



Histopathological Study of Skin Biopsies from Clinically Diagnosed Leprosy Patients – 1 yr Institutional Study

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Abstract

Leprosy is caused by M. leprae and predominantly affects the skin and peripheral nerves. The disease is endemic in many tropical and subtropical countries

Materials and Methods: 38 skin biopsies from patients clinically diagnosed as leprosy were taken for study. The biopsies were formalin fixed and slides were stained with Hematoxylin and Eosin stain

Results: The predominant type of leprosy was Borderline Tuberculoid leprosy(BT) seen in 20 cases (52.63%) followed by Borderline Lepromatous leprosy(BL) seen in 10 cases(26.32%). 4 cases (10.53%) of Lepromatous leprosy(LL) and 3 cases(7.89%) of Tuberculoid leprosy(TT) were seen. 1 case(2.63%) of Histoid leprosy was seen in the study.

Conclusion: Histopathological examination of skin biopsies in leprosy is important to know the type of leprosy which is important for the treatment of patients.

Keywords: Leprosy, Tuberculoid, Lepromatous, Histoid, Histopathological study

Introduction

Leprosy is caused by M. leprae and predominantly affects the skin and peripheral nerves and results in disabling deformities. Leprosy or Hansen's disease, is a slowly progressive infection. The mode of transmission of leprosy is unknown, but it is probably by inhalation of bacilli, which may be excreted from the nasal passages of a leprosy patient. After inhalation the bacilli are taken up by the alveolar macrophages and disseminates through the blood, but replicates only in relatively cool tissues of the skin, cutaneous nerves and extremities, where infection and host reaction

commence. Despite its low communicability, leprosy remains endemic among an estimated 10 to 15 million people living in poor tropical and subtropical countries^{1,7}.

Leprosy is classified into 5 clinico-pathologic groups (modified Ridley and Jopling's classification)¹⁰ as

TT—Tuberculoid Polar (High resistance)

BT—Borderline Tuberculoid

BB—Mid Borderline (dimorphic)

BL—Borderline Lepromatous

LL—Lepromatous Polar (Low resistance)

Histopathology of lepromatous leprosy(LL) shows thinned out epidermis. The dermis shows foamy macrophages(called as lepra cells) which are seen around blood vessels, nerves and adnaaxal structures. Lepra cells have lepra bacilli demonstrated by AFB staining with 5%H2SO4. There is grenz zone.

Histopathology of Tuberculoid leprosy (TT) shows dermis consisting of granulomas composed of epithelioid cells, langhans' giant cells and peripheral mantle of lymphocytes. There is no grenz zone. Lepra bacilli are seen few in number.

Histopathology of Borderline Tuberculoid leprosy(BT) shows epithelioid cells and many lymphocytes. Lepra bacilli are scanty in number.

Histopathology of Borderline lepromatous leprosy(BL) shows many histiocytes, few epithelioid cells and few dispersed lymphocytes. Lepra bacilli are seen.

Histopathology of Mid-borderline leprosy(BB) shows epithelioid cells and few lymphocytes. Lepra bacilli are seen in nerves.

Histoid leprosy is rare variant of leprosy clinically presents as skin nodules.Histopathology of Histoid leprosy shows atrophy of epidermis with subepidermalgrenz zone. Dermis shows spindle cells arranged in whorled or storiform pattern. Acid fast stain shows numerous bacilli.

Material and Methods

The study is a retrospective study conducted on skin biopsies from leprosy patients received to the pathology department at KIMS, NARKETPALLY for a period of 1yr from july 2016 to july 2017. The study material consisted of 38 skin biopsies which were received to the pathology department for a period of 1yr. The biopsies received were fixed in 10% formalin and processed and paraffin blocks were prepared. Tissue sections were cut and stained with Hemotoxylin and eosin stain and histopathological examination was done.

