



## **A Case Report on Pulmonary Effusion due to Non-Hodgkin's Disease**

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### **Author's contribution**

*The sole author designed, analyzed, interpreted and prepared the manuscript.*

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**Case Study**

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### **ABSTRACT**

**Introduction:** In patients with non-Hodgkin's disease, pleural effusion is not an unusual finding, with a recorded incidence of up to 20 percent. The effusion can be unilateral or bilateral, and the fluid causes symptoms of dyspnoea, cough, and/or chest pain in most patients.

**Case Presentation:** A 17 years male was admitted in AVBRH with the chief complaint of chest pain since 4 days on one side which radiated to left shoulder, breathlessness from 2 days on walking and cough from 1 month. Patient had no complaint of fever, cold, abdominal pain, vomiting, orthopnea or trauma. The patient had done all necessary investigations by physician order.

**Therapeutic Intervention, Management and Outcomes:** Patient was treated with oxygen therapy, chemotherapy, Thoracentesis and anticoagulant, antibiotics medication.

**Nursing Management:** Administered fluid replacement i.e. RL, oxygen therapy 15 litres per minute, chemotherapy, monitored all vital signs half hourly.

**Conclusion:** Timely treatment and management of Pleural effusion with non-Hodgkin's disease can bring out successful recovery with limited complications.

*Keywords: Pulmonary effusion; Intervention; non-Hodgkin's lymphoma; Medical Management.*

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## 1. INTRODUCTION

Chest Drainage for pleural effusion may cause pain and changes in respiratory system. The risk of pulmonary problems and impairment of functional capacity will also increase, which may increase the duration of hospital stay and related costs. In order to shorten the length of chest drainage, surgical and clinical techniques have been implemented for these purposes [1]. Pleural effusion in non-Hodgkin lymphomas is commonly associated with mediastinal adenopathy or tends to be particularly rare as part of the recurrent NHL's original NHL presentation as primary pleural lymphoma. Pleural effusion can be unilateral or bilateral and the fluid induces signs of dyspnoea, cough and chest pain in most patients. Thoracentesis in 60% to 90% of NHL patients results in a positive cytologic diagnosis [2]. A heterogeneous community of lymphoproliferative malignancies, NHL (Non-Hodgkin Lymphomas) is much less stable than the lymphoma of Hodgkin. and are far more likely to spread to extra nodal locations. In extra nodal areas, almost 25 percent of NHL cases occur and most of them contain both nodal and extra nodal locations. Diffuse large B-cell lymphoma (about 30 percent) and follicular lymphoma are The most popular subtypes of NHL in developed countries by far are (about 20 percent).The prevalence of all other NHL subtypes is less than 10%.[3] NHL is the sixth most common cause of cancer-related death in the United States behind prostate, breast, lung, colorectal, and bladder cancer [3]. A very rare occurrence is Primary Pleural Lymphoma. Most of the known cases in the course of the disease were Pleural effusion either presented with or later on formed. Chronic pleural inflammation has mostly been associated with malignant pleural lymphoma. The development of pleural lymphoma<sup>2</sup> is usually followed by Chronicle's History long-standing tuberculosis or Artificial Pneumothorax-treated pulmonary tuberculosis. Since there is no history of pleuro-pulmonary disease, no associated pleural effusion and no proof of lymphoma at any other location, the case under discussion is worth reporting [4]. Pleural effusion in non-Hodgkins's Lymphoma (NHL) is generally associated with mediastinal adenopathy or seems as a part of recurrent NHL [1]. Initial presentation of NHL as primary pleural lymphoma is extremely rare [2–5]. The pleural effusion may be unilateral or bilateral and in a majority of patients the fluid causes symptoms of dyspnoea, cough, and/or chest pain [6]. Thoracentesis results in a positive cytologic diagnosis in 60% to 90% of the patients

with NHL [7]. The diagnostic yield may be increased further by closed or visually directed pleural elusions and the application of immunocytologic methods [7]. In this article, we are presenting a case with pulmonary effusion with non-Hodgkin's disease.

## 2. PATIENT INFORMATION

**Patient specific information:** A 17 years male was admitted in MICU with the chief complaint of chest pain from 4 days on one side radiating to left shoulder, breathlessness from 2days on walking and cough from 1 month. Patient had no complaint of fever, cold, abdominal pain, vomiting or orthopnea or trauma. Before coming to AVBRH he had taken treatment from private hospital of Amravati where 2D ECHO was done. 2D ECHO showed severe PAH with clot in Right Pulmonary artery. Patient's financial condition was poor. So from there patient was referred to AVBRH for further treatment.

