

HISTOMORPHOLOGICAL SPECTRUM OF HANSEN'S DISEASE- ONE YEAR STUDY

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Abstract

INTRODUCTION

The Government of India has implemented extensive eradication program for Leprosy, and in many areas it was declared as free from Leprosy in December 2005¹. In spite of all measures taken by Government of India, lack of awareness, social stigma.

MATERIALS AND METHODS

Retrospective study from January 2018 to December 2018 in the department of pathology Khaja Banda Nawaz institution of medical sciences. Paraffin embedded 3-5microns sections stained with Haematoxylin and eosin was studied. AFB Bacilli demonstrated by Fite Faracco.

RESULTS

Results tabulated. Cases classified according to modified Riedly- Jopling classification. 22 cases, 15 males, 7 female. Age range 13-64yrs (mean age- 45yrs). Most of cases were in 20-40yr age group

CONCLUSION:

National Leprosy eradication programme in India indicates that leprosy as a public health programme is negligible but a large number of newly diagnosed Hansen's cases are being reported from various hospitals. Most of these cases are drug resistant

KEYWORDS: Leprosy, Hansen's node, Riedly- Jopling

INTRODUCTION

The Government of India has implemented extensive eradication program for Leprosy, and in many areas it was declared as free from Leprosy in December 2005¹. In spite of all measures taken by Government of India, lack of awareness, social stigma, long treatment may be few of the reasons that we still see cases of Hansen's disease. Causative agent being Mycobacterium Leprae which primarily involves skin and peripheral nerves. According to WHO 2015, 60% of global Hansen's disease is reported in India². WHO 2016-2020 proposed global strategy to make leprosy free world. Early diagnosis and treatment are the hall marks to reduce this load and histopathology remains a gold standard for diagnosis.

MATERIALS AND METHODS

Retrospective study from January 2018 to December 2018 in the department of pathology Khaja Banda Nawaz institution of medical sciences .Paraffin embedded 3-5microns sections stained with Haematoxylin and eosin was studied.AFB Bacilli demonstrated by Fite Faracco. The present study was undertaken to study histomorphological features of skin biopsy specimens in department of Pathology ,Khaja Banda Nawaz tertiary care hospital over a period of from January 2018 to Dec 2018 after obtaining approval of ethical committee of our institute. Materials for the study consisted of skin biopsies received in the department of Pathology obtained from subjects who attended the OPD in Dermatology Department and clinically diagnosed to have leprosy.All the clinically diagnosed cases of leprosy were included in the study. Cases were selected regardless of their age, sex, religion, occupation and socioeconomic status. Inadequate biopsies, inconclusive reports and poorly preserved biopsy were excluded from study.

Technique

Biopsies were taken from representative lesions by the.Dermatologists and sent to histopathology section in glass or plastic vials containing 10% formalin solution. A detailed clinical history, examination findings indicating signs and symptoms of the skin lesions and provisional clinical diagnosis were collected. Gross examinations of biopsies were done . Biopsies were fixed as early as possible by 10% neutral buffered formalin and processed preferably within 24 hours. Following fixation, the tissues were processed, embedded in paraffin and serial sections of 4-5 microns were obtained, which were stained with Hematoxylin and Eosin for morphological assessment and with Zeihl Neelsen for identification of the bacilli. Histopathological features and the bacteriological status were noted and the diagnosis of leprosy was confirmed and classified according to Ridley and Jopling classification. Indeterminate and Cases of Histoid leprosy- a rare variant of lepromatous leprosy were also included in this study.

RESULTS

Results tabulated.Cases classified according to modified Riedly- Jopling classification. 22 cases,15 males,7 female. Age range 13-64yrs (mean age- 45yrs). Most of cases were in 20-40yr age group.

Table I: Distribution according to histological diagnosis.

TYPES	Number of cases	Percentage
Indeterminate (BB)	04	18.18%
Borderline Tuberculoid (BT)	05	22.72%
Tuberculoid Leprosy (TT)	02	9.09%
Borderline Lepromatous (BL)	03	13.63%
Lepromatous Leprosy (LL)	06	27.27%

One case each of Histoid Leprosy and Erythema nodosum Leprosum, were noted in the present study. Lepromatous Leprosy was most common followed by Borderline Tuberculoid.

