



# “The multifaceted resurgence of leprosy in India”: A descriptive study with clinico-pathological correlation

C. Divyalakshmi<sup>1</sup>, Aditi Dhanta<sup>1</sup>, Naveen Kumar Kansal<sup>1</sup>, Riti Bhatia<sup>1</sup>, Neirita Hazarika<sup>1</sup>, Prashant Joshi<sup>2</sup>

1. Department of Dermatology and Venereology

2. Department of Pathology

All India Institute of Medical Sciences, Rishikesh

## INTRODUCTION

Leprosy is a chronic infectious disease caused by Mycobacterium leprae. It is characterized by wide spectrum of clinical and pathological manifestations.<sup>[1]</sup> India declared the elimination of leprosy in 2005, however a slow resurgence of the disease may be going unnoticed.<sup>[2]</sup> Clinical diagnosis in some cases can be difficult which can lead to occurrence of resistant cases if treated inadequately. Skin biopsies play an important role in diagnosing and classifying different types of leprosy.<sup>[3]</sup>

## AIM AND OBJECTIVES

To analyse the newly diagnosed cases of leprosy, with specific focus on the newer forms of its presentation and to perform the clinico-pathological correlation.

## MATERIALS AND METHODS

A descriptive, hospital-based study that analysed clinical, slit skin smear and histopathology data of newly diagnosed cases of leprosy from June 2018 to July 2019.

## RESULTS

A total of 116 patients were included of which 79 (68.1%) were males and 37 (31.9%) were females. The predominant clinical spectrum was borderline lepromatous leprosy (BL) 37.9% (44/116) followed by lepromatous leprosy (LL) 32.8% (38/116). Different atypical presentations were seen in 8.6% (10/116) of patients. The most common histological subtype was lepromatous leprosy 33.6% (39/116) followed by borderline leprosy in 31% (36/116). One histoid and pure neuritic leprosy case each were observed. Clinico-pathological correlation was obtained in 85.3% (99/116) of patients.