Results

The present study included 38 skin biopsies received to the department of pathology from july

2016 to july 2017 at KIMS NARKETPALLY. The age group of the patients ranged from 11-70yrs. The majority of patients were in the age group of 21-30yrs. leprosy was more common in male patients compared to female patients. The commonest form of leprosy was Borderline Tuberculoid leprosy (BT) seen in 20 cases (52.63%) followed by Borderline Lepromatous leprosy(BL) seen in 10 cases(26.32%). Lepromatous leprosy (LL) was seen in 4 cases (10.53%) and Tuberculoid leprosy (TT) was seen in 3 cases(7.89%). 1 cases(2.63%) Of Histoid leprosy was seen in the present study. Age and sex wise distribution of cases is shown in TABLE-1. Different histopathological patterns of leprosy is shown in TABLE-2.

Table 1: Age and Sex wise Distribution of Leprosy Cases.

Age(years)	MALE	FEMALE	TOTAL	PERCENTAGE
11-20	02	-	02	05.26%
21-30	13	04	17	44.74%
31-40	06	02	08	21.05%
41-50	05	01	06	15.79%
51-60	03	01	04	10.53%
>60	01	-	01	02.63%
Total	30	08	38	100.00

Table 2: Different Histopathological Patterns of Leprosy

TYPE OF LEPROSY	NO. OF CASES	PERCENTAGE
Tuberculoid leprosy(TT)	03	07.89%
Borderline Tuberculoid (BT)	20	52.63%
Midborderline leprosy(BB)	00	00.00%
Borderline Lepromatous (BL)	10	26.32%
Lepromatous leprosy(LL)	04	10.53%
Histoid leprosy	01	02.63%
Total	38	100.00%

Fig -1 Shows Tuberculoid Leprosy

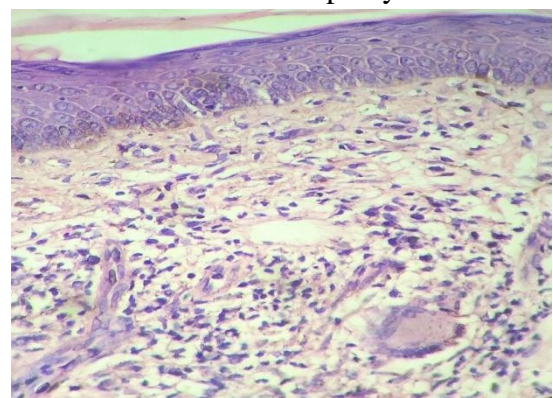
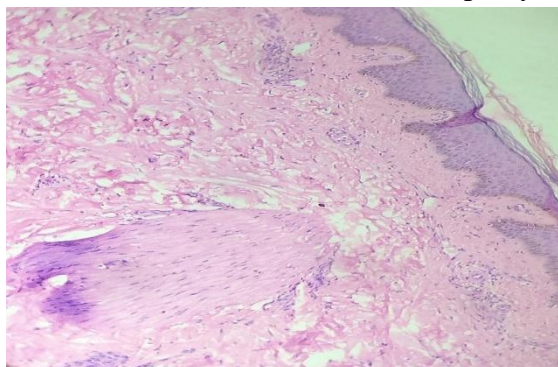
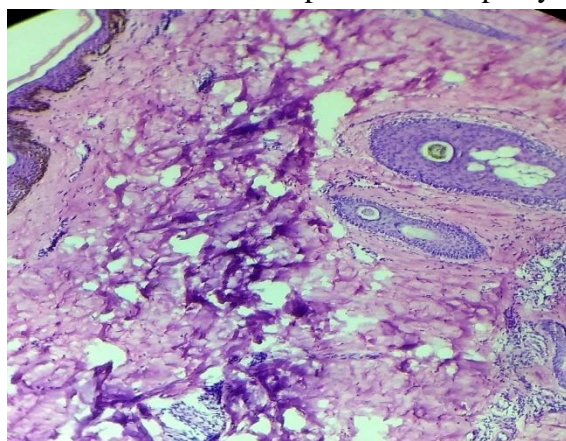
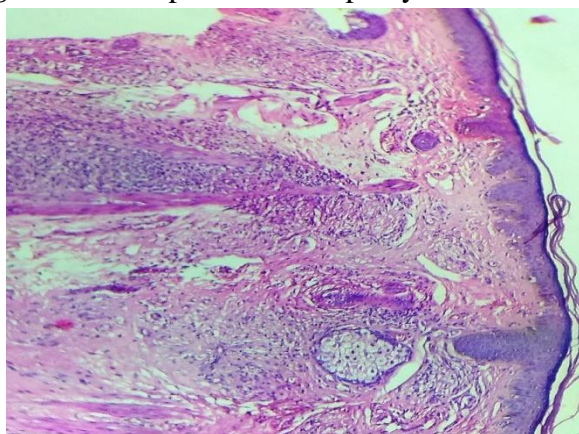
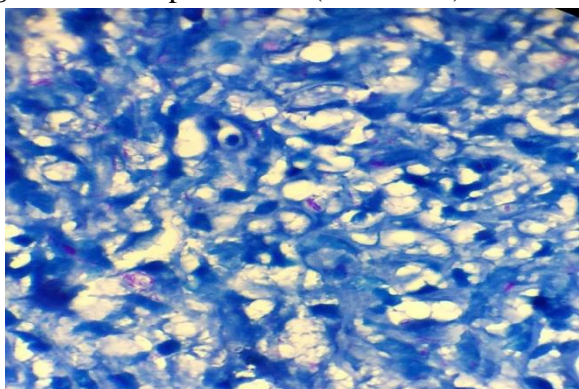
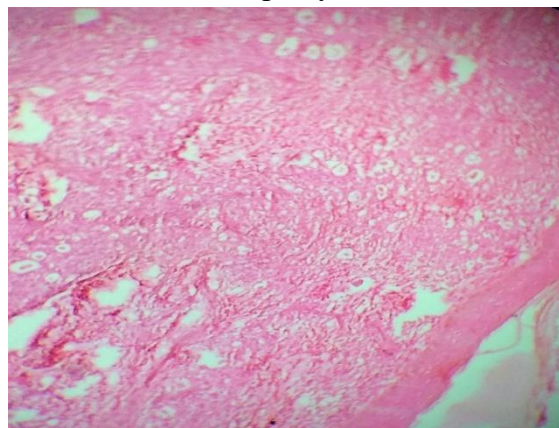


