. Syphilis, cytomegalovirus, HIV infections as well as other sexually transmitted disease (STD) were ruled out. Investigation for acid-fast bacilli in the urine was negative but tuberculin skin test was positive. Moreover, smears and culture of vaginal for mycobacterium tuberculosis and PPD skin test of his female were negative. Chest x-ray of patient was normal. Examination of the other parts showed no evidence of tuberculosis lesion in lungs or other organs. The empiric antibacterial, antiviral and antifungal regimens were applied, however, the lesion was not improved. The skin lesion of the glans was excised. Histopathological findings revealed typical tuberculosis with caseating epithelioid cell granuloma with Langhan's giant cells but acid-fast bacilli were not detected in the Ziehl-Neelsen preparation of the tissue. PCR was aided the diagnosis of primary penile tuberculosis. Diagnosis was made on histopathology, PCR and response to anti tuberculosis drugs.

Treatment was commenced with isoniazid (300mg/day), rifampicin (600mg/day), pyrazinamide (1.5g/day), and pyridoxine

(40mg/day) for 2 months, followed by isoniazid and rifampicin for a further 4 months. 6 months later, ulcer was improved without any recurrence after two years follow up.

DISCUSSION

Extrapulmonary tuberculosis is a complication of pulmonary tuberculosis that is disseminated through hematogenous or lymphatic system and may involve any organs. Immunosuppressed patients such as renal transplanted subjects are at increased risk of primary or secondary infection of tuberculosis. Thus, tuberculosis should be ruled out in high risk patients presenting with chronic ulcers (1,2,4).

Primary penile tuberculosis is an extremely rare condition, that should be distinguished from the lesions of other venereal diseases, such as primary syphilis, genital herpes simplex, granuloma inguinale and human immunodeficiency virus (HIV) infection (2).

Similarly to Vasanthi study, our case had primary tuberculosis of the glans penis without any infection elsewhere in the body and diagnosis was made by demonstration of caseating epithelioid cell granulomata with Langhan's giant cells detected on histopathology (5-6).

Tuberculosis of the penis has become a rare disease that it is not always easy to differentiate from carcinoma and biopsy should be carried out to differentiate these 2 entities since their therapeutic approaches are completely different (9-10). In our patient, smear and culture for tuberculosis were negative, thus, histopathologic examination should be considered for diagnosis of chronic ulcer in transplanted patients (12,13).

Our case had only one partner and his wife was asymptomatic, thus, the source of infection was not identified, however, we believe he should not have sexual activity until at least 1 month after therapy (2,10).

Since there is a paucity of organisms in most forms of extrapulmonary tuberculosis, results of both staining and culture are usually negative and non reliable for ruled out of tuberculosis. Therefore, PCR could be successfully applied for M.tuberculosis diagnosis (7,13).

In conclusion, the differential diagnosis of a chronic penile ulcer especially in patients with renal transplant was very important and Mycobacterium tuberculosis should be ruled out through histopathological evaluation before any aggressive treatment. PCR can be easily suggested if smear and culture were negative.

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