



# A Somali Female with Bilateral Chylothorax as Complication with Non-Hodgkin Lymphoma: A Rare Case Report

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## Abstract

When lymphatic fluid enters the thoracic duct and accumulates in the pleural space, this is referred to as chylothorax. Bilateral chylothorax due to Chronic Lymphocytic Leukemia (CLL) has been published rarely in the literature. Lymphoma accounts for around 70% of cases due to malignancy. Chylothorax is an uncommon and poorly defined complication of non-Hodgkin and Hodgkin's lymphomas of any histological type or grade. The bilateral chylothorax caused by lymphoma has also been rarely reported in the literature. A 49-year-old Somali woman complained of chest pain for two weeks, which was gradually aggravated by high-fat foods associated with dyspnea. Coughing for 20 days with intermittent coughing in the first week was unproductive, but after a week, the cough had become productive. On admission, vital signs were recorded as unstable. Non-contrast thoracic CT and abdominal CT had shown moderate bilateral effusion and passive atelectasis, and clustered homogeneous enhanced soft tissue lesions in the mid-abdomen clinically appeared as lymphomas. In the emergency department, a bilateral chest tube is inserted. Left and right drainage were 2000 ml and 1500 ml, respectively. Fine Needle Aspiration (FNA) was used to biopsy palpable inguinal lymph nodes, and its cytomorphological findings correlated with non-Hodgkin lymphoma and chemotherapy is started. Chylothorax should be suspected in patients with lymphoma who arrive with a bilateral pleural effusion, and pleural fluid TG levels should be tested. Bilateral chylothorax in lymphoma is an exceptionally unusual manifestation. If the chylothorax is bilateral, traumatic rupture is a less likely etiology, in such circumstances, a lymph node biopsy should be recommended.

## Introduction

When lymphatic fluid enters the thoracic duct and accumulates in the pleural space, this is referred to as chylothorax. Trauma, malignancy, and thoracic duct surgery are all common causes of chylothorax. Bilateral chylothorax due to Chronic Lymphocytic Leukemia (CLL) has been published rarely in the literature [1]. Lymphoma accounts for around 70% of cases due to malignancy [2]. The bilateral chylothorax caused by lymphoma has been rarely reported in the literature [1]. The incidence of chylothorax has been reported in as many as 3% of cases of pleural effusions, and mortality has been reported in as many as 10% [3,4]. Bilateral chylothorax is a rare case that is important to report [5]. The mechanism of a chylous leak in patients with lymphoma is uncertain but is thought to result predominantly from reflux or rupture of distended lymphatic tributaries because of back pressure from neoplastic obstruction or actual erosion of the duct itself (2/3).

## Case Presentation

A 49-year-old Somali woman complained of chest pain for two weeks, which was gradually aggravated by high-fat foods associated with dyspnea. She coughed for 20 days with intermittent coughing, which in the first week was unproductive, but after a week the cough had become productive and had a bad odor aggravated with cold weather, she also had an intermittent fever, and she has a history of previous hospitalization for chest pain but no diagnosis was given. The patient has no history of hypertension, diabetes, or asthma. On admission, vital signs were recorded

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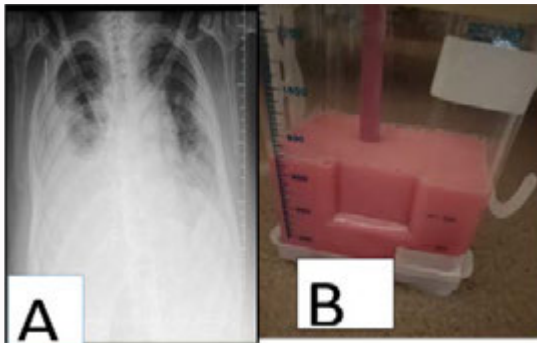
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**Figure 1:** Abdominal CT with contrast showing clustered homogeneous enhanced soft tissue lesions in the mid-abdomen at the paraaortic, retro aortic regions.



