Journal of Paediatric Surgeons of Bangladesh (2020) Vol. 11 (1 & 2):52-56
Official Journal of the Association of Paediatric Surgeons of Bangladesh

Journal of Paediatric Surgeons of Bangladesh

Case Report

Tubercular ulcer on the dorsum of the penis in a toddler, a case report

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Abstract:

Primary tuberculosis of the penis is extremely rare. A 2-year, 2-month-old uncircumcised toddler presented with a non-healing ulcer on the dorsum of the root and body of the penis. The diagnosis of tuberculosis was confirmed by histopathology and excellent response to antitubercular chemotherapy. There was no co-existing tuberculous infection elsewhere but there was a history of recent contact with a pulmonary TB patient. The chance of acquiring the disease through direct contact of penile skin with infected sputum. Children are not immune to penile tuberculosis. The possibility of tuberculosis as a cause of chronic ulcer on the penis has to be kept in mind especially in endemic countries. The importance of histopathological examination in the diagnosis of chronic genital ulcer is emphasized.

Key words: Primary; Tubercular ulcer; Dorsum of the penis; Toddler; Histopathology.

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Published: March 2025

Introduction:

Primary tuberculosis (TB) of the penis is extremely rare.[1,2] Tuberculosis is common infectious disease in Bangladesh. Frequent primary site of this infection is lung and lymph node in this region.[3] Tuberculosis is still a major cause of morbidity in developing countries like India. Cutaneous tuberculosis is also not uncommon in these countries. Tuberculid presents as a cutaneous hypersensitivity response to an underlying focus of tuberculosis. Papulonecrotic tuberulid over the glans penis is a rare occurrence.[4] Cutaneous TB is essentially an invasion of the skin by Mycobacterium tuberculosis, the same bacteria that causes pulmonary TB. Cutaneous TB is a relatively uncommon form of extrapulmonary TB. Even in India, Bangladesh and countries like China where TB still common, cutaneous TB cases are rare 0.1 – 2.5%. Direct infection of the skin or mucus membranes from an outside source of mycobacteria results in an initial lesion called the tuberculous chancre. The chancres are firm shallow ulcers with a granular base. They appear about 2-4 weeks after mycobacteria enter through broken skin.[5] Penile glans may be affected through different mechanisms: primary, as an ulcerative lesion of glans; secondary, which is due to TB of other parts in urinary tract system-usually extended through urethra; and finally, hematogenous. Long ago, circumcision was a risk factor when mycobacterium could enter the wounded glans from affected circumcision operators.[6] Infantile ritual circumcision was in the past a frequent cause of glans ulcer in developed countries. At present primary tuberculosis of the penis is extremely rare in developed countries where infantile ritual circumcision is still practiced, but it is occasionally seen in underdeveloped areas[1]. At present, TB of glans in adults is usually a

primary or secondary form. Primary glans TB can be acquired by either intercourse with a patient suffering from genital TB, or contact with contaminated fabric. The secondary form is the subsequent complication of lung tuberculosis or other organs involvement.[6] We herewith report a case of tubercular ulcer on the dorsum of the root of the penis in a toddler which showed excellent response to short course anti-tubercular chemotherapy, which is also, to our best knowledge, the first case report of tubercular ulcer of the penis in children of Bangladesh.

Case report:

A 2-year, 2-month-old uncircumcised toddler admitted in our department with a painful ulcer over the dorsum of the root and body of the penis for the last 3 weeks. It had initially started as a small nodule which ruptured rapidly forming an ulcer and grew to its present size (Figure 1).

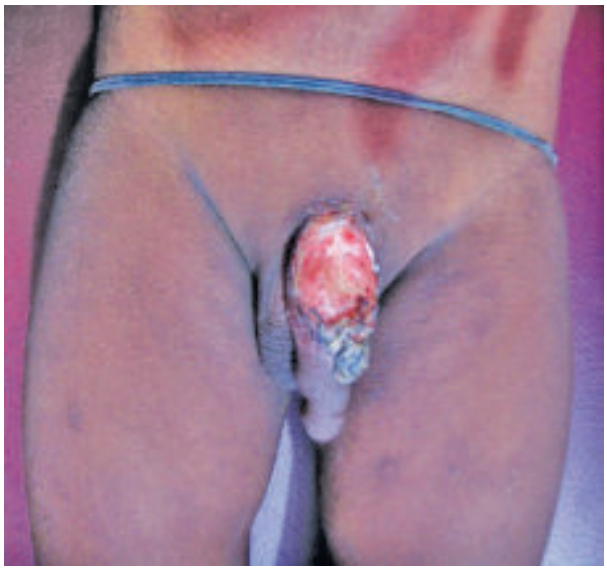

Figure 1: *Ulcer on the dorsum of the root and body of the penis at presentation.*

