

## Clinicopathological Study of Hodgkin Lymphoma over a Period of Three Years, From a Tertiary Cancer Centre in an Indian Setup

Rallabandi Hima Bindu<sup>1\*</sup>, S. Jayabhaskar Reddy<sup>2</sup>, V. Anjaneyulu<sup>3</sup>, Sai Mallikarjun<sup>4</sup>

<sup>1</sup>Assistant Professor, Department of Pathology, Apollo Institute of Medical sciences and Research, Hyderabad, India

<sup>2</sup>Head of the department and professor of Pathology, Apollo Institute of Medical sciences and Research, Hyderabad, India

<sup>3</sup>Retired Professor, Department of Pathology, Osmania Medical College, Hyderabad, India

<sup>4</sup>Consultant Pathologist, Nawaz Jung Cancer Hospital, Osmania Medical College, Hyderabad, India

### Original Research Article

#### \*Corresponding author

Rallabandi Hima Bindu

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**Abstract:** Hodgkin lymphoma is a lymphoproliferative malignancy. Originally described by Thomas Hodgkin in 1982. Epidemiological, trend followed by Hodgkin lymphoma is different in developed countries from that compared to developing countries. There are only few reports from India regarding the epidemiological and clinic pathological features of Hodgkin lymphoma. We studied 129 cases of Hodgkin lymphoma, from MEHDI NAWAZ JUNG Tertiary Cancer hospital, over a span of 3 years, from May 2007 to May 2010, out of which 97 patients were male and 32 were female with M: F ratio of 3:1. Most common presentation was with cervical lymphadenopathy, followed by B symptoms and very few with both lymphadenopathy and B symptoms. Age range was between 4 to 65 years with maximum cases occurring in first three decades. Most common site of biopsy was cervical lymph nodes with all histological subtypes occurring. The most common histological subtype being mixed cellularity. As Hodgkin lymphoma is often cured, in approximating 80% of the cases. Hence there is great potential of adding years of productive life by giving curative therapy.

**Keywords:** Hodgkin, lymphoma, WHO, lymphoproliferative, malignancy.

### INTRODUCTION

Hodgkin lymphoma is a lymphoproliferative malignancy. Originally described by Thomas Hodgkin in 1982 [1]. Epidemiological, trend followed by Hodgkin lymphoma is different in developed countries from that compared to developing countries [1].

There are only few reports from India regarding the epidemiological and clinicopathological features of Hodgkin lymphoma. Hodgkin lymphoma is one of the common malignancies of paediatric age group in India [2].

It has great potential for adding years of productive life by giving curative therapy as Hodgkin lymphoma are often cured. Overall, cure can be achieved in approximately 80% of patients with Hodgkin lymphoma [1].

### MATERIALS AND METHODS

We studied 129 cases of Hodgkin lymphoma, from MEHDI NAWAZ JUNG tertiary hospital, Osmania medical college over a span of 3 years, from May 2007 to May 2010, with clinical correlation. Lymph node biopsies received were collected in 10 % neutral buffered formalin along with detailed clinical

history. The tissue was then examined for gross appearance and noted down. Representative tissue was sampled and submitted for processing. Hematoxylin and eosin staining was done on paraffin sections and studied microscopically.

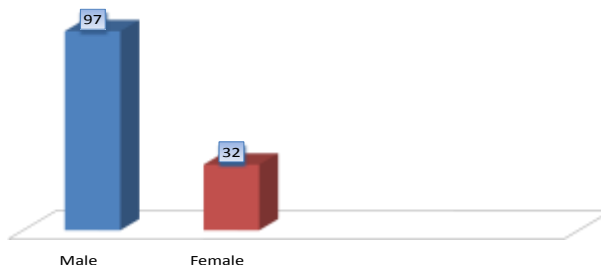
### OBERVATIONS AND RESULTS

Over a span of 3 years, we diagnosed 129 cases of Hodgkin lymphoma out of which 97 patients were male and 32 were female with M:F ratio Of 3:1. Most common presentation was with lymphadenopathy, followed by B symptoms and very few with both lymphadenopathy and B symptoms. Cervical lymphadenopathy was most common followed by cervical, axillary, inguinal, retroperitoneal, supraclavicular, submandibular and epitrochlear. Age range was between 4 years to 65 years with maximum cases occurring in first three decades. Most common site of biosy was cervical lymph nodes with all

histological subtypes occurring. The most common histological subtype was mixed cellularity followed by lymphocyte rich, lymphocyte depleted, nodular sclerosis and nodular lymphocyte predominant.

