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CASE REPORT **OPEN ACCESS**

A RARE CASE OF NON HODGKIN LYMPHOMA PRESENTING AS CHYLOUS ASCITES

Dr Rahul Yadav[1], Dr Sunita Aggarwal[2], Dr Pradeep Kumar[3], Dr Abhishek Verma[3], Dr Kamal Garg[3], Dr Soumia M[1]

[1]MBBS, Postgraduate Medicine Resident, Maulana Azad Medical College, Delhi University, India
[2]MBBS, MD (MEDICINE), FRCP, FACP, FICP, FIMSA, FIACM, Maulana Azad Medical College, Delhi University, India
[3]MBBS, MD (MEDICINE), Maulana Azad Medical College, Delhi University, India

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***Corresponding Author**
Dr Rahul Yadav
MBBS, Postgraduate Medicine Resident, Maulana Azad Medical College, Delhi University, India

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A B S T R A C T

Background: NHL typically presents with painless variable lymphadenopathy or mass, constitutional symptoms of fever, night sweats and weight loss. Ascites in a patient of NHL is an atypical presentation, Chylous ascites being a extremely rare presentation (1:20,000) resulting from leakage of lipid rich lymph in peritoneal cavity.
Presentation: A 52 year old female presented with complaints of gradually progressive abdominal distension associated with abdominal pain. Bladder bowel habits were normal. No history of fever, swelling anywhere else in the body or trauma. On examination abdomen was distended and shifting dullness was present. Ascitic fluid analysis revealed milky white fluid with 7600 cells with all lymphocytes, triglyceride level of 1243mg/dland positive for sudan IV stain. Other biochemical parameters were normal. Abdominal ultrasound revealed gross ascites with multiple enlarged retroperitoneal lymphnodes. CECT abdomen was done which revealed well defined multilobulated mass of 5.2x10x8.9cm in retroperitonem encasing abdominal aorta with multiple enlarged retroperitoneal, mesentric, left external iliac, bilateral inguinal lymphnodes with moderate ascites. Laparoscopic guided diagnostic FNAC of retroperitoneal Lymph node was done which revealed B cell Non hodgkin lymphoma. After appropriate staging(Ann arbor stage III) and risk stratification, the patient was counselled for chemotherapy(RCHOP regimen). After 6 cycles of chemotherapy , patient showed marked clinical improvement and repeat CECT-chest and abdomen showed significant reduction in lymphadenopathy and ascites.
Conclusion: In a patient presenting with chylous ascites , the absence of a traumatic history warrants a prudent consideration for malignancy.

Keywords: Chylous ascites, Ascites, Non Hodgkin Lymphoma, Lymphoma , India .

INTRODUCTION

Non Hodgkin Lymphoma (NHL) most often presents with painless lymphadenopathy, fever, night sweats and weight loss. However, the presentation of NHL with chylous ascites in the absence of palpable lymphadenopathy is rare. The incidence of chylous ascites has been estimated at 1 in 20,000 to 1 in 187,000 hospital admissions at tertiary care centres [1,2].

Chylous ascites is a rare form of ascites characterised by the accumulation of lipid-rich lymph in the peritoneal cavity. It is typically identified by a milky white appearance of ascitic fluid and a triglyceride concentration exceeding 200 mg/dL. This condition results from the disruption or obstruction of the lymphatic system, which may be secondary to trauma or obstruction.

CASE PRESENTATION

A 52-year-old postmenopausal female presented with a two-month history of gradually progressive abdominal distension. The distension was not associated with abdominal pain, difficulty with defecation or urination. There were no complaints of loss of appetite, weight loss, yellowish discolouration of eyes, black tarry stools , blood in vomitus, altered sleep patterns. Her past history was unremarkable, with no prior abdominal surgeries or trauma. On general physical examination, her vital signs were stable and the body mass index (BMI) was 22.8 kg/m². There were no palpable lymph nodes in cervical region, axillary region and inguinal region. Abdominal examination revealed uniform distension with the presence of fluid thrill but absence of shifting dullness. No hepatomegaly or splenomegaly was seen on clinical examination. Rest of systemic examination was otherwise unremarkable.

