

Bilateral Gynaecomastia in Hansen's in West Godavari District of Andhra Pradesh: A Case SeriesS. Dhanyasree¹, Gummalla Ajay Kumar², Raghuvver Tyagi³, Bala Vaishnavi Lingamaneni⁴¹Associate Professor, Department of Dermatology, Venereology and Leprosy (DVL), Government Medical College, Eluru, West Godavari, Andhra Pradesh, India.²Associate Professor, Department of Dermatology, Venereology and Leprosy (DVL), Government Medical College, Vizianagaram, Andhra Pradesh, India.³Assistant Professor, Department of Dermatology, Venereology and Leprosy (DVL), Government Medical College, Eluru, West Godavari, Andhra Pradesh, India.⁴Senior Resident, Department of Dermatology, Venereology and Leprosy (DVL), Government Medical College, Eluru, West Godavari, Andhra Pradesh, India.

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Abstract**Background:** Leprosy is one of the causes of gynaecomastia (enlargement of the breast) and gynaecothelia (enlargement of the nipples); however, little has been published about it, and it is usually an ignored sign.**Methods:** This was an observational study. Herein, we report three male patients with multibacillary leprosy.**Results:** Two patients had gynaecomastia and one patient had gynaecothelia not associated with gynaecomastia. None of these patients were aware of it until it was detected by the treating doctor during an examination.**Conclusion:** Through this study, we are highlighting the fact that gynaecomastia or gynaecothelia may not be a rare phenomenon if it is observed in all cases of leprosy and the possibility of leprosy should be considered in any male patient complaining of isolated hypertrophy of the breast or nipple.**Keywords :** Bilateral Gynaecomastia, Hansen's, West Godavari District, Andhra Pradesh.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

Mycobacterium leprae, a slow-growing obligate intracellular bacterial pathogen, is the source of leprosy, also referred to as Hansen's disease. Leprosy transmission occurs through close and prolonged contact between a susceptible individual and a bacillus-infected patient through droplet spread. The main route of transmission is the nasal mucosa. Less commonly, transmission can occur through skin erosions. Other transmission routes, such as blood, vertical transmission, breast milk, and insect bites, are also possible. It is highly contagious, but its morbidity is low because a large portion of the population is naturally resistant to this disease. Leprosy affects mainly the skin and peripheral nerves. Its diagnosis is established based on the skin and neurologic examination of the patient. A slit skin smear for AFB and histopathological examination of a tissue biopsy are done to confirm the diagnosis. Early diagnosis is very important. The timely and proper implementation of treatment will prevent sequelae and physical disabilities that have an impact on the

individual's social and working lives, which are also responsible for the stigma and prejudice regarding this disease. [1]

MB-MDT comprises rifampicin, clofazimine, and dapsone (diaminodiphenyl sulfone), which were used as the first-line treatment for Hansen's disease. Paucibacillary cases were treated for six months with rifampicin, dapsone, and clofazimine. Multibacillary cases were treated with rifampicin, dapsone, and clofazimine for 12 months. All patients received this drug combination monthly, under supervision. Minocycline, ofloxacin, and clarithromycin are among the drugs used as second-line treatments. The strengths of multidrug therapy include the prevention of resistance to dapsone, a rapid decline in the infectivity of infected individuals, and a low rate of recurrence and reactions. Nonetheless, the treatment period is long and presents logistical problems, which make adherence difficult to achieve. [2]

The multiplication and spread of *M. leprae* account for many of the clinical features, which vary from widely disseminated, symmetrically distributed macules to diffuse infiltration and nodular lesions. Gynaecomastia and/or gynaeocheilia (hypertrophy of the nipple) can also be features of leprosy. [3]

However, not much literature is available about gynaecomastia and gynaeocheilia in leprosy. Herein, we report two cases of leprosy with gynaecomastia and one case of gynaeocheilia to highlight the significance of this usually neglected sign in male leprosy patients.

Methods

This was an observational study. Herein, we report three male patients with multibacillary leprosy.

Results

The three case reports were clinico-bacteriologically and histopathologically lepromatous leprosy (LL) adult male leprosy patients. The salient features of the observed cases are shown in Table 1. All three patients were treated with standard World Health Organisation (WHO) multibacillary (MB) and multi drug therapy.