Fig-2 Shows Borderline Tuberculoid Leprosy**Fig-3 Shows Borderline Lepromatous Leprosy****Fig-4 Shows Lepromatous Leprosy****Fig-5 Shows Lepra Bacilli (AFB +VE)****Fig-6 Shows Histoid Leprosy****Discussion**

The study was done to know the histopathological features in skin biopsies of leprosy patients. In our present study 38 skin biopsies were analysed retrospectively. The age group of the patients ranged from 11-70 yrs. The majority of patients were in the age group of 21-30yrs which was similar to findings in studies done by Dr Neha Sharma et al¹¹. Leprosy was more common in male patients compared to female patients. This was similar to other studies conducted by Gupta R et al², Rad F et al³ and Peters ES et al⁵. The commonest form of leprosy was Borderline Tuberculoid leprosy (BT) seen in 20 cases (52.63%) followed by Borderline Lepromatous leprosy (BL) seen in 10 cases (26.32%). Lepromatous leprosy (LL) was seen in 4 cases (10.53%) and Tuberculoid leprosy (TT) was seen in 3 cases (7.89%). 1 cases (2.63%) of Histoid leprosy was seen in the present study⁶.

The categorisation of leprosy into various types based on microscopic features is important for management of patient,^{4,9,13,15}.

Conclusion

Leprosy is a slowly progressive disease caused by *Mycobacterium leprae*. Though it is considered to be eradicated it is seen in people of low socioeconomic status in tropical countries. Exact typing of leprosy may not be possible clinically. Hence histopathological examination of skin biopsies is important in leprosy patients to know the type of leprosy⁸. Exact categorisation of

leprosy is important for management of patients^{12,14}. Early treatment of patients is important to decrease the bacillary load and also to prevent physical disabilities occurring in leprosy patients.

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