Drug-resistant genital tuberculosis of the penis in a human immunodeficiency virus non-reactive individual

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Case Report

A 62-year-old male who had worked in a tuberculosis (TB) laboratory for the past 25 years in a small district in Uttar Pradesh, India, presented with multiple ulcerations on the glans penis for the last 2 years. He initially noticed a small painful raised lesion, which ulcerated and started to discharge pus, but he had no other local or systemic complaints. He was a widower and denied having had any sexual partner for 10 years. On examination, he had multiple superficial ulcers on the prepuce and glans penis. The edges of the ulcers were undermined, but the ulcers did not perforate deeply into the urethra (Fig. 1). The inguinal lymph nodes were not palpable. Systemic examination did not reveal any significant finding. His haemogram showed a raised erythrocyte sedimentation rate (42 mm in the first hour). Venereal disease research laboratory and human immunodeficiency virus serology were non-reactive. Chest X-ray and ultrasound of his abdomen were normal. Urine samples were normal on routine microscopy, and sterile on routine bacterial and mycobacterial cultures. Direct smear microscopy of the pus again showed a heavy load of acid-fast bacilli (3+), and cultures were positive for *M. tuberculosis* both on LJ medium and in BACTEC liquid medium. Routine bacterial culture was sterile. Drug sensitivity tests were performed with the BACTEC 460 TB system. These revealed resistance to the first line drugs rifampicin and isoniazid. The patient then received a full course of first line antitubercular treatment (ATT); however, the ulcers did not heal. A direct smear was again obtained from the ulcer after this first ATT course, and cultures for *Mycobacterium tuberculosis* were also set up on LJ medium and in vials of BACTEC 12B liquid medium. Direct microscopy of the pus again showed a heavy load of acid-fast bacilli (3+), and cultures were positive for *M. tuberculosis* both on LJ medium and in BACTEC liquid medium. Routine bacterial culture was sterile. Drug sensitivity tests were performed with the BACTEC 460 TB system. These revealed resistance to the first line drugs rifampicin and isoniazid. The patient was then treated with a second line antitubercular drug regimen according to the Revised National TB Control Programme protocol for multidrug-resistant TB. He responded favourably, and after 3 months the ulcers had started to heal.

Discussion

The genitourinary tract is the most common site for extrapulmonary tuberculosis (TB) (Lenk & Schroeder, 2001). However, penile TB is extremely rare comprising less than 1% of all genital TB cases in males. It most commonly presents either as a superficial ulcer on the glans or around the corona. Diagnosis of penile TB is often difficult because it can mimic numerous other diseases. The association of TB with AIDS, and the increasing incidence of multiple drug resistance has further compounded the problem. The case described herein involves a patient with multidrug-resistant smear-positive penile TB that was undiagnosed initially due to the lack of clinical suspicion of TB, and once diagnosed failed to respond to first line antitubercular drugs because of multiple drug resistance.

Abbreviations: ATT, antitubercular treatment; TB, tuberculosis.
penile TB from carcinoma of the penis. Intravenous urography should be carried out to exclude upper renal tract TB.

In our patient the penile ulcer was initially labelled as a ‘fixed drug eruption’ because the patient had a history of taking co-trimoxazole for an upper respiratory tract infection prior to the appearance of the ulcer. Later he was given various antibiotics empirically with the suspicion of a bacterial aetiology but there was no response. Then with the suspicion of TB, a direct smear for acid-fast bacilli was done, which confirmed the diagnosis of penile TB. We believe that this case represents primary penile TB as there was no evidence of primary infection elsewhere; chest X-ray and ultrasonography of the abdomen showed no abnormal findings and urine culture was sterile. Possible modes of penile TB infection are either sexual transmission (Angus et al., 2001) from a female sexual partner with genital TB, or direct inoculation of the mucosa through contaminated hands or clothes. Our patient was sexually inactive and had worked in a TB laboratory for the past 25 years, so there was a strong possibility of direct inoculation in the laboratory.

Although primary penile TB is extremely rare, a number of case reports of primary and secondary penile TB can be found in the literature (Sah et al., 1999; Ramesh & Vasanthi, 1989; Jeyakumar et al., 1988; Lal et al., 1971). However, to the best of our knowledge this is the first case of multidrug-resistant primary penile TB. This case emphasizes that the possibility of TB as the cause of a chronic ulcer on the penis should be kept in mind, especially in TB endemic countries like India, where one third of the population is infected. Moreover, if such ulcers fail to resolve upon treatment with first line drugs (ATT), the possibility of a resistant strain should be considered. A high level of clinical suspicion, familiarity with the various manifestations of TB and awareness of the possibility of multiple drug resistance can allow early diagnosis and the timely initiation of proper management in such cases.

References