**Figure 2:** Chest X-ray showing bilateral pleural effusion more dominant on the right side before drainage (A), chylothorax appeared as milkshake-like in the patient's pleural fluid (B).

as Heart Rate (HR) of 120/min, a Respiratory Rate (RR) of 28/min with a nasal cannula of 3 L/min (SO<sub>2</sub> of 90%), and a blood pressure of 100/60. Thorax examination showed bilateral symmetric unexpanded lung, decreased vocal fremitus, dim percussion, and low vesicular sound, and also inguinal lymph nodes were palpable. Pleural fluid laboratory showed LDH 200 mg/dl cholesterol 44 mg/dl, triglyceride 309 mg/dl, white blood cell counts of 7.5 × 10<sup>9</sup>/μL, C-reactive protein of 197.31 mg/dL. Non-contrast thoracic CT shows massive bilateral effusion and passive atelectasis while abdominal non-contrast CT also shows clustered homogeneous enhanced soft tissue lesions in the mid-abdomen at the paraaortic, retro aortic, peripancreatic, anterior paravertebral extending and involving up to the pelvic region both iliopsoas and bilateral iliac chains more prominently on the left. In the emergency department, a bilateral chest tube inserted left and right drainage was 2000 ml and 1500 ml respectively with a milky white appearance. In addition, when cultured on pleural fluid, no bacteria growth was found. Fine Needle Aspiration (FNA) was used to biopsy palpable inguinal lymph nodes, and its cytomorphological findings correlated with non-Hodgkin lymphoma. The patient received oxygen therapy of 3 L/min (nasal cannula), Furosemide of 40 mg/12 h, moxifloxacin 400 mg for every 8 h, tramadol 100 mg for every 8 h, and Ventolin inhaler 2.5 mg by nebulizer for every 6 h and close monitoring was applied, also patient was under parenteral nutrition especially Total Parenteral Nutrition (TPN) and nil per os (NPO) for 2 weeks. For a week of daily average drainage of 200 ml for both sides we applied sterile talc powder (1 gram) mixed with 50 cc of serum of sodium chloride and slowly infused *via* a chest tube after 2 h of the clumped the tube was opened and flow up showed drainage was reduced for two weeks on both sides. Since our hospital lacks an

**Table 1:** Biochemistry of pleural effusion (chylothorax sampling).

Examination Name	Conclusion	Durum	Unit	The reference range	Explanation
LDH (in pleural fluid)	200		-	-	
Cholesterol (in pleural fluid)	44		-	-	
Amylase (in pleural fluid)	15.515594		-	-	
Triglyceride (in pleural fluid)	309		-	-	

oncology center, chemotherapy was suggested as the only treatment available and sent to another cancer center (Figure 1, 2 and Table 1).

## Discussion

The clinical characteristics of a chylothorax are determined by the degree of lymph fluid leakage and the symptoms of the etiologic origin. In general, chylothorax symptoms are similar to those of pleural effusion, but because the released fluid is lymph fluid, which contains fat, protein, minerals, and vitamins, malnutrition and electrolytes problems can occur. Suppression of immunity can occur as a result of the depletion of immunoglobulin's, T lymphocytes, and proteins, as well as lymph fluid escapes in the pleural cavity [1,6]. Shortness of breath, a dry cough, and chest tightness are common clinical signs. Since lymph fluid does not produce pleural inflammation, chylothorax rarely causes fever and chest pain [7,8] change. In our case, she had symptoms of difficult breathing, a dry cough, chest pain, and a fever similar to the above ones. According to Talwar and Lee 1, the most prevalent causes of chylothorax are neoplasms, thoracic surgery, and direct trauma. As the majority of the duct lies in the right hemithorax, chylothorax most often occur on the right side, and bilateral is uncommon in general [9]. According to our current case, she has bilateral chylothorax, and it is the first case reported from Somalia. Lymphoma is the most frequently implicated malignancy and is responsible for 80% of malignancy associated chylothorax [10]. Chylothorax is an uncommon and poorly defined complication of Non-Hodgkin's and Hodgkin's lymphomas of any histological type or grade. Hodgkin's lymphoma without any subtype specification is responsible for 1.4% of chylothorax [11]. This literature supports our case scenario as the cause is lymphoma, especially the non-Hodgkin subtype [12].

## Conclusion

Chylothorax should be suspected in patients with lymphoma who arrive with a new pleural effusion, and pleural fluid TG levels should be tested. Bilateral chylothorax in lymphoma is an exceptionally unusual manifestation. If the chylothorax is bilateral, traumatic rupture is a less likely etiology. In such circumstances, a lymph node biopsy should be recommended.

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