Laboratory investigations revealed a mild anemia ,normal liver function test and renal function test .HIV serology , HbsAg , Anti HCV Ab was non-reactive. Serum amylase and lipase levels were normal (Table 1). Ascitic tap was done which revealed a milky white appearance (Figure 1), which remained cloudy even after centrifugation(Figure 2). Analysis of ascitic fluid revealed lymphocytic predominant leucocytosis with low SAAG ascites .No organisms were seen on Gram stain and culture was sterile. Ziehl Neelsen staining was negative for acid-fast bacilli. The triglyceride level in ascitic fluid was elevated at 1243 mg/dL. Sudan IV stain was positive, confirming the presence of fat globules. Cytological analysis of ascitic fluid was negative for malignancy(Table 2).

Abdominal ultrasound revealed mild hepatomegaly with grade 1 fatty liver and gross ascites with multiple enlarged retroperitoneal lymph nodes. Contrast-enhanced computed tomography (CECT) of the abdomen showed a large, well-defined, multilobulated retroperitoneal mass measuring 10 × 8.9 × 5.2 cm extending from D12 to L4, encasing the abdominal aorta and its branches. Multiple enlarged retroperitoneal, mesenteric, left external iliac and bilateral inguinal lymph nodes were noted, along with moderate ascites(Figure 3).

A laparoscopic-guided biopsy of the retroperitoneal lymph node was performed, its histopathology demonstrated diffuse effacement of lymph node architecture with obliteration of the subcapsular sinus by sheets of atypical lymphoid cells (Figure 4) . Immunohistochemistry revealed these cells to be positive for CD20 and negative for CD3 and CD5, confirming the diagnosis of B-cell non-Hodgkin lymphoma (Figure 5). For staging purposes, a bone marrow aspiration and a whole-body PET scan were performed. The bone marrow aspirate showed no evidence of lymphoma infiltration (Figure 6). The 18 FDG - PET scan revealed FDG avid lymphadenopathy on both sides of the diaphragm including right cervical, left supraclavicular, precarinal, left hilar, peripancreatic, paraaortic, aortocaval, mesentric, retroperitoneal, bilateral renal hilar, bilateral common iliac and bilateral inguinal lynph nodes. There were no abnormal uptake in the liver, spleen, pancreas, kidneys or adrenal glands (Figure 7). The disease was staged as Ann Arbor Stage III.

After appropriate risk stratification , the patient was counselled and initiated on chemotherapy with the R-CHOP regimen. Therapeutic paracentesis was also done to manage the chylous ascites. After six cycles of chemotherapy, the patient demonstrated significant clinical improvement. A repeat CECT of the abdomen showed a marked reduction in lymphadenopathy and resolution of ascites.

Table 1: Blood investigations

Investigation	Report	Normal value
CBC		
Hemoglobin	9.4 g/dl	12 – 15 mg/dl
TLC	7500/mcL	4000 – 11000 / mcL
DLC	N86L8	
Platelets	3.76lac/mcL	1.5-4.5 lac/mcL
KFT		
Urea	30mg/dl	19-43 mg/dl
Creatinine	1mg/dl	0.52 – 1.04 mg/dl
LFT		
Total Bilirubin	0.5mg/dl	0.2-1.3 mg/dl
Direct Bilirubin	0.48mg/dl	0 – 0.3 mg/dl
AST	45U/L	14-36 IU/L
ALT	30U/L	5-35 IU/L
ALP	74U/L	50-117 IU/L
Total protein	7.6 g/dl	6.3-8.2 g/dl
Serum Albumin	4.4 g/dl	3.5-5 g/dl

LDH	205 IU/L	120-246 IU/L
Uric acid	5.8 mg/dl	2.5-6.2 mg/dl
INR	1.15	0.8 – 1.2
Amylase	40 IU/L	30-110 IU/L
Lipase	32 IU/L	23-300 IU/L
HIV 1 & 2	Non Reactive	Non Reactive
HbsAg	Non Reactive	Non Reactive
Anti HCV Ab	Non Reactive	Non Reactive

Table 2 : Ascitic fluid analysis

Investigation	Report
TLC	7600
DLC	All lymphocytes
Sugar	185mg/dl
Protein	5.8 gm/dl
SAAG	0.8. gm/dl
ADA	15 U/L
Gram stain	No organism / No pus cells
Culture	No growth
ZN stain	No AFB seen
Cytology	No malignant cells
Sudan IV stain	Positive
Triglycerides	1243mg/dl