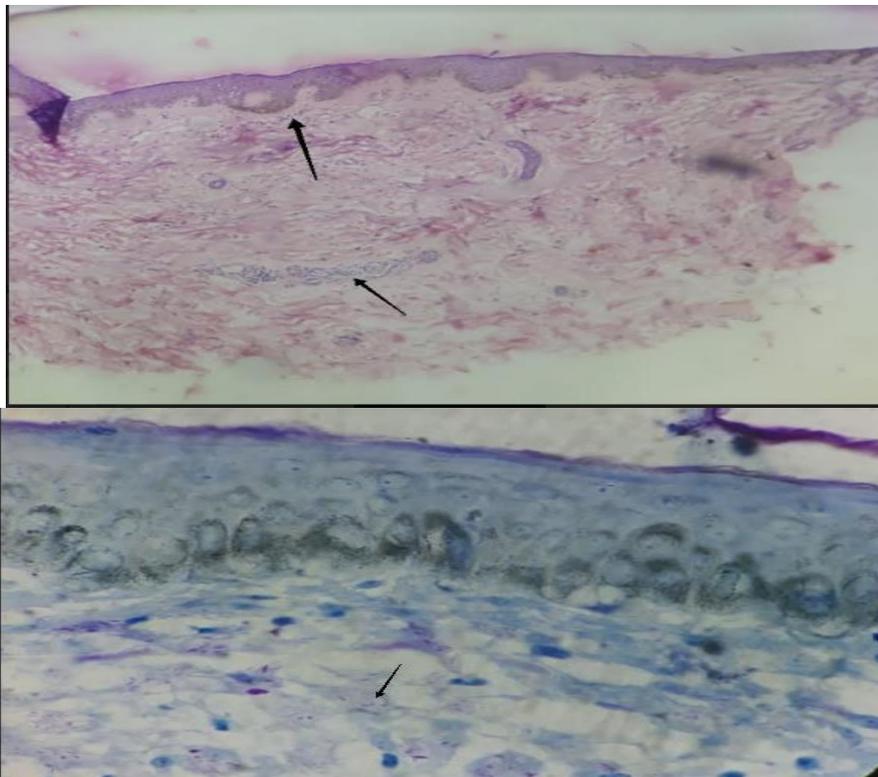
Table 2: Bacillary load was categorised according to Bacillary index ranging from 1+ to 6+

GRADE	BACILLI	EXAMINE OIF
1+	1-10 bacilli in 100 OIF	100 OIF
2+	1-10 bacilli in 10 OIF	100 OIF
3+	1-10 bacilli in 1 OIF	25 OIF
4+	10-100 bacilli in 1 OIF	25 OIF
5+	100-1000 bacilli in 1 OIF	25 OIF
6+	≥1000 bacilli in 1 OIF	25 OIF

