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## REFERENCES

1. GANAPATI, R., BULCHAND, H. O., PAI, V. V., KINGSLEY, S. and REVANKAR, C. R. Relapsing multibacillary leprosy—a new dimension to transmission in urban areas. (Letter) *Int. J. Lepr.* **69** (2001) 114–115.
2. GANAPATI, R., REVANKAR, C. R., PAI, V. V., BULCHAND, H. O. and NANDA AJAYAN. Leprosy case detection through community volunteers—a low cost strategy. (Letter) *Int. J. Lepr.* **69** (2001) 37–39.
3. NAIK, S. S. and GANAPATI, R. Impact of MDT on leprosy prevalence as judged by surveys in the 'Megacity' of Mumbai. *Indian J. Lepr.* **71** (1999) 217–221.

## Nodular Penile Lesion in Hansen's Disease Mimicking Sexually Transmitted Disease

TO THE EDITOR:

Lepromatous leprosy is a disease with widespread involvement of integuments because of hematogenous dissemination of organisms. Some areas like the axilla, groin, perineum and a narrow transverse band of skin over the lumbosacral region have been described as "immune zones" because of their relative warmth<sup>(4)</sup>. There are some reports of involvement of genitalia in lepromatous leprosy<sup>(3, 8, 9)</sup>. In this communication, we are reporting a case of lepromatous leprosy with a nodular lesion over the prepuce of the penis, mimicking a sexually transmitted disease.

**Case report.** A twenty-seven-year-old, Hindu male, who is a truck driver by profession and has had a history of multiple extramarital contacts with multiple commercial sex workers, came to our sexually-transmitted disease clinic with a complaint of having a nodular lesion over the prepuce of his penis for the last two months. On examination a hard nodule over the prepuce was seen causing phimosis and, consequently, there was difficulty retracting the skin over the glans, giving the suspicion of a sexually-transmitted disease. Further examination revealed nodular lesions over his

trunk and face, ulcerative lesions over his scrotum and thighs, and glove and stocking anesthesia with bilaterally-thickened and tender ulnar and common peroneal nerves. Oral ulcers or lymphadenopathy were not present. The patient did not take much notice of these lesions, except for the penile lesion which caused difficulty in retracting the prepuce and, therefore, causing difficulty in his ability to have sexual intercourse. The bacterial index by slit-skin-smear was 4+ from his earlobe, eyebrows and one of the nodules on his back, and histopathology from the nodular lesion over his trunk was consistent with lepromatous leprosy. Serum VDRL in dilution and ELISA for HIV were performed and were negative. He was put on multidrug therapy—multibacillary (MDT–MB) for leprosy.

After 8 weeks of treatment with MDT, while the lesions over other sites started regressing, the penile lesion regressed less and was still causing much distress to the patient. At this stage a biopsy was taken from the lesion over the prepuce and it revealed multiple non-caseating, epithelioid granuloma with langhans giant cells and epidermal atrophy, suggestive of tuberculoid leprosy. Serum VDRL in dilution and ELISA for HIV were repeated and were



FIG. 1. Showing nodular lesions over prepuce with phimosis and necrotic lesions over scrotum and thigh.

again negative. After 6 months of treatment, there was considerable regression in the nodule over the prepuce though it still persisted, confirming that the penile lesion was of Hansen's disease.

#### DISCUSSION

*Mycobacterium leprae* possesses a distinct predilection for the cooler parts of the body<sup>(2)</sup>, and the perineum is considered to be an immune zone for the development of leprosy<sup>(4)</sup>, because of the relative warmth of the area. Contrary to this belief, Arora, *et al.*<sup>(3)</sup>, have reported a 2.9% incidence of genital lesions in mid-borderline (BB), borderline lepromatous (BL) and lepromatous (LL) patients. The lesions were nodular in

the LL cases with infiltrated plaques in the BL cases, and they were present over the scrotum in all cases, in addition to a few patients who had lesions over the shaft of penis also. Only one case had lesions over the prepuce of the penis. Maru, *et al.*<sup>(8)</sup>, have reported a BL patient who had a well-defined anesthetic, shiny plaque over his prepuce extending to the mucosal surface. Kaur, *et al.*<sup>(7)</sup>, found no skin area immune from invasion of *Mycobacterium leprae*. Sahni, *et al.*<sup>(10)</sup>, found clinical and histopathological evidence of leprosy in all such so-called immune zones. These reports give an impression that lesions on genitalia are not as uncommon as originally thought. On the other hand, the scrotum is a natural