Figure 1 – Gross – Milky white ascites

Pre centrifugation Post centrifugation

Figure 2 – Ascitic fluid is cloudy even after centrifugation

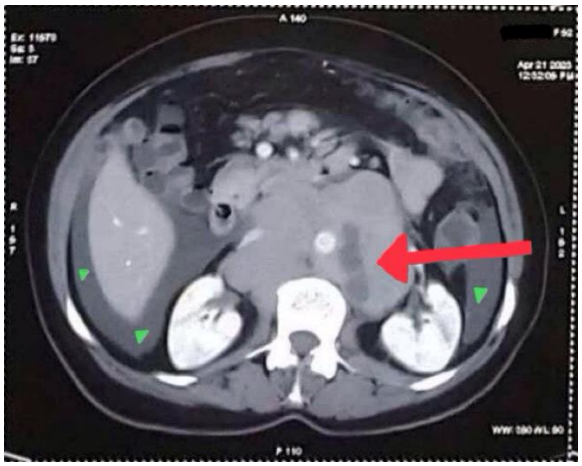

Figure 3 – CECT abdomen - Red arrow-well defined multilobulated mass 10x8.9x5.2cm at D12 to L4 level in retroperitoneum encasing abdominal aorta and branches. Green arrow head – Ascites

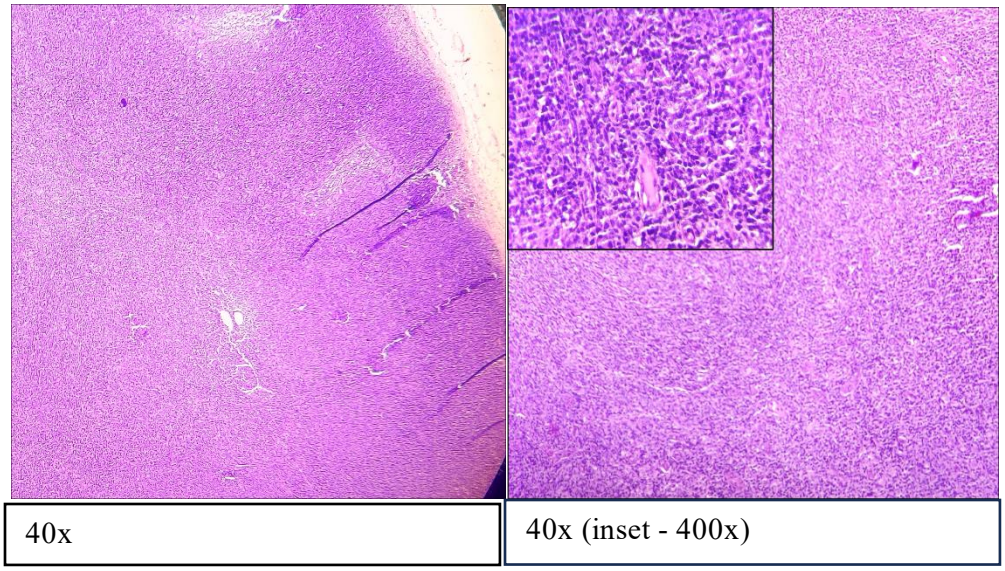

Figure 4 – H&E stain - Diffuse effacement of lymph node architecture with obliteration of the subcapsular sinus by sheets of atypical lymphoid cells

