CASE REPORT

Tuberculoid leprosy confined to glans penis in two cases

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Case 1

A 43 year old married uncircumcised Hindu male presented with an asymptomatic lesion on his glans penis of 4 months duration. He was quite upset, since his wife suspected an extramarital affair. Several steroid and antifungal ointments prescribed privately had not helped and the lesion was gradually increasing in size. There was no other skin lesion or systemic problem. His wife and two children were healthy.

Cutaneous examination revealed a circular, well defined, erythematous, slightly raised plaque about 20 mm in diameter located over the tip of the glans penis around the urethral meatus (Figure 1). It had mild atrophy and was hypoaesthetic. There was no nerve thickening or lymphadenopathy. He did not have any other skin lesion and systemic examination was normal. Histopathology from the lesion revealed a normal epidermis and upper dermal compact granulomatous infiltrate of lymphocytes, epithelioid cells and Langhans giant cells. The infiltrate touched the epidermis from below. There was no caseation and Ziehl–Neelsen stain of the section did not reveal any acid fast bacilli. Culture for Mycobacterium tuberculosis was negative.

Systemic examination and routine haematological tests were normal. ESR was 6 mm in the 1st hour (Westergren’s method), chest X-ray was clear and blood for VDRL was negative.

The patient was diagnosed as a case of tuberculoid leprosy and treated with dapsone 100 mg daily and rifampicin 600 mg once a month for 6 months, after which the lesion completely disappeared. No recurrence was seen during the 1-year follow-up.

Case 2

A 50-year-old married, uncircumcised Hindu male, attended our department for an asymptomatic, reddish skin lesion over his glans penis of 2 months duration. It had been slowly
increasing in size. He had developed another smaller, asymptomatic lesion near the bigger one about 1 month earlier (Figure 2). He did not have any other skin lesion elsewhere or systemic complaints. There was no family history of any skin problem.

Cutaneous examination revealed a well defined, circular, uniformly raised, erythematous, smooth surfaced, dry plaque about 25 mm in diameter over the dorsal aspect of glans penis. A similar smaller, elongated, shiny, erythematous plaque about 8 mm 2 mm in size was seen over the coronal sulcus between the 12 and 1 o’clock positions. Both the plaques were hypoesthetic. No skin atrophy or apple jelly nodules were seen on diascopy. He did not have

Figure 1. Well defined, tuberculoid leprosy plaque on glans penis.

Figure 2. Two raised plaques on the glans penis.
lymphadenopathy or any other skin lesions. Systemic examination was normal. Histopathology from the bigger skin lesion revealed multiple compact granulomas of lymphocytes, histiocytes and epithelioid cells in the upper dermis in close proximity to the epidermis and Langhans giant cells (Figure 3). There was no caseation. Ziehl–Neelsen stain of the section did not reveal any acid fast bacilli.

Routine investigations were within normal limits. ESR was 8 mm in the 1st hour (Westergren’s method). Chest X-ray was normal. Blood VDRL was negative and culture from the biopsy did not grow any mycobacteria. He was diagnosed as tuberculoid leprosy and treated with dapsone 100 mg daily and rifampicin 600 mg once a month for 6 months. The plaques completely disappeared without any recurrence during the 2-year follow-up.

**Discussion**

In lepromatous leprosy, a heavier dermal infiltrate is found in cooler areas of the body than in areas which are closer to the core body temperature indicating the predilection of *M. leprae* for cooler sites.¹ The distribution of leprosy lesions affecting mainly the skin, nasal mucosa and peripheral nerves, particularly the more superficial ones,² suggests that *M. leprae* prefers a growth temperature of less than 37°C. In Shepard’s studies, maximum growth of *M. leprae* was obtained in the temperature range of 27–30°C in the mouse foot pad.³ Warmer areas such as the hairy scalp, groin, axillae and perineum were earlier labelled ‘immune’ for leprosy patches,⁴ but their involvement has subsequently been demonstrated several times.⁵

The differential diagnoses of lupus vulgaris, sarcoidosis and secondary syphilis were considered here. However, the presence of hypoesthesia and the absence of apple jelly nodules, lymphadenopathy or naked epithelioid cell granulomas, failure to isolate *Mycobacteria* in culture and a negative VDRL pointed to a diagnosis of leprosy.

Genital lesions in leprosy have been reported infrequently⁶–¹⁴ and leprosy is quite uncommon on the penis.⁹,¹¹–¹⁴ Most reported cases have been multibacillary and had lesions
elsewhere also. Exclusive affection of the penile shaft in tuberculoid leprosy has been reported only once.\textsuperscript{12}

According to Bedi \textit{et al.},\textsuperscript{15} single lesions in tuberculoid leprosy are mostly seen on parts of the body which are not covered with clothing. In our cases, they were found in a region covered with two layers of clothing (including thick and tight undergarments). This area is warmer as compared to the exposed, uncovered body parts. In addition, the prepuce in the uncircumcised provides warmth to the enclosed glans penis. This secure site is usually less prone to trauma, apart from sexual activity. How and why the leprosy bacillus opted for such a supposedly secure site is indeed intriguing.

\section*{References}

\begin{enumerate}
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