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## Primary tuberculosis of the glans penis—a rare case report

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## ABSTRACT

A 36 year old man was diagnosed with tuberculosis of glans penis. The patient was positive to Mantoux test and Ziehl–Neelsen staining of the exuding pus from penile lesion. The anti-tubercular regimen of directly observed treatment short-course programme, for 3 d a week for 6 months was given to the patient. The tuberculoid growth was disappeared and the patient became normal, and in routine follow ups no ailment was noticed. This was as a case of primary tuberculosis at glans penis. It was discussed that an infection from tubercle bacilli of genitals in adults might arise as a primary focus or as a secondary one from some other foci.

### 1. Introduction

Tuberculosis, caused by tubercle bacilli (TB)—*Mycobacterium tuberculosis*, has become increasingly difficult to control because of the emergence of multidrug resistant (MDR) strains of the bacillus, mostly prevalent at least in the marginalized sections of poorer nations. Such mutants called as MDR, when the strain is at least resistant to antitubercular drugs isoniazid and rifampicin, and extensively drug resistant; the MDR strain exhibits additional resistance to quinolone and a second line injectable antibiotic (amikacin or capreomycin or kanamycin). Further, the extremely drug resistant strain would be resistant to all the drugs used today; and the extremely drug resistant strain or the totally drug resistant strain had been independently reported from Iran, Italy and India[1–4]. Further, the co-infection of TB and HIV in several patients is an inextricable situation, and the number of the co-infected patients is sharply increasing, both being

balanced parasites. Such patients live 2–5 years ordinarily and spread both diseases independently; nevertheless, the infectious TB strain might not be multiresistant in each co-infected patient. The staggering situation with TB is its insinuating nature and its multifocal occurrence in lungs, parotid and genitourinary system, *etc.* Anyway, TB can be wide spread in urban slums, at least in India. Pulmonary tuberculosis are more readily diagnosed because the report of a patient reveals morbidity in the upper respiratory tract. Alternately, when the bacilli spread to genitourinary system, patient-report is delayed due to dearth in education and outlook. We present here a case report of 36 years old male with TB of penis glans. Primary tuberculosis of penis glans, meatus or urethra is a rare condition, and is manifested secondary to other foci, when the disease appears at higher up in the urinary tract[5]. TB on glans may arise from the ritual circumcision[6]. The inherent difficulty exists in distinguishing a tubercular development from chancroidal growth by inspection because of similar morphologies; eventually, treatment is started often empirically against cancer. However, tubercular development has a history of slow extension, usually associated with tubercular lesions in other parts of the body, sometimes with an ulceration of gray semi-

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transparent miliary tubercles at the periphery, and microscopical examination of the scrapings of the lesion often shows TB[5]. The patient presented multiple nodules of varying size appeared on the ulcerated glans penis mimicking a malignant disease, *i.e.*, cancerous outgrowth.

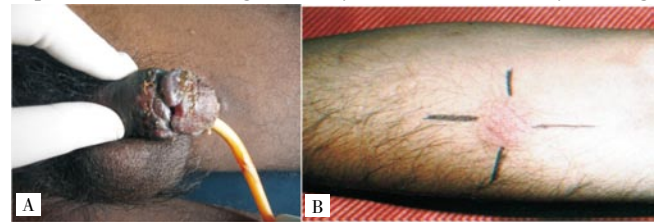
With 8 to 10 million new cases and 1.9 to 3 million deaths each year, tuberculosis is the leading infectious diseases in the world[3]. Particularly, with an annual report of 100 to 450 new cases per 0.1 million and 2 to 3 million deaths approximately are recorded per year; three quarters of reported cases are in the young–adult group, between 15 and 50 years of age in the third world[3]. However, in developed countries as low as 7–15 new cases per 0.1 million cases and 0.04 million deaths per year are recorded[7,8]. In developed world, immigrants and ethnic minors are chiefly affected[9,10]. Further, 25% to 50% people are co–infected with tuberculosis and HIV, worldwide[11]. Extrapulmonary tuberculosis cases occur negligibly, *i.e.*, 10% cases of tuberculosis incidences. In 30%–40% cases, urogenital tuberculosis of extrapulmonary tuberculosis cases is prevalent, while tuberculosis in lymph–nodes is most prevalent[7,11,12]. Urinogenital tuberculosis also occurs in 2%–20% of patients with pulmonary tuberculosis[13]. In developing world, urinogenital tuberculosis cases are in 15%–20% of pulmonary tuberculosis, while in the developed world, this infection occurred in 2%–10% of pulmonary cases[14].