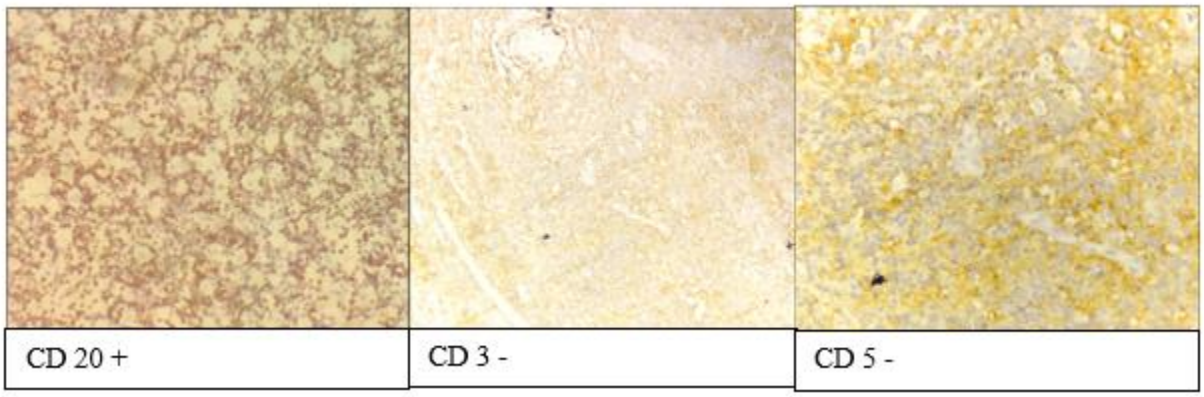

Figure 5 – Immunohistochemistry on tissue section 400x– positive for CD 20 and negative for CD 3 and CD 5.

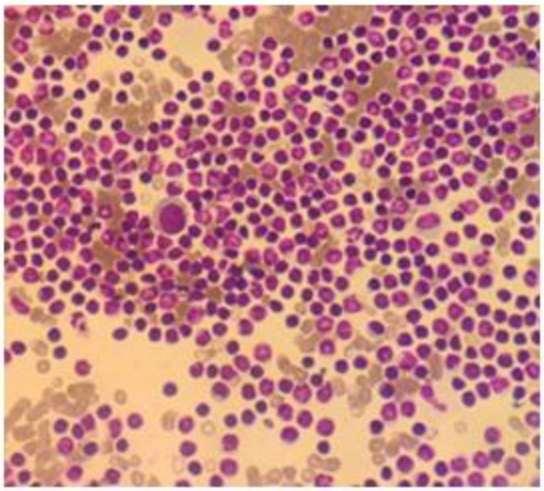

Figure 6 – Bone marrow aspirate, Giemsa stain 400x - Hypocellular marrow with trileneage hematopoiesis

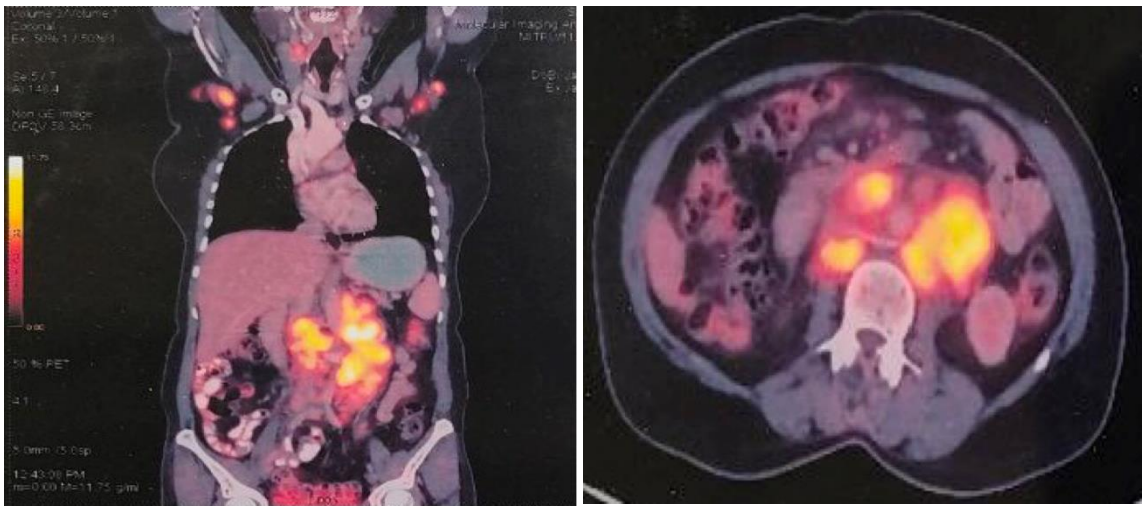

Figure 7- 18 FDG – PET CT scan- FDG avid lymphadenopathy on both sides of the diaphragm with no abnormal uptake in the liver, spleen, pancreas, kidneys or adrenal glands.

