

Tuberculosis of the Penis: A Case Report

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1. Abstract

In literature, very few cases of tuberculosis of the penis have been reported. We hereby present a case report. A 42-year-old man admitted to hospital with a chief complaint of a small, ulcerative growth over glans penis. The lesion gradually enlarged, which was painless but caused pain during sexual intercourse. He was prescribed a course of antibiotics but the condition persisted despite treatment. The lesion developed further and other small, surrounding growths appeared. Examination revealed a firm nodule without discharge, about 1 cm in size on the back of the penis with a few surrounding small nodules at the tip of the penis and near the corona of the penis. The remainder of examination was unremarkable. Past history was normal and laboratory studies were in normal ranges. Biopsy and histopathological examination of the lesion confirmed tuberculosis. The patient was treated with 2RHZE/4RHE. After 6 months of treatment, the patient responded well and was able to participate in painless intercourse. Tuberculosis of the penis is a rare entity even in developing countries with high tuberculosis prevalence. Penile tuberculosis is a treatable disease and attention should be paid to differential diagnosis when a patient presents with a node or chronic penile ulcer, particularly in countries with a high prevalence of tuberculosis.

2. Introduction

Tuberculosis (TB) of the penis is an extremely rare disease. The disease presents as a lesion on the head or body of the penis and may resemble malignancy with the appearance of ulcers or nodules. We present below a rare case of penile tuberculosis that was successfully treated.

3. Case Report

A 42-year-old male patient was admitted to the hospital presenting with a small ulcer on the tip of the penis. The patient reported that 3 months ago, he discovered a small nodule on the penis. The nodule grew slowly without pain, without itch. The patient went to the hospital and was given antibiotics and anti-inflammatory drugs. The patient found that the lesions decreased, then increased, ulcerated and appeared alongside other small, non-watery blisters with a little white pus present at the tip of the penis, on the side and on the cavernous body next to the head of the penis. His urination was normal and without pain. Sometimes he felt pain during intercourse. These small nodes grew larger so the patient visited the doctor. Examination revealed a nodule about 1 cm in size on the back of the penis, next to the circumference of the penis (corona). It was firm, without discharge, and was surrounded by a few small nodules at the tip of the penis and next to the circumference of the penis. The urethral opening was normal, without purulent discharge and without erectile dysfunction. Inguinal lymph nodes were not detected.

Regarding past medical history: no disease was previously detected. His wife had no disease at all. Examination of the inguinal lymph nodes showed no abnormality. Routine blood tests were normal. The chest x-ray was normal. Elisa HIV test was negative. Abdominal ultrasound and examination of his testicles were normal. Urinalysis testing showed pH of 8 and SG of 1.01. White blood cells, nitric, red blood cells, protein, glucose all were negative, ASC was 20 mg/dl, ketones was negative, urobilinogen, and bilirubin were also negative. Acid Fast Bacilli presence in urine

was negative. MGIT Culture for M.tb in urine was negative. Biopsy of the lesion showed a tuberculosis lesion, without malignant cells (Figure 1).

The patient was treated with 2RHZE/4RHE regimen. After 6 months of treatment, the wound healed well (Figure 2 and 3). Intercourse became normal, with no pain as previously stated.



