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HISTOPATHOLOGICAL STUDY OF LEPROSY CASES AT KARWAR INSTITUTE OF MEDICAL SCIENCES.

Histopathology

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ABSTRACT

Introduction: Leprosy is a infectious disease which is chronic in nature. It is caused by bacterium mycobacterium leprae. Histopathologically diagnosis of leprosy is broadly classified under ridley jopling classification. **Aim:** To study the histopathological spectrum of leprosy at karwar institute of medical sciences, karwar. **Materials and Methods:** Retrospective study from January 2022 to june 2022 including the histopathologically diagnosed cases of leprosy. Skin biopsies from clinically suspected lesions are collected, fixed,processed and stained with H and E ,followed by Fite ferraco stain . Histopathological diagnosis is classified as per Ridley-jopling classification. **Results:** Out of 30 cases studied ,highest incidence was found in the age group 20 to 30. Males showing larger in number then females. Common clinical presentation being loss of sensation and histopathologically borderline lepromatous showing higher in frequency followed by lepromatous leprosy.In total Fite ferraco staining showing positivity with 50%. **Conclusion:** In order to prevent the drug resistance and to aid in good prognosis ,diagnosing leprosy is equally important. Hence histopathology is considered as a gold standard.

KEYWORDS

Histopathology, Leprosy, Skin, biopsies, cases.

INTRODUCTION

Leprosy is a disease caused by mycobacterium leprae also known as Hansen's disease, discovered by Sir Gerhard Armauer Hansen in 1873[1].It involves skin,peripheral nerves , bones, ligamnets, tendons , joints, eyes and various other internal organs.

National leprosy eradication programmes had worked and been successful in irradicating leprosy from india but still certain places in indian cities showing default [9,10]. The national PR was 0.66/10,000 population as on 31st March 2017. India still showing 60% leprosy cases in world[8].

Absence of treatment leads to permanent disfigurement of face,limbs, eyes. Histopathological confirmation is a gold standard method to diagnose leprosy with demonstarion of bacillin in AFB stain,Fite ferraco staining[4].Combination of clinician,pathologist and microbiologist plays a great role in diagnosing the disease as well as in approaching the accurate treatment and prognosis. Diagnosing leprosy is equally important to prevent drug resistance.

MATERIALS AND METHODS

A retrospective hospital-based study was done in Department of Pathology, Karwar Institute of Medical Sciences, karwar for a period of 6 months (January 2022 to May 2022). Clinically diagnosed patients of leprosy of all age groups and both genders were included. A 3mm to 5 mm lesional skin punch biopsies obtained by dermatologists. These biopsies were formalin-fixed, routinely processed and stained with H&E followed by fite ferraco staining. The lesions were graded as per the Ridley-Jopling classification into tuberculoid leprosy, borderline tuberculoid, indeterminate, borderline lepromatous and lepromatous leprosy. A new variant of leprosy was described by Wade, known as Histioid leprosy [11].

RESULTS

A total of 30 cases were studied. On histopathology, borderline category was the most frequently reported with borderline lepromatous leprosy (40%) being the most common subtype [Table/Fig-1] followed by lepromatous leprosy (27%). Tuberculoid leprosy (TT) was seen in 13%. There was no cases of histiod leprosy. There was a male preponderance, with a male to female ratio of 4:1 . Out of 30 cases, 80% were male and 20% were female . All subtypes of leprosy were more common in males than females. The age of the patients ranged from 10-80 years with mean of 24 years. Highest incidence predominance is a cause for concern as this is the economically productive group in a developing country . Most common clinical feature was loss of sensation followed by hypopigmented patches , erythematous skin lesions, neural thickening , deformities . Overall, fite ferraco staining was positive in 50% of cases .

Lower socioeconomic status, poor sanitary condition probably be the cause of multibacillary and borderline spectrum leprosy in the study. The findings of this study might help state and centre policymakers to develop more effective strategies for truly and complete eradication of leprosy cases from india.

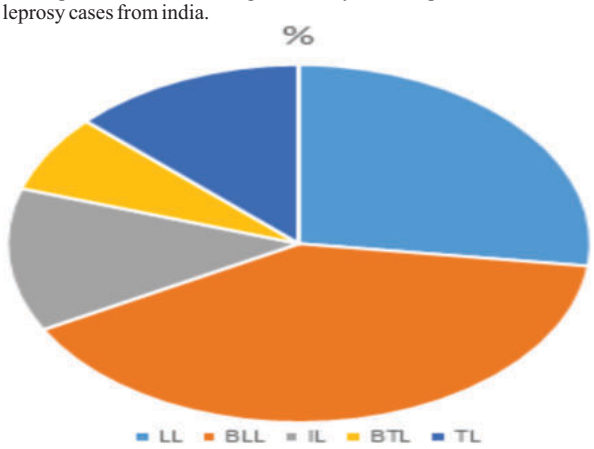

Fig1. Total Distribution of cases :Lepromatous leprosy [LL] - 27%,Borderline lepromatous leprosy [BLL]-40%,Indeterminate leprosy [IL]-13%, Borderline Tuberculoid leprosy [BTL]-7%,Tuberculoid leprosy[TL]-13%.