He came from a low socio-economic status. He had no history of trauma or any other systemic illness. Treatment with various topical and systemic antibiotics had been ineffective. During the whole period of illness he never had any history of fever, cough and hemoptysis, significant bowel and bladder complaints or any other systemic problems. His past medical history was noncontributory but on query mother gave a history of contact with a TB patient. On examination, patient was of average built. He was mildly anemic, had no clubbing and jaundice. BCG scar mark was present in his left upper arm. Local examination revealed a deep and irregular ulceration on the dorsum of the root and body of the penis with a transverse diameter of 3 cm and vertical diameter of 2 cm, having granular appearance, absence of dartos fascia, expose corpora caverosa with some sloughs on the floor and serous discharge. Some crust was present around the ulcer margin. The ulcer was tender, edge was undermined and base was indurated. The redundant preputial skin around the ulcer was edematous. There was bilateral, solitary, inguinal lymphadenopathy measured about 1 × 1 cm, overlying temperature was normal, non-tender, mobile in all directions, free from underlying and overlying structures. Systemic examinations' including respiratory system was normal. A provisional diagnosis of tubercular ulcer was made from the history and clinical examinations because the ulcer didn't heal rather aggravated after getting several antibiotics from different practitioners, a history of contact with a TB patient for about 3 months and high prevalence of TB in Bangladesh.

His hemoglobin was 10.8 gm/dl, ESR = 30 mm in 1st hour, Total count of WBC = 9800/mm^3, differential count of WBC (Neutrophils = 60%, Lymphocytes = 35%, Monocytes = 02%, Eosinophils = 03%), BT = 3 minutes and 10 seconds, CT = 4 minutes and 15 seconds. Chest X-ray P/A view revealed no abnormality (Figure 2). Liver function and renal function tests were within normal limit. Ultrasonography of the KUB region revealed no abnormality. VDRL was non-reactive. Tuberculin (Montoux) test after 72 hours of inoculation was strongly positive (18 mm). Wound swab for culture and sensitivity (aerobic incubation at 37^{0}c for 24 hours) revealed growth of staphylococcus aureus.

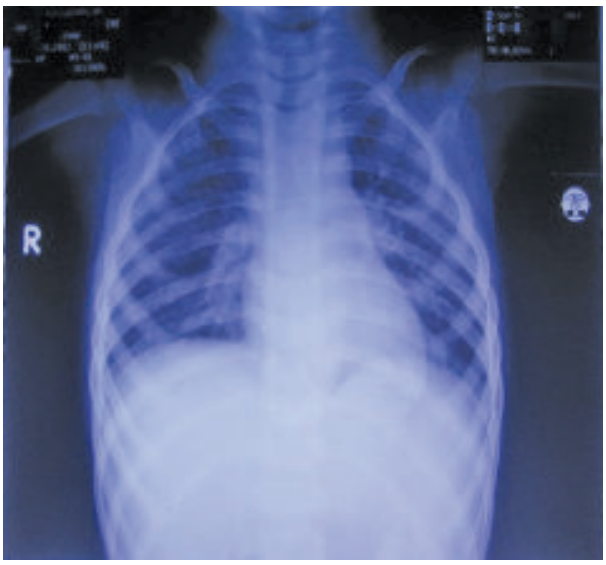

Figure 2: *Chest X-ray P/A view of the patient.*

Excisional biopsy of right inguinal lymph node showed multiple epitheloid granulomata with area of caseation necrosis, compatible with tuberculosis. Incisional biopsy from the ulcer margin at 9-O-clock and 12-O-clock position showed granulation tissue formation, area of hemorrhage and infiltration of acute and chronic inflammatory cells along with multiple epitheloid granulomata with area of necrosis, compatilble with tubercular ulcer wall. The patient was put on oral three drugs regime of Rifampicin (R), Isoniazid (I) and Pyrazinamide (Z) and was followed up monthly. He responded well to this treatment and the ulcer showed significant healing at 1-month of medical treatment (Figure 4). At the end of 2 months, the ulcer had completely disappeared with a very little residual scar on the dorsum of the penis and the left inguinal lymphadenopathy reduced to half of its initial size.