**Observations and Results**  
 Total number of cases – 129  
 Males – 97  
 Females – 32  
 Male: Female ratio – 3:1

### Hodgkin Lymphoma

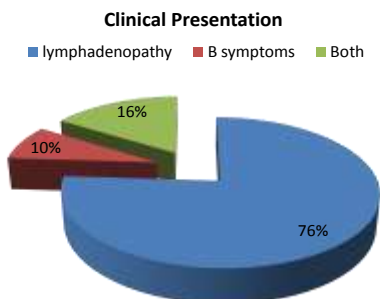


**Fig-1: Hodgkin lymphoma**

**Table-1: Clinical presentation**

Lymphadenopathy	98	76%
B symptoms	10	8%
Both	21	16%

### Hodgkin Lymphoma

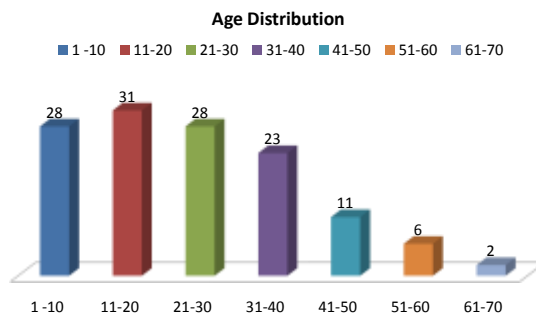


**Fig-2: Hodgkin lymphoma Clinical presentation**

**Table-2: Age distribution**

Age	Number of cases	Percentage
1-10	28	21.7%
11-20	31	24.03%
21- 30	28	21.7%
31- 40	23	17.8%
41- 50	11	8.5%
51 –60	06	4.6%
>60	02	1.5%

## Hodgkin Lymphoma

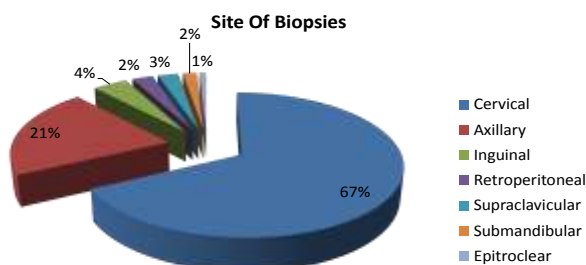


**Fig-3: Hodgkin lymphoma Age distribution**

**Table-3: Site of biopsies**

Site	Number	Percentage
Cervical	87	67%
Axillary	27	21%
Inguinal	5	4%
Retroperitoneal	4	3%
Supraclavicular	3	2%
Submandibular	2	2%
Epitrochlear	1	1%

## Hodgkin Lymphoma

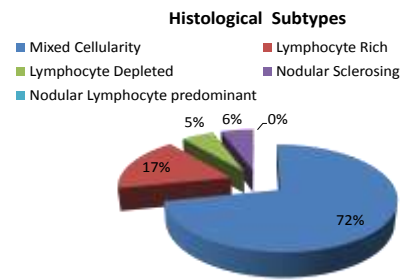


**Fig-4: Hodgkin lymphoma Site of biopsies**

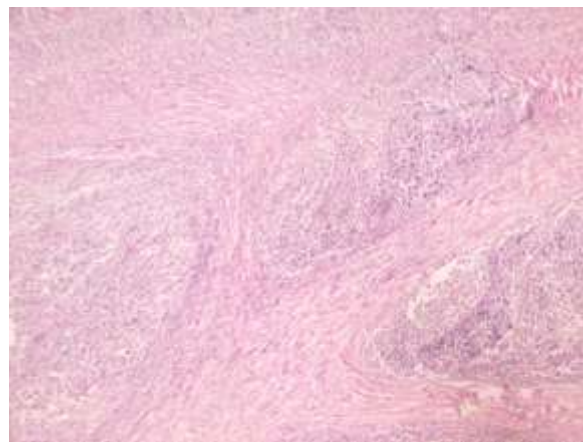
**Table-4: Histological subtypes**

Subtype	Number of cases	Percentage
Mixed cellularity	93	72%
Lymphocyte Rich	22	17%
Lymphocyte Depleted	8	5%
Nodular Sclerosing	6	6%
Nodular lymphocyte predominant	0	0%

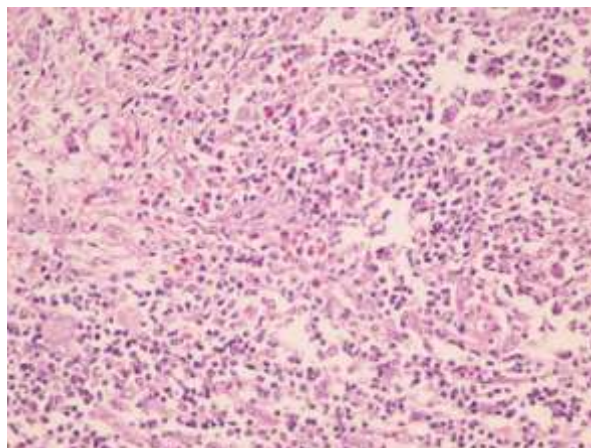
## Hodgkin Lymphoma



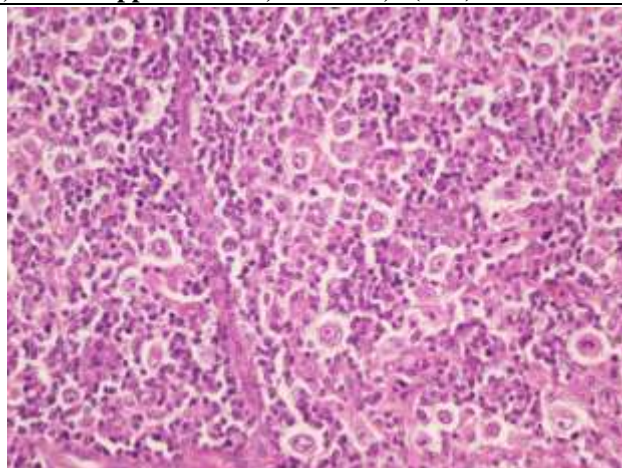
**Fig-5: Hodgkin lymphoma Histological subtypes**