Figure 1: Lesion after biopsy

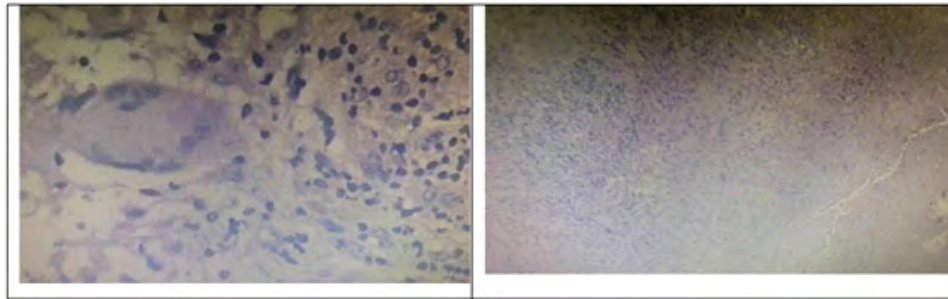


Figure 2: Pathology image- Langhans cells, caseous necrosis, granuloma



Figure 3: Lesion after 6- month TB treatment

3. Discussion

M.tb can affect all organs, but penile tuberculosis is rare. In 1848, Fournier described the first case of a patient with multiple ulcers on the penis and regional lymph nodes [1]. Until 1971, only 171 cases were reported in the literature [2]. From 1971 to 1992 there were 16 more cases reported in the literature [3]. Between 2000 and 2020 an additional 15 cases were reported [16]. Penile TB accounts for less than 1% of genital TB cases in men. The most common sites are epididymis (42%), seminal vesicles (23%), prostate (21%), testes (15%), and vas deferens (12%) [4]. Recently other mycobacteria, such as *M. avium intracellulare* [5] and *M. celatum* [6] have also been reported to cause penile lesions.

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Tuberculosis of the penis occurs in adults and can be secondary (blood-borne transmission of the infection from the lungs or extrapulmonary) or primary (locally spread) [7]. Primary TB occurs as a complication of circumcision when touching the tip of the penis can introduce TB bacteria [7]. Primary penile TB also occurs during sexual intercourse with a woman infected with TB in the genital tract or even from infected clothing or hands [8]. TB bacteria enters by vigorous rubbing because the normal mucosa is resistant to TB bacteria [2]. Occasionally, lesions in the penis can be caused by the discharge of semen from infected men because the vagina is particularly resistant to TB bacteria [9]. BCG vaccine causing primary penile tuberculosis following immunotherapy for

bladder carcinoma has also been reported [10].

Tuberculosis of the penis can affect the skin, head of the penis or the corpus cavernosum. In most cases, the lesion looks like a shallow sore on the tip of the penis or the glans (corona) as this is the part most often rubbed during intercourse or in contact with contaminated clothing or hands. Rarer than the lesion is a hard nodule. There can also a papulo-necrotic tuberculides rash. Tuberculous rash is a form of reaction that increases sensitivity to M.tb or bacteria products in people with a good immune system. These cases are characterized by a positive tuberculin test, evidence of previous or current TB, no TB bacteria in the skin lesions, and response to TB treatment [11]. In the case of advanced disease this can lead to cavernositis caused by tuberculosis leading to impotence.

Primary tuberculosis of the penis requires differential diagnosis from other dermatological diseases such as syphilis, herpes simplex, and HIV infection. For the definitive diagnosis of the disease and to differentiate it from penile carcinoma, histopathological examination is key. Differential diagnosis of a chronic penile ulcer with a fairly extensive granulomatous histology are bacterial, fungal, parasitic, vasculitis, sarcoid, and foreign substance reaction. Because only few bacteria are present in most forms of penile tuberculosis, results of smear and culture testings may be negative. PCR can detect DNA of TB bacteria cell in lesions and the technique is also used to demonstrate sexual transmission [3].

The main treatment is first-line TB drugs with a regime of 2RHZ/4RH or 2RHZE/4RH giving a fairly high success rate [3]. Some authors extended the treatment time to 7 months [12]. According to the Vietnam Anti-tuberculosis Program [13], there is no specific regime for penile TB, the regime for new TB is 2RHZE/4RHE therapy and the duration can be prolonged depending on the disease response. In cases of drug resistance, patients were treated with second-line drugs based on drug susceptibility testing (DST) [14].

Female sexual partners should be examined for genital tuberculosis. Transmission from one mucosal surface to another surface during intercourse is a hypothesis and because it has been described in animals [15], we recommend that patients refrain from intercourse until at least 1 month after treatment.

4. Conclusion

Tuberculosis of the penis is a rare disease and most doctors seldom see such cases. It is important to pay attention to tuberculosis of the penis as a treatable disease in the differential diagnosis of chronic nodular or ulcerative lesions of the penis, especially in countries with a high prevalence of TB and populations with increased immunodeficiency. Biopsy of the lesions and testing for TB bacteria by smear, culture and molecular biology from tissue samples are the main diagnostic methods. Medical treatment with anti-tuberculosis drugs is the mainstay.

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