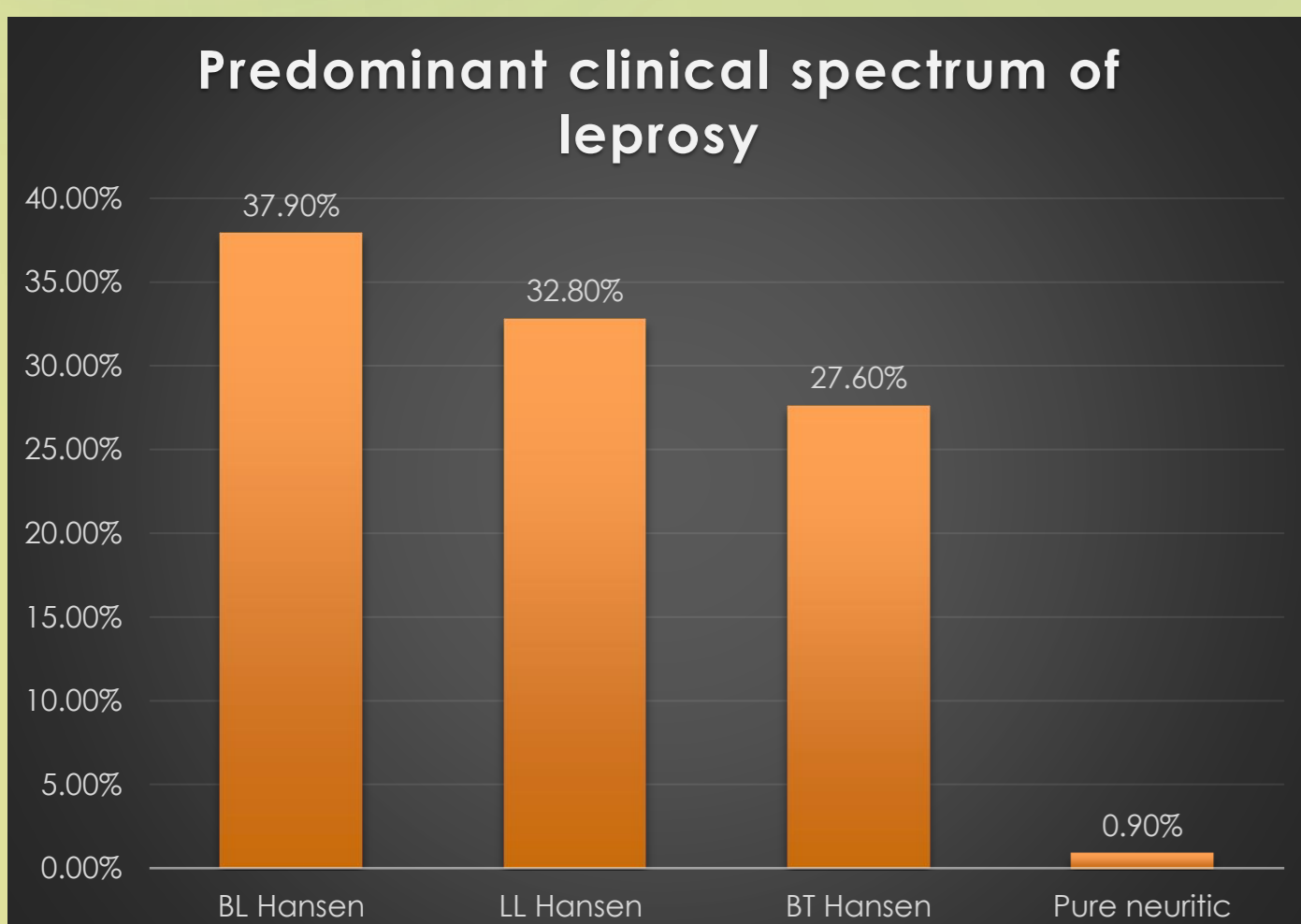


Figure.1. Graph depicting predominant clinical spectrum of leprosy

Type of leprosy	Clinical diagnosis	Histopathological diagnosis										Correlation (%)
		TT	BT	BB	BL	LL	Histoid	Pure neuritic	Others	Type I reaction	ENL	
TT												
BT	32		28		1	1					2	87.5
BL	44		6		32	3					3	72.7
LL	37				3	34						91.9
Histoid	1						1					100
Pure neuritic leprosy	1							1				100
Type I reaction	13									10	2	15.4
ENL	20										2	90
Others	1					1						

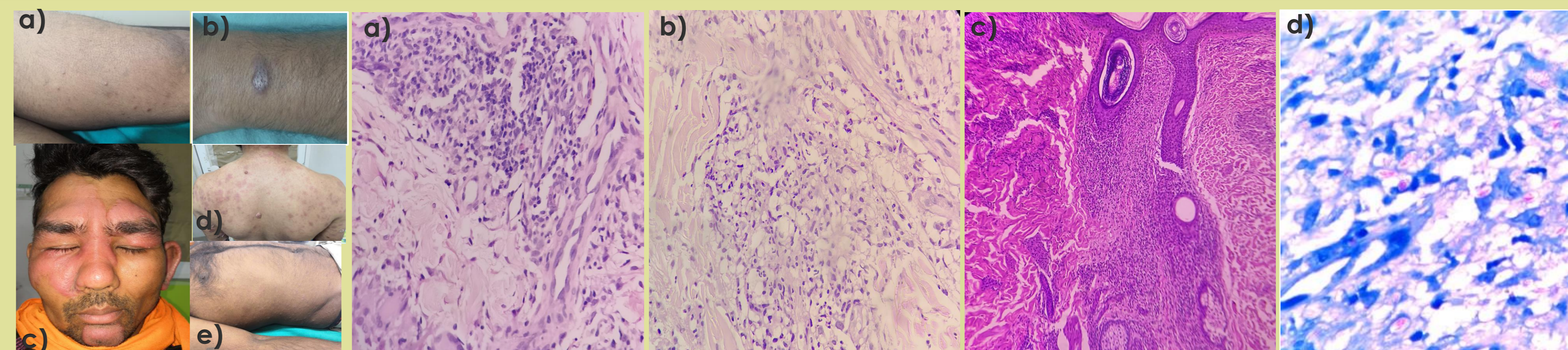


Figure.1. Clinical images of various spectrum of leprosy, a) LL case with only few skin colored shiny papules on thighs. b) a solitary erythematous plaque on left forearm in a LL (atypical picture). c) BT leprosy with type I reaction as erythematous edematous plaque on face. d) erythematous nodules of LL Hansen's disease. e) infiltrated papules of BL leprosy.