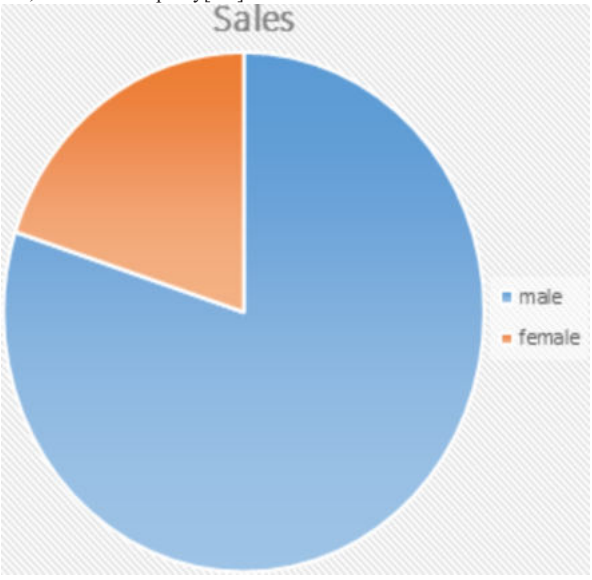

Fig 2. Distribution of cases as per gender

Table 1. Distribution Of Cases Under Various Age Groups

Age	LL	BLL	IL	BTL	TL
1-10					
11-20					
21-30	6	6		2	2
31-40			4		
41-50	2	4			
51-60		2			2
61-70					
71-80					
Total 30	8	12	4	2	4

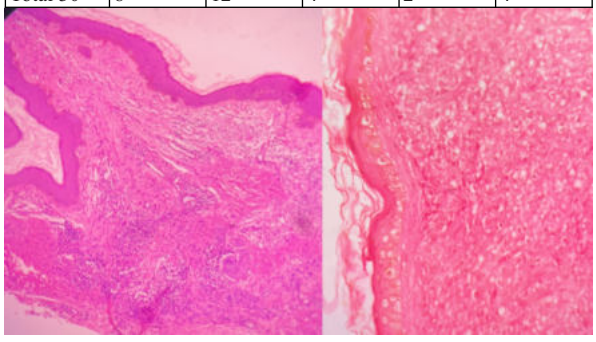

Fig3. TB leprosy 10x, HnE **Fig 4.** LL leprosy 40x Hne

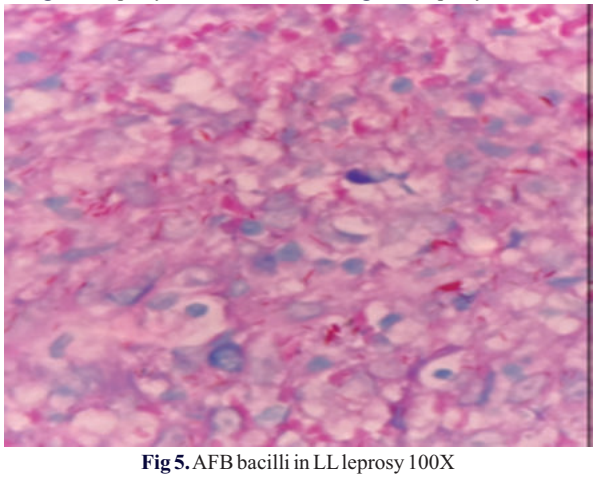

Fig 5. AFB bacilli in LL leprosy 100X

DISCUSSION

Leprosy is a chronic infectious disease caused by mycobacterium leprae. Diagnosis of leprosy is classified under various classifications such as indian,Madrid,ridley and jopling. Presently in the study we are considering ridley an jopley classification. This classification is based on clinical,histopathological ,bacteriological .

Immunity of an indivual plays a vital role in classifying diagnosis under ridley and jopling type. Lepromatous leprosy[LL], Borderline lepromatous leprosy[BLL],Borderline tuberculoid[BT],Inderminate and Tuberculoid leprosy.

Histopathologically it includes atrophied epidermis, grenz zone,granulomas, inflammatory cell infiltrates. Fite ferraco positivity was seen in 50 percent of cases.

Our study shows majority of leprosy cases under borderline lepromatous leprosy followed by lepromatous leprosy, tuberculoid leprosy,inderminate variety.similar to studies done by 13,18-20,21,23

As per these studies ,similar to them studies 13,18-20,21,23.our study also showed male predominance than female.

As india is a developing country,majority of working population is considered to be youngesters.As our study involves people in majority are around 21 to 30years. Diagnosis and treatment is a crucial step considering the economy of our indian population.

Diagnosing leprosy is a multi disciplinary approach as it involves clinical consideration of signs symptoms and pathologist review regarding the diagnosis based on tissue biopsy and bacteriological index approach from microbiology.

In our study loss of sensation, hypopigmented patches was the predominat clinical signs and thickening of nerves was less common.

CONCLUSION

Diagnosing leprosy is very important as the right diagnosis leads to proper drug selection and prevents from drug resistance . It also aids in the prognosis of the disease. Hence ,histopathology is always a gold standard method of diagnosis.

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