DISCUSSION

NHL most often presents with painless lymphadenopathy, fever, night sweats and weight loss. However, the presentation of NHL with chylous ascites in the absence of palpable lymphadenopathy, as in this case, is exceedingly rare. The incidence of chylous ascites has been estimated at 1 in 20,000 to 1 in 187,000 hospital admissions at tertiary care centres[1,2].

Milky white ascitic fluid with triglyceride level of >200 mg/dl is called chylous ascites. Accumulation of lipid rich lymph in peritoneal cavity due to disruption of lymphatic system secondary to trauma or obstruction. Cause of chylous ascites secondary to surgery or trauma is familiar to most clinicians. As per systematic review done by Steinmann et al.[3] the most common atraumatic causes of chylous ascites in adults include malignancies (25%), cirrhosis (16%), mycobacterial infections (15%), lymphatic anomalies (8%) and lymphangioleiomyomatosis (8%). Among malignancies, lymphoma accounts for 8% of cases. Other reported neoplastic causes include solid tumors (10%), carcinoid tumors (4%), sarcomas (2%), and leukemias (1%) (Table 3).

It is important to differentiate chylous ascites from pseudochylous ascites and chyliform ascites, as all three can present with a milky white appearance. Chylous ascites is distinguished by its high triglyceride content, whereas pseudochylous ascites contains cholesterol and cellular debris, often due to chronic inflammation. Chyliform ascites appears milky due to lecithin-globulin complexes or cellular breakdown products. Laboratory analysis, including triglyceride levels and fat stains such as Sudan IV, is essential for accurate diagnosis.[4]

Management of chylous ascites requires a multifaceted approach. The primary goal is to treat the underlying cause. Nutritional modifications, such as a fat-free diet supplemented with medium-chain triglycerides (MCTs), are often recommended. When oral intake is inadequate, total parenteral nutrition (TPN) may be considered. Pharmacologic options such as orlistat and somatostatin analogs like octreotide have shown benefit in reducing lymphatic flow. Repeated therapeutic paracentesis may be necessary for symptom relief. Additionally, strategies such as dietary control and lymphatic embolization may be considered in refractory cases.[5]

Despite treatment, the prognosis remains poor, with mortality ranging from 40% to 70%, depending on the underlying etiology.[3]

Table 3 : Distribution of causes of atraumatic chylous ascites in adults[3]

Malignancy	25%
Solid organ cancer	10%
Lymphoma	8%
Carcinoid	4%
Sarcoma	2%
Leukemia	1%
Cirrhosis	16%
Mycobacteria infection	15%
Lymphatic anomalies	8%
Lymphangioleiomyomatosis	8%
Pancreatitis	6%

CONCLUSION

In a patient presenting with chylous ascites, the absence of a traumatic history warrants a prudent consideration for malignancy. This case highlights an unusual presentation of B-cell non-Hodgkin lymphoma manifesting primarily as chylous ascites, underscoring the importance of a thorough diagnostic workup in similar scenarios.

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ABBREVIATIONS:

1. ADA – Adenosine Deaminase
2. ALP – Alkaline Phosphatase
3. ALT – Alanine Aminotransferase
4. Anti HCV Ab – Anti-Hepatitis C Virus Antibody
5. AST – Aspartate Aminotransferase
6. BMI – Body Mass Index
7. CBC – Complete Blood Count
8. CD – Cluster of Differentiation
9. CECT – Contrast-Enhanced Computed Tomography
10. DLC – Differential Leukocyte Count
11. FDG PET – Fluorodeoxyglucose Positron Emission Tomography
12. FNAC – Fine Needle Aspiration Cytology
13. H and E stain – Hematoxylin and Eosin Stain
14. HBsAg – Hepatitis B Surface Antigen
15. HIV – Human Immunodeficiency Virus
16. INR – International Normalized Ratio
17. KFT – Kidney Function Test
18. LDH – Lactate Dehydrogenase
19. LFT – Liver Function Test
20. NHL – Non-Hodgkin Lymphoma
21. RCHOP – Rituximab, Cyclophosphamide, Doxorubicin, Vincristine (Oncovin) and Prednisolone
22. SAAG – Serum-Ascites Albumin Gradient
23. TLC – Total Leukocyte Count
24. ZN stain – Ziehl-Neelsen Stain

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