## 2. Case report

A 36 years old married man was admitted with a history of ulcer swelling of the glans penis for the last 8 months. The initial ulcer at the dorsal aspect of glans penis was reported to enlarge gradually and multiple nodules of several sizes came out on the ulcerated glans penis, without any genitourinary problem. His wife did not have any genital lesions or discharge. The patient had received different antibiotic therapies in the last two years, without any coveted responses.

An ulcerated look, with foul smelling at the necrotic area on the dorsal side of the glans penis was evident. The edge of the tuberculoid growth was irregular and indurate (Figure 1A); the base was granular arid and there was serosanguinous discharge. Inguinal lymph nodes were palpable on both sides. The related innards, epididymis, seminal vesicles, testis and prostate were clinically normal, as known from ultrasonography. Furthermore, no tuberculoid growth was evident in these organelles. Haemoglobin at 10.6%, with total leukocyte count  $8700/\text{cm}^3$ , N at 54%, L at 38% E at 6%, M at 2% and B at 0% were found in a blood test, and erythrocyte sedimentation rate was 48 mm/h; sugar and urea nitrogen levels in blood were in normal ranges. Urine samples examined thrice, using Ziehl–Neelsen (ZN) staining was negative

for TB. The intravenous urography report gave no adversity for the prognosis. The HIV antibodies test and venereal disease research laboratory test yielded negative conclusion. A chest X–ray report was non–indicative of any of tuberculoid focus. Radiological and ultrasound reports of the urinogenital system were too unyielding.



**Figure 1.** A: Glans penis showing tuberculoid growth due to TB; B: Mantoux test positive.

A biopsy of an excised sample from the edge of the developed ulcerated mass showed an evidence of epithelioid cell granuloma, with the presence of Langerhans giant cells, which was an indication of tuberculous granuloma. Fine needle aspiration cytology of the lymph node was non–specific. ZN staining with pus exuding from the lesion yielded positive result. The result of Mantoux test read after 72 h showed an reactive zone (18 mm×15 mm in size) (Figure 1B). Subsequently, treatment was initiated, using the anti–tubercular treatment (category–III directly observed treatment short–course 3 d a week for 6 months, which was intended for sputum stain test negative extra–pulmonary tuberculosis), with isoniazid 600 mg, rifampicin 450 mg and pyrazinamide 1.5 g, for the first 2 months, followed by isoniazid 600 mg and rifampicin 450 mg, for the next 4 months, also with pyrazinamide. The lesions with ulcerated mass slowly disappeared by the therapy in the following two weeks and the total amelioration with presence of residual scars was cured at the end of the chemotherapy.

## 3. Discussion

Multiple–organ involvement with TB is hardly seen, primarily[8]. With the revised national TB control, directly observed treatment short–course programme have been instituted in many countries including India, as the drug–intake regime looms large to a patient, which stems from side effects, so that patients escape from the routine drug intake. Penile tuberculosis had been recorded earlier, and it is more prevalent in Japan[14,15]. Indeed, it affects skin, glans and cavernous bodies as superficial lesion[11,16]; a difficulty in differentiating it from malignant tumours is common[17]. In most cases, the form of an ulcerous growth is common with a nodule or papulo–necrotic tuberculides, mimicking malignancy. As in the present case, it often reported with tubercular lesion. An infection of TB of genitals in adults might arise as a primary focus or as a secondary one from some other foci, such as the pulmonary

tuberculosis. Moreover, tuberculides or its products are reactive to the Mantoux test in individuals, even in conditions of insufficient bacilli in a clinical sample in ZN staining indicating negativity, as exemplified earlier in pulmonary tuberculosis<sup>[4,18]</sup>. Such cases are characterized by the tuberculin test, as skin lesions including response to the anti-tubercular treatment are assessed at the end of a treatment regimen<sup>[19]</sup>. Tuberculosis of penis may affect the other sites of penis. In most cases, the lesion appears as a superficial ulcer on the glans or around the corona due to rubbing in the sexual act<sup>[20]</sup>. The lesion may be present as solid nodule(s), too<sup>[20]</sup>. Shape-shifting of the glans may be due the long-run of the tuberculoid infection, attended with erectile failure in advanced cases due to tuberculous cavernositis.

In conclusion, for the differentiation of tuberculosis from carcinoma of penis, histopathological examination was essential and intra venous uropathy excludes the presence of tuberculosis at upper renal tract. The indolent nature of the disease, with development of a nodule or papulo-necrotic tuberculides, often creates confusion for malignancy. This case was confirmed by tuberculosis tests for recovery by anti-tubercular chemotherapy.

### Conflict of interest statement

We declare that we have no conflict of interest.

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