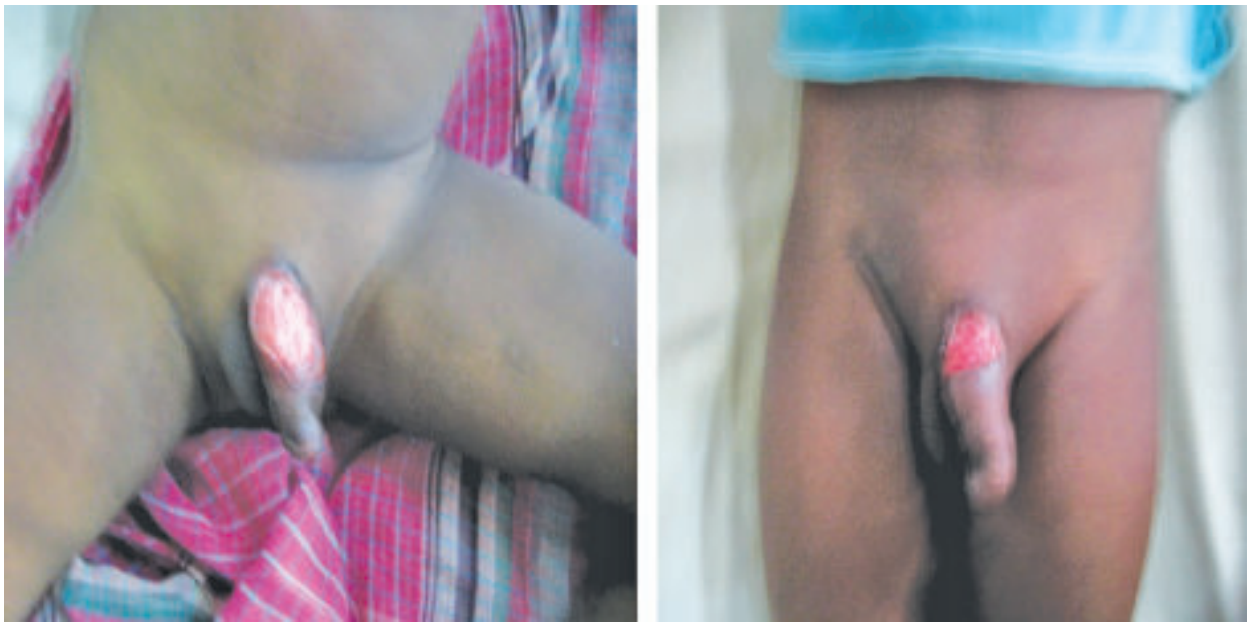

Figure 3: *Photographs showing tubercular ulcer on the dorsum of the penis before anti-tubercular chemotherapy.*