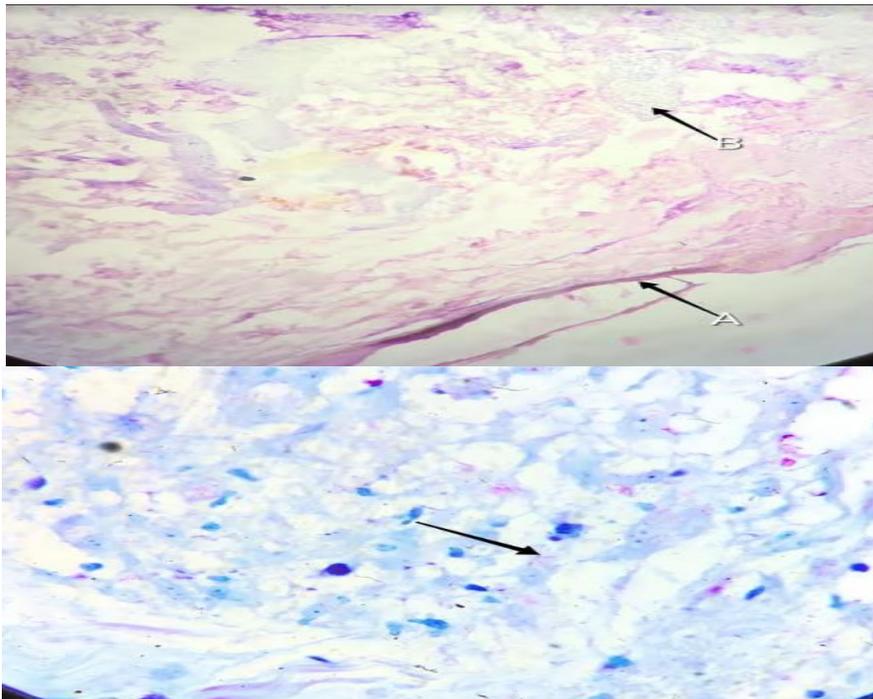
Table 3: Bacillary Index

Types	1+	2+	3+	4+	5+	6+	Negative
Indeterminate (BB)-(4)	2						2
Borderline Tuberculoid(BT)-(5)	1	3	1				
Tuberculoid Leprosy (TT)-(2)		2					
Borderline Leprosy (BL)-(3)			2	1			
Lepromatous leprosy(LL)-(6)			2	1	2	1	

