

### NON-HODGKIN'S LYMPHOMA: A CASE REPORT

#### ABSTRACT

**Introduction:** Hodgkin's and non-Hodgkin's Lymphoma are malignant tumours of lymphoid tissue. Non-Hodgkin's Lymphoma are a type of lymphoid tissue cancers that arise from T or B cells or their progenitors, and can be indolent or aggressive. B-cell lymphomas account for about 80% of all cases in the United States. Chronic lymphocytic leukaemia or small lymphocytic lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, and primary cutaneous B-cell lymphoma are all examples of Non-Hodgkin's Lymphoma. Non-Hodgkin's is the sixth most prevalent malignancy in the United States, with incidence rates nearly doubling in the last 35 years. With each decade of life, the incidence rises; the median age upon diagnosis is 66 years. In India, the incidence rates in urban regions are many times higher than in rural areas, with the incidence being higher in metropolitan cities and among Indian immigrants, implying that urban lifestyles and economic advancement may boost cancer incidence. In 2010, NHL was projected to have caused approximately 0.36 million new cases and 0.19 million deaths.

**Case Presentation:** A male patient of Two and half years from Shiwangaon MO, was admitted to Paediatric Ward, AVBRH on 31<sup>st</sup> May, 2021 with a known case of Non-Hodgkin Lymphoma which was diagnosed at AVBRH on 31<sup>st</sup> May,2021. Patient was brought with a chief complaint of swelling in the testicular region for 6 days. As narrated by the patient's father, the patient was apparently well 6 months back and then patient develop swelling in temporal region suddenly, associated with pain on touch, as the swelling develops more and uncomfortable, patient was brought immediately to AVBRH and was admitted in Paediatric Ward for further investigation.

**Keywords:** Non-Hodgkin's Lymphoma B-cell, T-cell, natural killer cell, lymphoid leukaemia, lymphoma, and immunodeficiency.

## INTRODUCTION

Non-Hodgkin lymphomas are a heterogeneous group of cancers that develop when lymphoid tissue proliferates abnormally. The neoplastic cells are assumed to start from a single clone of lymphocytes, similar to Chronic Lymphocytic Leukaemia; however, in NHL, the cells might vary morphologically.<sup>1</sup> Non-Lymphoma Hodgkin's is caused by malignant B lymphocytes in 85% of cases, while T lymphocytes are responsible for the remaining 15%. Unlike Hodgkin lymphoma, the lymphoid tissues are heavily invaded with cancerous cells.<sup>2</sup> True localized illness is uncommon since the spread of these malignant lymphoid cells is unpredictable. Multiple lymph nodes, as well as places outside the lymphoid system, may be involved.<sup>3</sup>

Despite the lack of a common etiologic component, the incidence of NHL has increased among people with immunodeficiency or autoimmune illnesses, who have had cancer therapy, who have had an organ transplant, who have had viral infections, and who have been exposed to pesticides, solvents, dyes, or defoliating agents such as Agent Orange. At five years, the overall survival rate is 69 percent, and at ten years, it is 59 percent.<sup>2</sup>

Low-grade tumors have well-differentiated cells and a gradual disease progression, with death occurring years later. Poorly differentiated cells characterize high-grade lymphomas, which progress rapidly and result in mortality within weeks or months. With a faster rate of progression, some low or intermediate-grade tumors advance to high grade.<sup>3</sup>

The enlarged lymph nodes may put pressure on nearby tissues and organs. Immunological deficit increases the risk of infection, and if the bone marrow or spleen is implicated, anaemia and leukopenia can occur in variable degrees.<sup>3</sup>

### CASE HISTORY Patient Information

A 2 ½ years old male child from Shiwangaon was admitted to Paediatric Ward, on 31<sup>st</sup> May 2021 with a known case of Non-Hodgkin's Lymphoma which was diagnosed at AVBRH on 31<sup>st</sup> May 2021.

### Present Medical History

A male patient of 2 ½ years from Shiwangaon MO was admitted to Paediatric Ward, AVBRH on 31<sup>st</sup> May 2021 with a known case of Non-Hodgkin's Lymphoma which was diagnosed itself at AVBRH on 31<sup>st</sup> May 2021. The patient was brought with a complaint of swelling in the testicular region for 6 days. As narrated by the patient's father the patient was apparently well 6 months back and then the patient develops swelling in the temporal region suddenly, associated with pain on touch, but as the swelling develops more and uncomfortable, the patient was brought immediately to AVBRH and was admitted in Paediatric Ward for further investigation.

### **Past Medical History**

The patient was admitted to AVBRH two months ago for parotid swelling, and a biopsy was performed along with an MRI with MRA. However, the swelling regressed after numerous treatment and the biopsy result did not rule out cancer.

### **Family History**

There are 4 members in the family, the patient, his father and mother and his elder Brother. The other family members do not have any communicable disease except for the patient himself. The type of marriage of the patient parents is non-consanguineous marriage. The other family members are healthy.

