

# Primary penile tuberculosis masquerading as penile cancer: a case report

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## Case presentation

A 53-year-old man from northwest Tamil Nadu, India presented to our institution in January 2021 with a 3-month history of new-onset phimosis with swelling of the glans and an ulcer and penile discharge. The lesion presented initially with seropurulent discharge from the preputial sac. The patient later noticed some induration over the dorsal aspect that progressed further to an ulcer with frank purulent discharge. He had no family history of tuberculosis (TB) and no venereal disease or significant past surgical intervention. He had type 2 diabetes mellitus controlled by regular medication. His spouse had no significant history of pelvic inflammatory disease or secondary infertility and no present complaint of vaginal discharge, lower abdominal pain or productive cough.

On examination, the patient was of average built and nourishment. Vital signs were stable and examination of the respiratory, cardiovascular and gastrointestinal systems was unremarkable. Local examination of the external genitalia revealed staining of garments, phimosis, and an ulcer of 1×1 cm in size over the dorsal aspect of the penis with foul smelling purulent discharge near the corona. The glans palpable through the prepuce was hard in consistency and non-tender. The penile shaft was indurated up to the base and non-tender. There was no significant inguinal lymphadenopathy. Testes, spermatic cord and scrotum were clinically normal.

Blood investigations revealed haemoglobin level of 13.1 g/dL, white blood cell count of 6900/mm<sup>3</sup>, neutrophil level of 60%, platelet count of 234000/μL, and glycated haemoglobin level of 7.8%; serology showed that human immunodeficiency virus, hepatitis B surface antigen and syphilis were non-reactive. Ultrasound of bilateral groin revealed a few inguinal nodes bilaterally, with the largest on the right measuring 8.7 mm. All nodes showed preserved fatty hilum and normal vascularity.

With the clinical diagnosis of localised carcinoma penis in mind, the patient was counselled about the need for intervention in the form of penile biopsy followed by total amputation of the

penis with perineal urethrostomy. Under spinal anaesthesia, a dorsal slit was made in the penis that revealed penile oedema with purulent discharge from the preputial edge, multiple small granulomas and a hard and purulent cover over the glans. The glans penis was partially necrosed but the meatus was preserved. On extension of the dorsal slit to the base, the shaft was found to be covered in pus and slough with a hard consistency of the corpora cavernosa. Penile biopsy was taken from the glans and shaft. The slit cut surface was approximated at the base and haemostatic sutures placed over the glans to let the wound drain. A 16-Fr catheter was passed. Postoperatively, the patient was started on 4.5-g piperacillin sodium and tazobactam sodium via intravenous route three times a day. His postoperative course was uneventful with the wound showing purulent discharge, managed with twice daily saline dressings. The possibility of infectious origin of the disease was discussed with the patient.

After discussion with the pathologist, a provisional report was obtained of granulomatous inflammation with a few areas of necrosis. The need for culture and sensitivity was discussed with the patient, but due to financial constraints the patient was unwilling to proceed. He was initiated on anti-tubercular therapy as per regional antimicrobial policy. The final histopathology confirmed necrotising and granulomatous inflammation, with no acid-fast bacilli noted.

The patient and his partner were screened for pulmonary and genitourinary TB after the final histopathology report. The patient was discharged on postoperative day 9 with instructions to continue ATT for 6 months. He was advised to attend a local clinic for dressing changes every week until the wound had healed. The wound showed signs of healing on follow-up (Fig 1). After 6 weeks there were signs of build-up of slough. At 8 weeks, after completion of the intensive phase, the patient was referred for local surgical debridement and wound closure due to build-up of slough over the wound surface. He completed the course of ATT and the wound healed well (Fig 2). He has since developed erectile dysfunction, probably owing to secondary



FIG 1. Postoperative image of the patient at 2 weeks following dorsal slit and biopsy showing sloughed tissue extending to the base of penis



FIG 2. Intraoperative image of the patient at 8 weeks showing healthy granulation tissue following mobilisation of skin flaps of the penis

fibrosis of the corpora cavernosa. He does not desire treatment at this time.

## Discussion

Genitourinary TB is the most common form of extrapulmonary TB, but penile presentation is one of the least common forms of genitourinary TB (<1%).<sup>1</sup> The epididymis (42%) followed by seminal vesicle (23%), prostate (21%), testis (15%) and vas deferens (12%) are common sites of presentation.<sup>2</sup> In its primary form, local spread of bacilli from clothing, ejaculation, endometrial secretions, circumcision, and intravesical *Bacillus Calmette–Guérin* has been reported.<sup>2</sup> The secondary form arises due to the subsequent complication of lung TB or TB in other parts of the urogenital tract, extending through the urethra or via a haematogenous route.

Tuberculosis of penis may affect the skin, glans penis or cavernous bodies. It can mimic penile carcinoma in presentation, much like our patient. Tuberculosis affecting the glans penis can present as tuberculous chancre, papulo-necrotic tuberculoid, TB cutis orificialis or tuberculous gumma. In most cases, the lesion takes the form of an ulcer that is difficult to differentiate from a malignant tumour. The lesion can be extensive, with involvement of the urethra and corpus cavernosum. Since young adults are affected, their partner should always be evaluated for genital TB.<sup>3</sup> Although there are several tests for diagnosis of TB, biopsy remains confirmatory. Surgical management may be required in doubtful cases in spite of successful treatment with ATT. Organ sparing surgery coupled with ATT should be the goal of treatment.<sup>4</sup>

Our experience highlights the similarities in presentation of penile carcinoma and primary penile TB, further cementing the need for a dorsal slit prior to definitive procedure. A high index of suspicion should be maintained considering the endemic status of TB in South-East Asian countries. Biopsy should always be performed in doubtful cases.

## Author contributions

Concept or design: A Sharma.

Acquisition of data: All authors.

Analysis or interpretation of data: All authors.

Drafting of the manuscript: A Sharma.

Critical revision of the manuscript for important intellectual content: All authors.

All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

## Conflicts of interest

All authors have disclosed no conflicts of interest.

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### Ethics approval

The patient was treated in accordance with the Declaration of Helsinki. Written informed consent was obtained from the patient for publishing of data relevant to the case report.

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