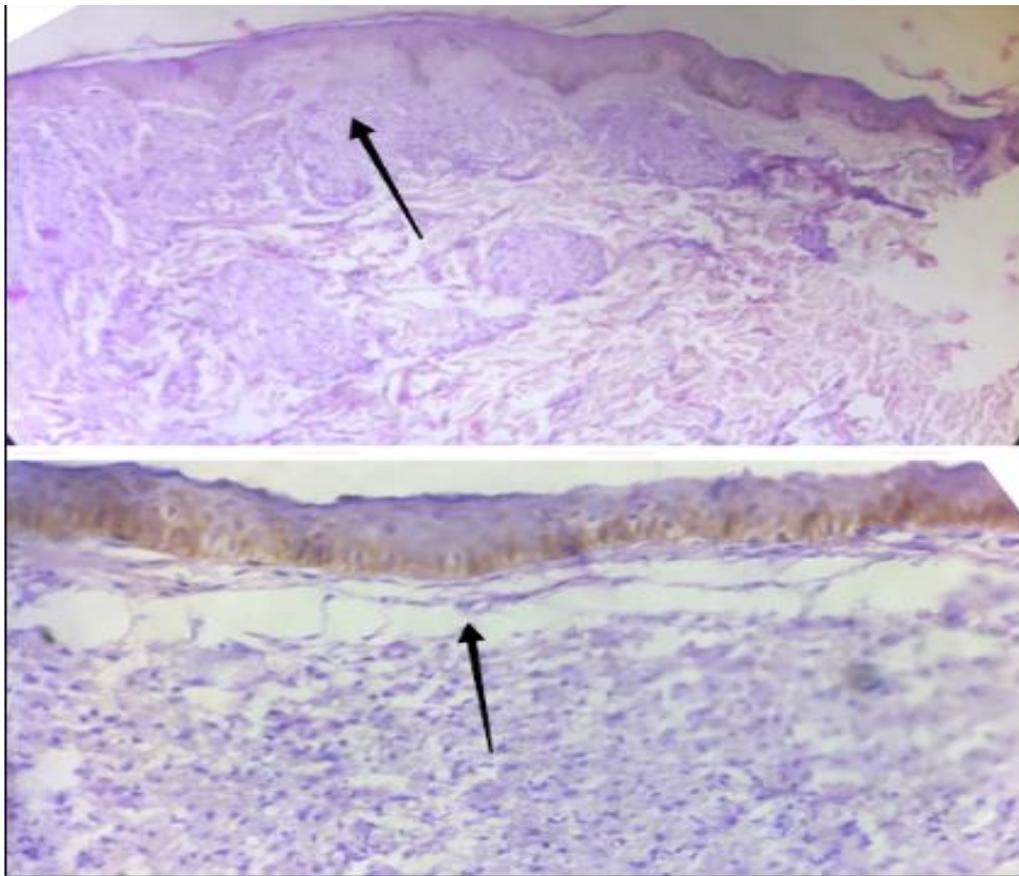
Microscopy

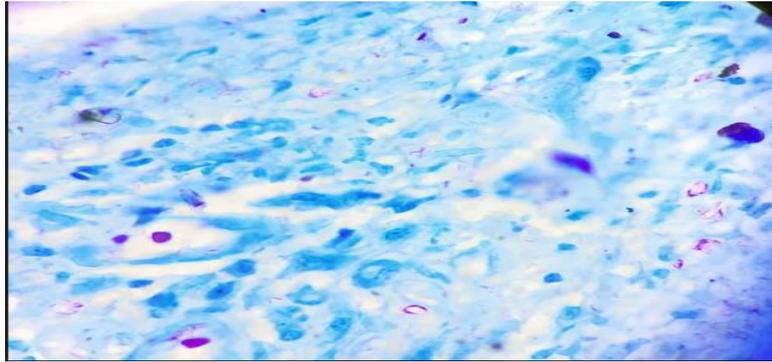


BT-Keratotic epidermis, and dermis shows focal chronic inflammatory infiltrate around the neurovascular bundle with epithelioid cell granuloma (BI 2+)



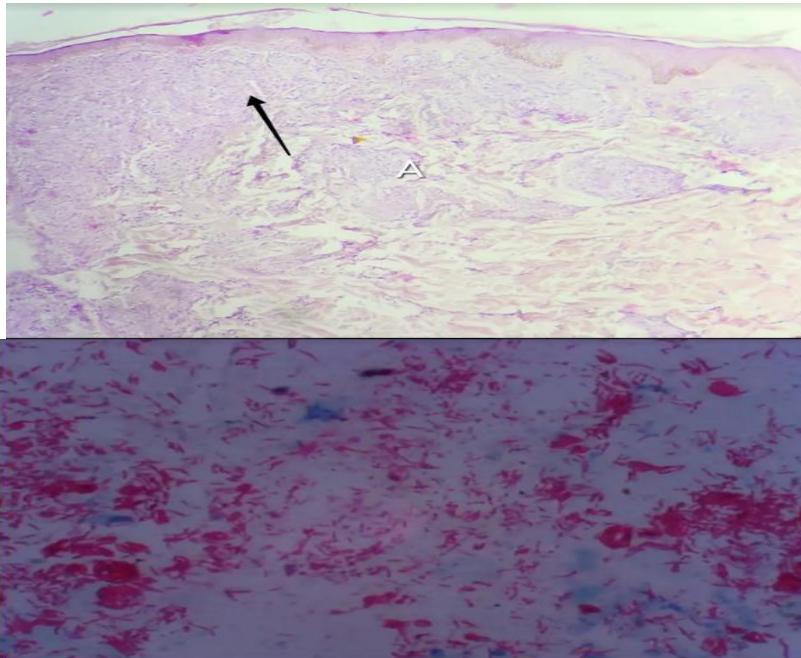
BL-Atrophied epidermis, dermis shows large clusters of foamy macrophages, deep dermis shows multiple granulomas comprised of epithelioid cells and proliferating blood vessels (BI-3+)



