Tuberculosis of the Glans Penis Presenting as Glans Gangrene

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Tuberculosis of the glans penis is rare. The clinical features of tuberculosis of the glans penis include the appearance of a superficial ulcer of the glans. We recently experienced a case of tuberculosis of the glans penis presenting as an ulcer, which progressed to glans necrosis. A 46-year-old man presented at our institution with painful ulcerative penile lesions. Initial pathological findings of the ulcers showed non-granulomatous inflammatory changes. He was treated with antibiotics and anti-inflammatory drugs for 6 months, and during that time, his glans ulcers progressed to glans gangrene. A partial glansectomy showed multiple epithelioid granulomas with central caseous necrosis, which was compatible with the findings of tuberculosis. The patient received anti-tuberculosis chemotherapy. The current case is reported to alert physicians to consider the possibility of tuberculosis when evaluating unusual penile glans lesions.

Keywords: Glans penis; Tuberculosis; Ulcer; Gangrene

The prevalence of tuberculosis (TB) has declined worldwide with greater availability of effective anti-tuberculosis drugs and improved standards of living. However, according to a recent report, its incidence has increased worldwide due to the human immunodeficiency virus (HIV) epidemic, the emergence of resistant strains of Mycobacterium tuberculosis, and the ease of migration [1,2]. TB of the penis is rare in many countries and its clinical features have been reported variously as ulceration, scars, nodules, and even as a scab on the penis [3]. We report on a case of TB of the glans penis that appeared as a glans ulcer with non-granulomatous inflammatory changes according to the initial pathological findings, which then progressed to a glans necrosis.

CASE REPORT

A 46-year-old man presented at our institution with painful ulcerative penile lesions. His glans showed two adjacent 12×8 mm sized ulcers with peripheral dusky areas (Fig. 1). The penile shaft was soft on palpation. Physical examination of both inguinal regions showed no appreciable lymphadenopathy. He had no past medical history of pulmonary TB or extra-marital sexual contact. Laboratory examinations, including serum venereal disease research laboratory, HIV test, urine smear/culture for acid-fast bacillus (AFB), and urine polymerase chain reaction (PCR) for AFB were normal. The serum test was also otherwise unremarkable except for a mildly elevated erythrocyte sedimentation rate of 17 mm (0-10 mm) and positive hepatitis B surface antigens. Histological examination of the biopsy from the ulcer revealed non-granulomatous inflammatory changes. An abdominal computed tomography (CT) scan to rule out other diseases showed multiple enlarged lymph nodes along the para-aortic area. A chest CT also showed multiple nodules in both lungs.
His glans shows two painful adjacent 12×8 mm sized ulcers with peripheral dusky areas.

His glans lesions progressed to glans gangrene.

Chronic granulomatous inflammatory lesions in epithelial cells with central caseation necrosis (arrow; H&E stain, ×100). Multinucleated giant Langerhan’s cells (arrowhead; H&E stain, ×400).

DISCUSSION

Tuberculosis of the penis is rare. The unusual clinical presentation can lead to misdiagnoses, including syphilis, herpes simplex, chancroid, penile carcinoma, or erythroplasia of Queyrat [4]. TB of the penis may be primary or secondary. Primary cases can occur as a complication of ritual circumcision, during coital contact with the disease already present in the female genital tract, or even from infected clothing [5]. Penile lesions may sometimes be caused by inoculation of the bacilli through a man’s own infected ejaculate [6].

These are classified according to three types depending
on clinical features and histological depth: lichen scrofulo-
sorum, papulonecrotic tuberculid, and erythema induratum
[7]. Lichen scrofulosorum has superficial dermal granuloma,
which are composed of epithelioid cells with some
Langhans’ giant cells and a narrow margin of lymphoid
cells. Papulonecrotic tuberculid, which involves the upper
dermis extending to the epidermis, shows the eruption of
genotizing papules. Erythema induratum, which histologi-
cally involves subcutaneous tissue, shows persistent and
recurring nodular lesions, usually in the legs of women [5].

In 2014, Yanagihara [8] reported many cases of penis
ulcers of tuberculous origin in detail. He described the
anatomical and clinical features of penis tuberculosis as
follows: a nodule arising in the deep part of the glans
or around the urethra, which gradually reaches the surface
to become an ulcer. Histopathologically, in the current case,
the nodule was located in the subcutaneous lesion of glans
and had ulcerated at the skin level. Nonetheless, an initial
skin biopsy did not show granulomatous inflammation
compatible with TB. In addition, PCR for specific DNA
introduced for the detection of tubercle bacilli is known
as a clear and rapid diagnostic tool [9]. However, in this
case urine PCR for AFB showed negative results, delaying
the proper diagnosis and resulting in glans gangrene.

Many urologists are not familiar with TB of the glans
penis. In addition, its incidence has recently increased
worldwide, consequently resulting in a resurgence of skin
tuberculosis [1,2]. This phenomenon has been attributed
to the HIV epidemic, the emergence of resistant strains
of M. tuberculosis, the ease of migration, and a decline
in TB control efforts. Although penis tuberculosis is unusual,
especially when appearing as an ulcerative lesion, we should
be reminded of this important disease during the differential
diagnosis of an ulcer of unknown origin in the penis.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article
was reported.

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