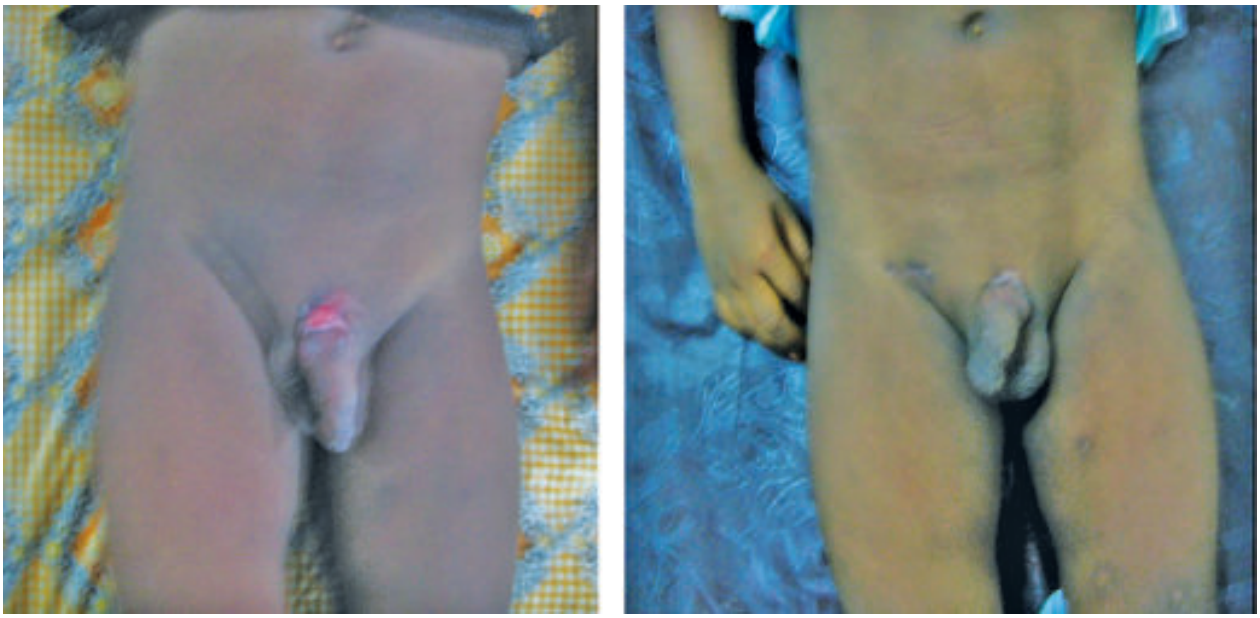

Figure 4: *Photographs showing various stages of healing of ulcer following treatment with anti-tubercular chemotherapy.*

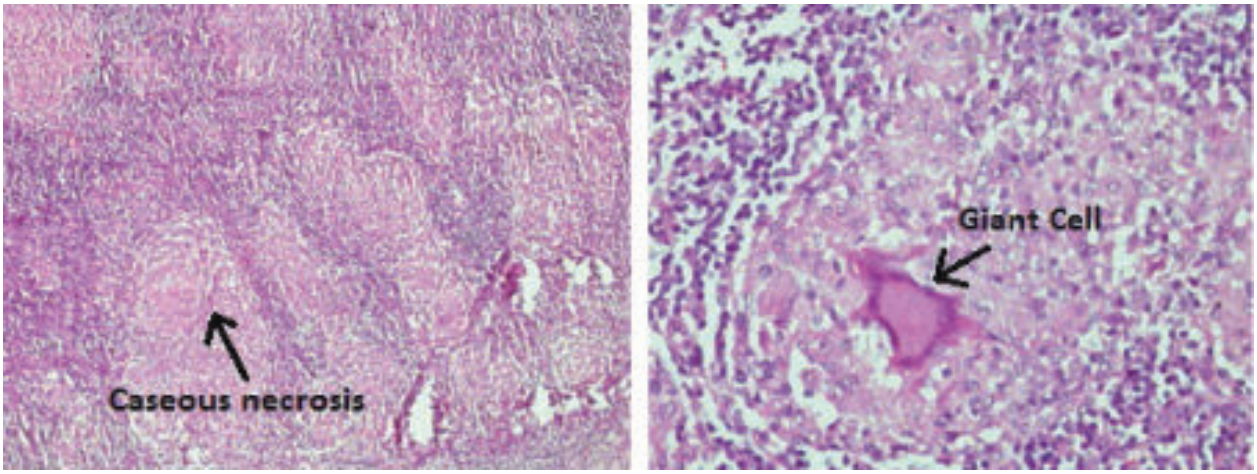

Figure 5: *Photomicrographs showing caseous necrosis and giant cell in inguinal lymph- node.*