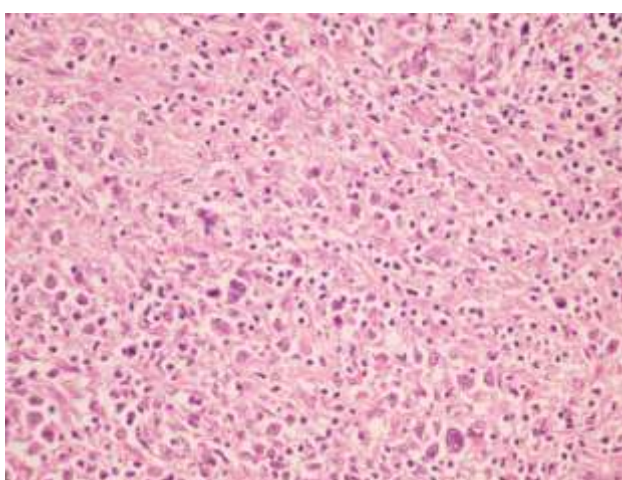
**Fig-6: Hodgkin lymphoma – nodular sclerosis subtype – low power view**



**Fig-7: Hodgkin lymphoma – mixed cellularity type**



**Fig-8: Hodgkin lymphoma - lymphocyte rich**



**Fig-9: Hodgkin lymphoma – lymphocyte depleted**

## DISCUSSIONS

Hodgkin Lymphoma is relatively rare and its incidence varies with age, geographical location and socioeconomic class. Hodgkin lymphoma disease mainly involves the immune system and presents characteristic RS cell with infiltration of reactive lymphocytes, eosinophils and plasma cells [3].

WHO classification has been used to subtype Hodgkin lymphoma which was preceded by classification proposed by Jackson and Parker, Smetana and Cohen's, Lukes [4], and Rye conference [5].

Subtypes vary in prevalence throughout the world. In Europe, mixed cellularity and nodular sclerosis are more common [6-8] and is same in USA and Japan [9]. In Africa mixed cellularity and lymphocyte depleted are more common [10] and in Korea, mixed cellularity was more common followed by lymphocyte depleted [11] and lymphocyte predominant [12, 13]. In India [14] mixed cellularity was most common followed by lymphocyte rich. A study from western India by Dinshaw *et al.* in 2006 [15] also showed the same trend. In Taiwan [16] nodular sclerosis was most common subtype followed by mixed cellularity. A study from Pakistan [17] showed mixed

cellularity as most common followed by nodular sclerosis. The nodular Sclerosis is reported to be the most common subtype of Hodgkin Lymphoma in western countries, whereas, mixed cellularity is a more common feature of developing countries like India and Pakistan.

In our study we found mixed cellularity being the most common subtype – followed by lymphocyte rich. With regard to age distribution it is reported that it has 'bimodal curve' which has two peaks in the second decade and the other in 4th and 5th decade [17,20] but several reports do not show this distribution [19,20]. A study from Pakistan in 2008 [17] showed only 20% of the cases were above 60 years of age. A study from Taiwan in 2005 [16] showed peak incidence at 20 years of age.

In our study we have maximum cases occurring in first three decades, and later decreasing with age the results are quite comparable to Asian studies.

Female to male ratio in our study is 1: 3, which is in accordance to many studies. A study from India [14] by Ram das *et al.* showed F: M ratio of 3.1:1.



Male preponderance is also reported from developed countries like United States and also in other Asian countries like Taiwan and Pakistan [16,17] which showed F:M ratio 2.9:1 and 1:3 respectively.

Most common initial presenting symptom was cervical lymphadenopathy which is again similar to many of studies from Asia [17, 20].

Most common stage at presentation in our study was 2nd and 3rd, similar to study from India by Ramdas *et al.* [14]. Another study of 34 patients with Hodgkin's Lymphoma from Taiwan revealed extremely high incidence (80.6%) of advanced clinical stages III and IV. Study from Pakistan<sup>17</sup> showed advanced clinical stages III and IV accounting for 54% of cases.

### CONCLUSION

To summarize Hodgkin lymphoma - effects younger age group, males are affected, three times more compared to female's. Cervical lymphadenopathy being the most common presenting symptom, usually in the second or the third stage of disease. Mixed cellularity being the most common type in India, where as in developed countries it is nodular sclerosis. Most of the variables compared are comparable to other studies throughout the world with most concomitant results from neighbouring and developing countries.

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