**Primary concerns and symptoms of the patient:** Chest pain from 4 days on one side radiating to left shoulder, breathlessness from 2 days on walking and cough from 1 month.

**Medical, family, and psycho-social history:** Present case had no any medical history. In family history, he belonged to joint family. He was mentally stable, conscious and oriented. He maintained good relationship with doctors and nurses as well as other patients also.

**Relevant past interventions with outcomes:** Present case had history of gangrene before two years for which he had taken treatment in private hospital of Amravati. No document was available. Before coming to AVBRH, he had taken treatment from private hospital of Amravati where 2D ECHO revealed severe PAH with clot in Rt. Pulmonary artery.

## 3. Clinical Findings

### 3.1 General Examination

State of health: Unhealthy  
General condition: Not satisfactory  
State of consciousness: Conscious  
Body built: Moderate  
Hygiene: Poor

### 3.2 General Parameter

Height: 163 cm

Weight: 67 kg

### 3.3 Vital Parameter

Blood pressure: 130/100mmhg  
Temperature: 98.6° F  
Pulse: 90 beats/min.  
Respiration: 25 breath/ min.  
SPO<sub>2</sub>: 97%

### 3.4 Systemic Examination

**CVS** – S<sub>1</sub> S<sub>2</sub> +

**Respiratory:** wheezing sound present on left side

**ESM** – Over pulmonary area

**Diagnostic Assessment:** Cytopathology examination of pleural fluid reported “Marked lymphoid cell Infiltrate with Atypia”

CECT Thorax with Pulmonary Angiography: Findings suggestive of Multiple lymph nodal mass possibly- lymphoma. Color Doppler study: Moderate left side pleural effusion. Right side showed mild pleural effusion.

### 3.5 Other Tests

#### 3.5.1 Kidney function test

**Blood urea** = normal  
**Creatine – serum** = slightly decrease  
**Serum- Potassium** = normal  
**Sodium (Na<sup>+</sup>)** = Normal

#### 3.5.2 Complete blood count

**Hb%** = Normal  
**Total RBC count** = Normal  
**Total platelet count** = Normal  
**Total WBC count** = Increase  
No any challenges were faced during diagnostic evaluation.  
Prognosis: Fair

**Therapeutic intervention:** Medical management: Oxygen Therapy – 15lit/min, Inj piptaz 4.5gm BD, Inj. Levoflox 500mg , Inj. Pan 40mg BD, Inj. Emset 2mg I.V. Nebulization with Budocort TDS. Chemotherapy-pre-chemotherapy medications- Inj. pan 40mg , Inj. Emset 4mg, Chemotherapy medication- hydration with RL 500ml over 3-4hrs, Inj. Cyclophosphamide 500g IV stat in 500 ml NS glass bottle over 3-4hrs. Inj. Vincristine 1gm IV stat in 500ml in glass bottle

NS over 3-4 hrs, hydration with RL 500 ml 3-4 hrs.

No any changes in therapeutic intervention.

**Follow-up and outcomes:** Follow-up was taken at two weeks. Patient showed improvements.

## 4. DISCUSSION

This case of non-Hodgkin lymphoma showed significant improvement on treatment. A case-controlled research was conducted to assess the clinical picture of NHL pleural effusion. Ten intermediate-grade NHL patients were paired with 23 controls. No statistically relevant discrepancy between these groups in total remission or survival rates was observed (P=0.69 and P=0.7, respectively). In the subgroup of patients and controls treated with intensive chemotherapy, recovery and survival rates were also comparable. Similarly, no discrepancy between the four cases and the six matched controls with low-grade lymphoma was observed in these parameters. For patients with high-grade lymphoma, no matching controls were identified; however, these patients had an unfavorable result. Fourteen of the 17 patients examined had pleural effusion of the exudative form. In each case, thoracentesis provided a positive cytological finding [5]. Few of the related studies on lung diseases were reviewed [6-9]. Studies on pulmonary tuberculosis were reported by Dholkia et. al. [10] Singhal et al. [11] and Bawankule et al. [12]. Studies on Global burden of diseases [13-15] also reflected similar issues [16-20].

## 5. CONCLUSION

Timely treatment and management of Pleural effusion with non-Hodgkin's disease can bring out successful recovery with limited complications.

## DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

## CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline patients consent and ethical approval has been collected and preserved by the authors.

## COMPETING INTERESTS

Author has declared that no competing interests exist.

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