Case 1: Bilateral Gynaecomastia



Case 2: Bilateral Gynaeocheilia



Case 3: Bilateral Gynaecomastia

Table 1: Details of Salient Features of Observed Cases

Case	Age (yrs)	Erythematous Shiny Nodules	Leionine Faces	Diffuse Infiltrated Face	Madarosis	Infiltration Of Ears	Gynaeco-mastia	Gynaeco-thelia	Slit skin Smear Result	Deformities
1	22	Absent	Absent	Present	Present	Absent	Present	Absent	5+	Present
2	32	Present	Absent	Absent	Absent	Present	Absent	Present	4+	Absent
3	36	Absent	Present	Absent	Present	Present	Present	Absent	5+	Absent

Discussion

At present, in spite of the availability and implementation of an effective multidrug therapy (MDT) for more than 30 years and the attainment of elimination (<1 case/10,000 population size as defined by the World Health Organization [WHO] in 2002), India continues to have a high share of 58.8% of the world leprosy population. This might be due to the addition of new cases (who were incubating the disease) to the existing leprosy population. [4]

Truly, as a disease, leprosy involves not only the skin and nerves, but almost all organs of the body. Systemic involvement is more obvious in cases towards the lepromatous end than in those towards the tuberculoid pole. The factors that aid in the dissemination of the disease include: (i) bacteremia resulting in bacterial colonization of small blood vessel endothelium; (ii) filtration of bacilli in the reticulo-endothelial system; (iii) predilection of the bacilli for cooler sites; (iv) advanced lepromatous infections with heavy or prolonged bacteremia, which induces lesions even at less favoured sites like the adrenals, bones and skeletal muscle and (v) immune complex deposition. Some or all of the above factors contribute to making leprosy a systemic disease. Though leprosy mainly affects the skin and the nervous system, involvement of other systems does occur. The systemic involvement in leprosy is significant because it provides a source for the persistence of *M. leprae* which may be responsible for relapse even after adequate therapy. [5]

The involvement of the endocrine system in leprosy is usually insidious, silent, and under-reported, especially the testicular dysfunction. The most common clinical manifestation of testicular dysfunction is reduced or lost libido, followed by gynecomastia. [6]

Gynecomastia is defined as the benign proliferation of male breast glandular tissue. [7] It is one of the less frequent complications of leprosy. In a study, it was found that only 11.8% of patients with lepromatous leprosy developed gynecomastia. The hypertrophied male breast in leprosy consists largely of fibrous connective tissue. Adipose tissue forms only a small part of it. [8] Gynaecotheia is defined as hypertrophy of the nipple that may or may not be associated with gynecomastia. Hormonal imbalance and relative estrogen excess are thought to be the causes of gynecomastia. [9]

Some of the other common causes of gynecomastia are idiopathic, including cirrhosis of the liver, renal failure, testicular disorders, hypogonadism, drugs, etc. [10] Prominence of the nipples (gynaecotheia)

alone can be seen in other infiltrative conditions like post Kala-Azar dermal leishmaniasis, sarcoidosis, malignant infiltrations, etc. [11]

Conclusion

Through this article we are highlighting that gynecomastia or gynaecotheia may not be a rare phenomenon, if it is observed in all cases of leprosy and the possibility of leprosy should be considered in any male patient complaining of isolated hypertrophy of the breast or nipple.

References

1. Lastória JC, Abreu MA. Leprosy: review of the epidemiological, clinical, and etiopathogenic aspects - part I. *An Bras Dermatol* 2014;89(2):205-18.
2. Chen KH, Lin CY, Su SB, Chen KT. Leprosy: a review of epidemiology, clinical diagnosis, and management. *J Trop Med* 2022; 2022:865 2062.
3. Kumar B, Dogra S. Case definition and clinical types. In: Kar HK, Kumar B, eds. *IAL text book of leprosy*. 1st edn. New Delhi: Jaypee Brother Medical Publications 2010: p. 161.
4. Sengupta U. Elimination of leprosy in India: an analysis. *Indian J Dermatol Venereol Leprol* 2018;84(4):131-6.
5. Panda JK, Nayak M, Rout AN, Jena S. Systemic manifestation of leprosy: a comprehensive epidemiological study from eastern India. *J Med Sci Clin Res* 2017;5(5): 26-34.
6. Mohta A, Agrawal A, Sharma P, Singh A, Garg S, Kushwaha RK, et al. Endocrinological testicular dysfunction in patients with lepromatous leprosy and the impact of disease on patient's quality of life. *Indian Dermatol Online J* 2020;11(6):959-64.
7. Johnson RE, Murad MH. Gynecomastia: pathophysiology, evaluation, and management. *Mayo Clin Proc* 2009;84(11):1010-5.
8. Job CK, Karat AB, Karat S. Gynaecomastia in leprosy. *Lepr Rev* 1967;38(1):45-8.
9. Job CK. Pathology of leprosy. In: Hastings RC, ed. *Leprosy*. 2nd edn. London: Churchill Livingstone 1994: p. 217.
10. Mathes SJ, Seyfer AE, Miranda EP. Congenital abnormalities of the chest wall. In: Mathes SJ, ed. *Plastic surgery*. 2nd edn. Philadelphia: Saunders Elsevier 2006: p. 527.
11. Jaiswal AK, Subbarao NT. Gynaecotheia – a common yet ignored sign of multibacillary leprosy in males: a case series with review of literature. *Leprosy Review* 2012;83(4):384-8.