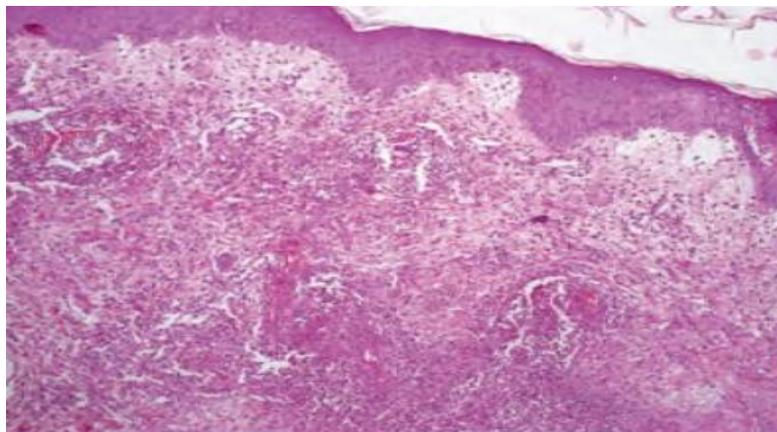


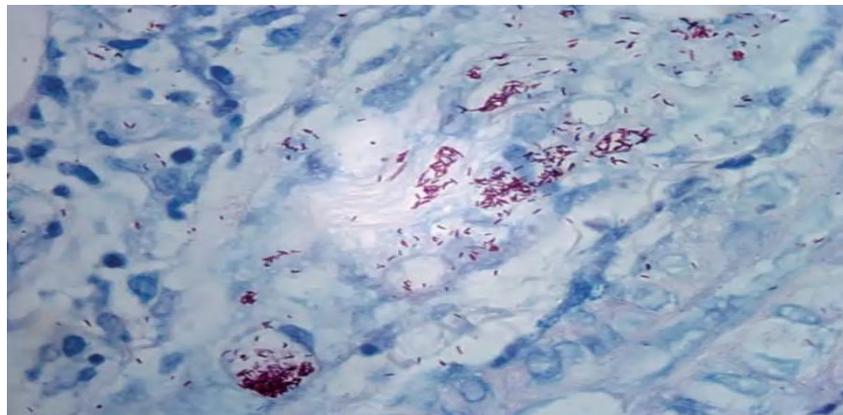
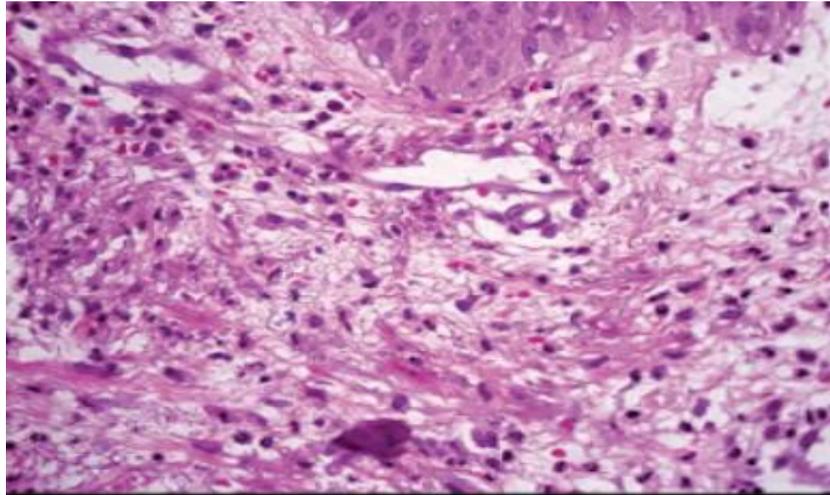
LL-Atrophied epidermis, dermis shows clear grenz zone and sheets of foamy macrophages BI 3+

HISTOID LEPROSY



Extensive cellular infiltration in dermis mainly composed of macrophages ,lymphocytes and plasma cells, clear grenz zone below epidermis,classical histiocytic granuloma(BI 6+)ENL.





superficial and deep dermis shows nodules of foamy macrophages admixed with neutrophils (BI 5+)

DISCUSSION:

On comparing present study with others studies, a vast variation in the number of cases were noted. In majority of studies Lepromatous Leprosy was most common except in the study by Murthy et al (2015), who showed Borderline Tuberculoid as more common than Lepromatous Leprosy in their study.

Comparison between Anushka et al (2015) with present study

	Sharma et al (2008)	Chauhari et al (2012)	Mistry et al (2015)	Murthy et al (2015)	Anushka et al (2015)	Present study(2018)
No. Of cases	247	126	59	100	63	22
TT	8.09%	26.6%	17.24%	1%	6.3%	9.09%
BT	35.2%	13.3%	27.14%	57%	17.4%	22.72%
BB	18.2%	3.3%	6.45%	0%	7.9%	18.18%
BL	6.4%	23.3%	29.03%	2%	22.2%	13.63%
LL	10.1%	33.3%	9.46%	11%	23.8%	27.27

	Anushka (63)		Present study(22)	
	Positive	Negative	Positive	Negative
Tuberculoid	-	04	02	-
Borderline tuberculoid	-	11	05	-
Borderline borderline	3	02	02	02
Borderline Lepromatous	6	08	03	-
Lepromatous Leprosy	12	03	06	-
Total	24	39	20	02

In the study by Anushka et al, AFB was negative in 39 case and positive in 24 ,as against the present study which showed more positive cases

CONCLUSION:

National Leprosy eradication programme in India indicates that leprosy as a public health programme is negligible but a large number of newly diagnosed Hansen’s cases are being reported from various hospitals. Most of these cases are drug resistant. Histopathological diagnosis with Bacillary index not only helps in diagnosis , subtyping the leprosy and also it’s treatment. The present study highlights. Common age group between (20-40 yrs). Histologically Lepromatous Leprosy as most common type. Single case of Histoid Leprosy and Erythema nodosum leprosum was also seen in the present study.

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