### **Past Intervention and Outcome**

The patient had his first swelling at the parotid region 2 months back and was admitted in AVBRH but does not rule out Hodgkin's disease back then. After several investigations and treatment, my patient can do daily activities of living without much interruption after discharge 2 months back. He is conscious and taking medications regularly.

### **Diagnostic Evaluation**

Blood study shows: Haemoglobin-6.1mg/dl, TLC- Approximately 19,500 cells/cu.mm, Calcium-9.7mg/dl, Urea-31mg/dl, Creatinine-1.2mg/dl, Sodium(Na<sup>+</sup>)-137mEq/L, Potassium- 4.8mmol/L, L.D.H-5535 U/L, and Uric Acid-15.1mmol/L

### **Management**

1) Medical Management:

The patient was treated with Tablet Allopurinol orally twice a day with a dose of 300mg 1/4, and Inj. Ceftriaxone with 20ml NS twice a day till the last day of care.

2) Nursing Management:

The patient was observed for vital signs closely. **Keep patients safe from falls at risk. Provide pain management. Give health education to the patient's family regarding the disease.**

### **Discussion**

A male child of 2 ½ years old from Shiwangaon was admitted to Paediatric Ward on 31<sup>st</sup> May 2021 with complaints of swelling in the testicle's region for 6 days. My patient had his first swelling at the parotid region 2 months back and was admitted in AVBRH but does not rule out the non-Hodgkin's disease back then. After several investigations and treatment, my patient can do daily activities of living without much interruption after discharge 2 months back. After admission to AVBRH further investigation were done and rule out that it was Non-Hodgkin's Lymphoma, several treatments were given and the patient has had his first fever and vomiting on 4<sup>th</sup> June 2021 along with a complaint of pain in left parotid swelling, soon after giving medication and appropriate treatment patient does not have a serious problem during my case study.

A study was done on, "Occupation and the risk of Non-Hodgkin Lymphoma". It was done to analyse the risk in various jobs and sectors based on publications found in the MEDLINE database. Workers in the printing business [relative risk (RR), 1.86; 95 % confidence interval (95%CI), 1.37-2.52] and woodworkers appear to have a homogenous increased risk for NHL, according to the summary risk estimates. Farmers (RR, 1.11; 95 % CI, 1.05-1.17), especially in animal husbandry (RR, 1.31; 95 % CI, 1.08-1.60), and teachers (RR, 1.31; 95 % CI, 1.08-1.60) were found to have significant heterogeneity but elevated risks. There was no elevated risk of working in the meat processing industry (RR, 0.99; 95 % CI, 0.77-1.29). These findings suggest that, while jobs in the printing, wood processing, teaching, and farming are associated with an increased risk of Non-Hodgkin's Lymphoma, occupation is unlikely to be a major risk factor in most populations. At this time, there is no conclusive evidence of a link between occupations and increased Non-Lymphoma Hodgkin's risk; this can be attributed to methodological issues in studying the link between Non-Lymphoma Hodgkin's risk and occupation, such as disease heterogeneity and exposure circumstances, as well as low statistical power. Following the selection of study groups for the various jobs, a series of meta- and sensitivity analyses were carried out. Cochran Q statistics were used to test for heterogeneity among study-specific relative risks (RR; odds ratios in case-control studies and standardised mortality or incidence ratios in cohort studies). A random-effects model was employed to produce the summary risk

ratio and SE if statistically significant between-study heterogeneity was discovered, as opposed to a fixed-effects model if the Q statistics test revealed homogeneity within the group of studies. Begg's funnel plots and associated test, as well as Egger's test, were used to investigate possible publication bias. The meta-analyses provided in this study are based solely on a search of MEDLINE for papers on NHL and vocations, and should not be regarded as comprehensive systematic evaluations of the published and unpublished literature. Nonetheless, these meta-analyses give a summary of key studies examining the relationship between employment in specific vocations and industries and the risk of NHL. According to the review's summary RRs, farmers (particularly animal breeders), teachers, and printing sector professionals are at an increased risk of NHL. Nonetheless, no definitive proof of a causal relationship exists for any employment or industry at this time. This could be owing to methodological issues in researching the link between NHL risk and profession, such as disease heterogeneity, heterogeneity of exposure circumstances (i.e., the same job entails exposure to different agents in different areas and times), and insufficient statistical power, especially for NHL subtypes. Despite these methodological flaws, these findings show that, in most populations, occupation is unlikely to be a significant risk factor for NHL.<sup>5</sup>

### **Conclusion**

Non-Hodgkin lymphomas have a wide range of histological and clinical characteristics, making it challenging to diagnose. Lymphoma is not uncommon, and most clinicians, regardless of specialty, will have encountered a patient with lymphoma. Timely diagnosis is important because effective, and often curative, therapies are available for many subtypes<sup>4</sup>. We explore breakthroughs in our understanding of the biology of these cancers, as well as a novel, available treatments, in this Case Report. Multiple myeloma and Burkett's lymphoma, for example, can develop in any lymphoid tissue or bone marrow. They are classified according to the type of cell involved and the degree of malignancy, i.e., low, intermediate or high grade. My patient does not have very much profound improvement after admission and treatment was still going on till the last day of my care.

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