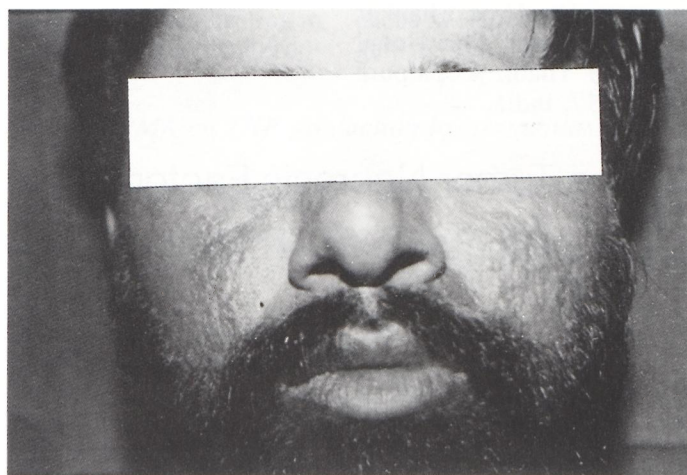


FIG. 2. Showing nodular lesions over face.

device to keep the testes cool and it may be cooler than the other areas of the body, which could explain the finding of leprosy lesions over the scrotum, while lesions over the shaft and prepuce are very rare. Under-reporting of these cases is either due to a hesitancy of the patients to expose, or due to the reluctance of physicians to examine the genitalia<sup>(8)</sup>. It is also possible that the temperature dependency of *Mycobacterium leprae* is not absolute, as evident by the facts that *M. leprae* do survive in warm sites such as bone marrow<sup>(11)</sup>, lymph nodes<sup>(6)</sup>, the liver<sup>(5)</sup> and palms and soles of the feet<sup>(1)</sup>.

In the modern era of HIV/AIDS, when patients, as well as physicians, are very concerned about lesions in the genital area, especially in high-risk patients, a wider range of suspicion should be kept in mind, including Hansen's disease, while examining these patients. In our case, the lesions were present over the scrotum, in addition to a lesion over the prepuce. The nodular lesion over the prepuce was quite large causing phimosis and was, consequently, confused with a sexually transmitted disease.

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## REFERENCES

1. AGRAWAL, UMA SHANKER, BHARGAVA, PUNEET, GULATI, RAM and MATHUR, NARENDER KUMAR. Palmoplantar nodular lesions in lepromatous leprosy. *Int. J. Lepr.* **65** (1997) 501–502.
2. ANISH, S. A. The relationship between surface temperature and dermal invasion in lepromatous leprosy. *Int. J. Lepr.* **39** (1971) 848–851.
3. ARORA, S. K., MUKHIJA, R. D., MOHAN, L. and GIRDHAR, M. A study of cutaneous lesions of leprosy on male genitalia. *Indian J. Lepr.* **61** (1989) 222–224.
4. COCHRANE, R. G. Signs and symptoms. In: *Leprosy in Theory and Practice*. 2nd ed. Cochrane, R. G. and Davey, T. F., eds. Bristol: John Wright & Sons, 1964, p. 266.
5. CONTRERAS, J., JR., TERCENIO DE LAS AGUAS, J. and CONTRERAS, F. Hepatic lesions in lepromatous patients. *Int. J. Lepr.* **37** (1969) 270–279.
6. DESIKAN, K. V. and JOB, C. K. A review of post mortum findings in 37 cases of leprosy. *Int. J. Lepr.* **36** (1968) 32–44.
7. KAUR, S. and KUMAR, B. Study of apparently uninvolved skin in leprosy as regards bacillary population at various sites. *Lepr. India* **50** (1978) 38–44.
8. MARU, S., MITTAL ASSIT, GUPTA LALIT, SHARMA MUKUL and BANSAL NIRMAL. Penile lesions in Hansen's disease. *Int. J. Lepr.* **64** (1996) 324–325.
9. PARIKH, D. A., PARIKH, A. C. and GANAPATI, R. Penile and scrotal lesions in leprosy? Case report. *Lepr. Rev.* **60** (1989) 303–305.
10. SAHNI, U., REDDY, B. S. N. and MALIK, R. Clinicopathological study of so called immune zones in leprosy. *Lepr. India* **54** (1982) 251–262.
11. SUSTER, S., CABELLO INCHAUSTI, B. and ROBINSON, M. J. Non granulomatous involvement of bone marrow in lepromatous leprosy. *Am. J. Clin. Pathol.* **92** (1990) 797–801.

## Detection of a Tumor Necrosis Factor-Like Activity in Culture Supernatants of Armadillo Leukocytes

TO THE EDITOR:

Tumor necrosis factor (TNF) is one of the main cytokines involved in the immune response. It was discovered by Old in 1985<sup>(10)</sup> as a factor with cytotoxic activity on tumor cells that is liberated in mouse serum in

response to lipopolysaccharide (LPS) injection. TNF is released by several cells of the immune system, such as activated T lymphocytes and mastocytes, NK cells, monocytes, macrophages and neutrophils<sup>(3)</sup>. Identification and characterization of this molecule is by means of enzymatic im-