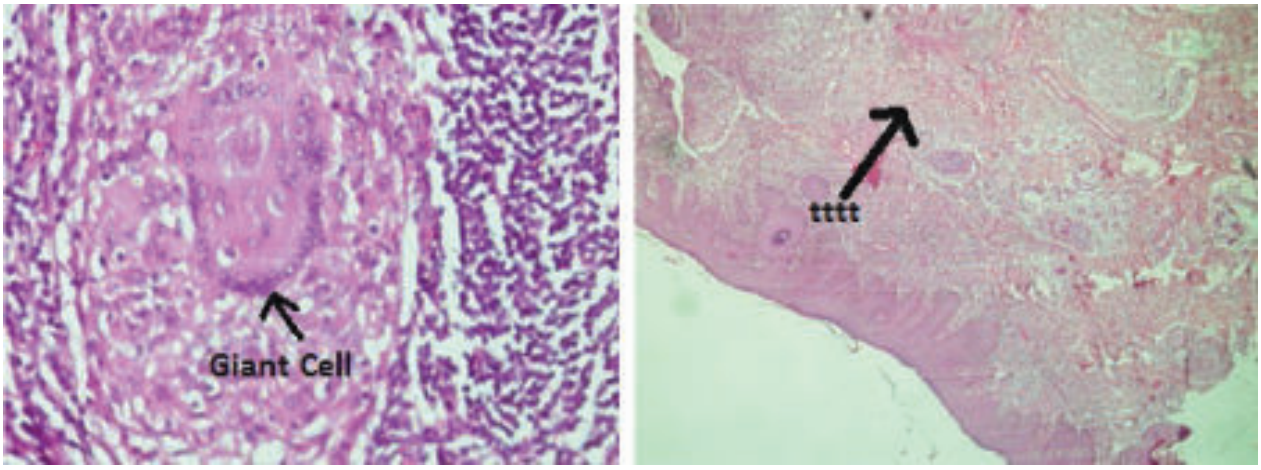

Figure 6: *Photomicrographs showing caseous necrosis and giant cell in biopsy specimen from penile ulcer margin.*

Discussion:

Penile tuberculosis is an extremely rare form of genitourinary tract tuberculosis even in developing countries where the prevalence of tuberculosis is high. Penile tuberculosis was first described by Hellerstrom and later by Bafverstedt and Hageman. In 1896, Darier put forward the concept of tuberculids whereby penile tuberculosis was explained as being the result of a cutaneous hypersensitive response to an underlying focus of tuberculosis. So far, three forms of penile tuberculosis have been identified. The primary form is caused by direct inoculation of mycobacterium in the glans penis during coitus with a patient of genital tuberculosis, oral intercourse with an active pulmonary Koch's patient, wearing of contaminated fabric or at the time of circumcision.[7] The primary cases occur as a complication of ritual circumcision during which the operator sucks the circumcised penis. Some of these have open pulmonary tuberculosis. Sucking was done as a haemostatic and styptic measure but after the turn of the century this act was practically eliminated from the ritual, with the result that tuberculosis of the penis is rarely seen now.[8] The secondary form, also called as tuberculid occurs as a result of either hematogenous spread from a primary focus (commonly lungs) or as a cutaneous hypersensitive response to an underlying focus. The third variety is the result of direct extension through urethra into penile shaft from neighboring genitourinary tubercular foci (prostate, seminal vesicle). An isolated case of penile tuberculosis has been reported as a complication of intravesical BCG therapy in superficial bladder carcinoma, probably due to traumatic catheterization. The causative agents are

Mycobacterium tuberculosis, Mycobacterium Bovis and Mycobacterium Celatum. The lesion presents commonly as a painful ulcer over glans penis. However it may present as a superficial ulcer over the inner lining of prepuce, as a subcutaneous nodule or cold abscess in the corpora cavernosa (Corpora cavernositis).[7]

Biopsy must be done to confirm the diagnosis, in which tuberculide granuloma with giant cells and caseous foci can be seen. To determine whether a TB of glans is a primary or a secondary disease, intravenous pyelography and chest x-ray must be taken.[6] For differentiation from carcinoma penis, histopathological examination is essential.[8] There have been reports of amputation of penis with mistaken diagnosis of carcinomatous ulcer. It is, therefore, suggested that the tubercular etiology should always be included in the differential diagnosis of penile ulcer.[2]

Diagnosis is possible by awareness of the condition, strong suspicion and relevant investigations. An underlying active or healed focus of tuberculosis should be thoroughly searched for.[4]

In this case the lesion was a primary type due to possible contact with a tubercular patient and started as a nodule on the dorsum of the root of the penis which turned rapidly into an ulcer which was progressive despite treatment with several antibiotics and penile bath. Histopathology, negative serologic findings, high ESR, strong tuberculin reaction and excellent response to anti-tubercular chemotherapy confirms the diagnosis of tubercular ulcer. So from this case report, two things must be kept in mind. One is the possibility of tuberculosis as a cause of chronic ulcer on the penis especially in countries where tuberculosis is highly prevalent, and the second one is, if the diagnosis is made earlier and effective chemotherapy is started accordingly, it can lead to complete healing of the lesion without leaving behind any sequlae.

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