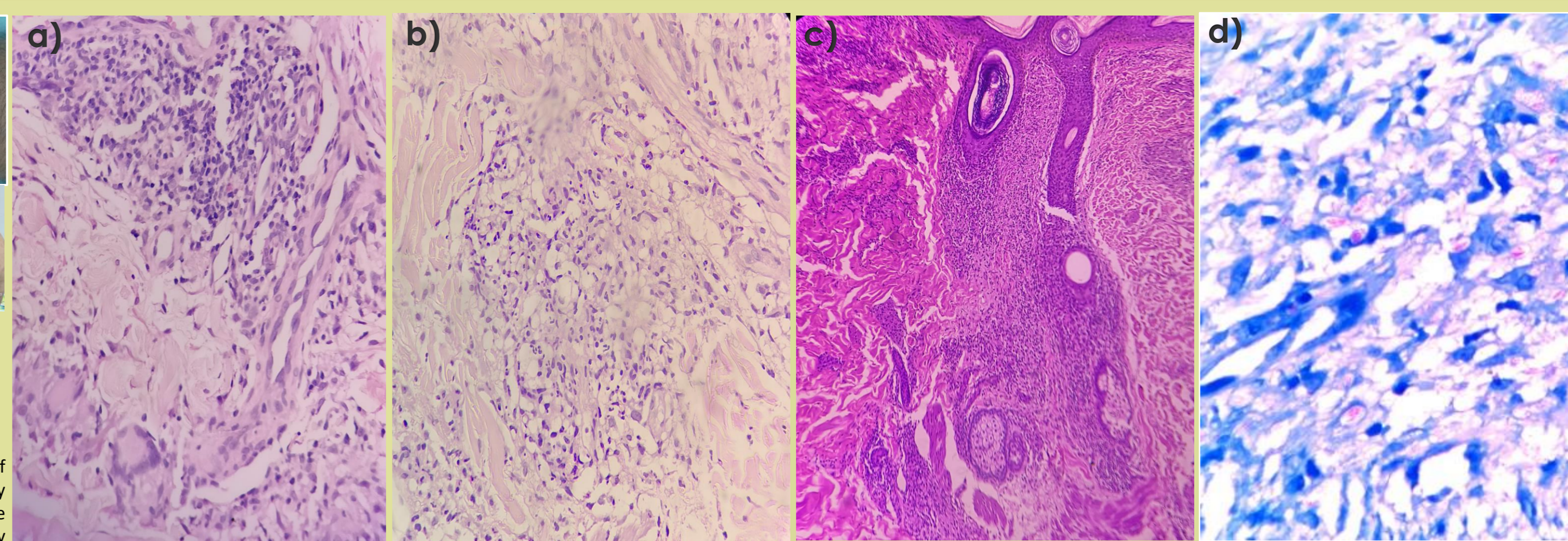


Figure 3. Photomicrograph showing a) BT leprosy with perivascular epithelioid cell granuloma and giant cells (H & E 40x). b) Lepromatous leprosy with periadnexal foamy cells and epithelioid cell granuloma. c) BL leprosy with perifollicular lymphocytic and epithelioid cell granuloma (H & E 10x). d) AFB stain in a case of pure neuritic leprosy.

## DISCUSSION

Leprosy can express itself in different clinicopathological forms depending on immune status of the host. The male predominance noted in our study matched with previous studies. The clinicopathological correlation observed here was 85.3% which was quite higher compared to the study by Semwal S *et al* where it was 62% only. Also, this concordance was higher than few other studies reported previously.<sup>[1]</sup> The cellular characteristics in leprosy lesions are related to immunological modulation of the patient. Hence, different grades of modulation affect the host defensive response and result in different types of clinicopathological pictures. Here, LL cases had higher clinico-pathological correlation compared to BT or BL cases implying the fact that clinically appearing BT or BL cases can fall in a different spectrum after histopathological correlation. Hence, a careful clinico-pathological correlation is warranted. Also, the site for biopsy plays a crucial role in accurate diagnosis, especially in atypical scenarios since clinically dissimilar lesions biopsied from the same patient can show different types of histopathology.<sup>[4]</sup>

## CONCLUSION

Detection of new leprosy cases is increasing steadily with more multibacillary cases. Newer and uncommon forms of disease presentation was an interesting finding here, however diagnosing them was a big challenge. Thus, a high index of suspicion together with clinico-pathological correlation is the need of the hour. It is evident that there is a higher incidence of multibacillary cases as proved by histopathology, which are otherwise considered paucibacillary cases or entirely different entity (atypical cases) clinically. Thus, this study highlights the pivotal role of histopathology in leprosy.

## REFERENCE

- Semwal S, Joshi D, Goel G, Asati D, Kapoor N. Clinico-histological correlation in Hansen's disease: Three-year experience at a newly established tertiary care center in Central India. *Indian J Dermatol* 2018;63:465-8
- Rao. PN, Suneetha S. Current Situation of Leprosy in India and its Future Implications. *Indian Dermatol online J.* 2018 Mar-Apr; 9(2): 83–89.
- Thakkar, Sejal, Sangita V Patel. “Clinical Profile of Leprosy Patients: A Prospective Study.” *Indian Journal of Dermatology* 2014;59.2:158–162.
- Nadkarni NS, Rege VL. Significance of histopathological classification in leprosy. *Indian J Lepr* 1999;71:325-32