

Introduction

- Chylous ascites is a rare condition (<1% of ascites cases) that results from the leakage of lipid-rich lymph into the abdominal cavity.¹
- Ascitic fluid analysis reveals a triglyceride level greater than 200 mg/dL, which gives it its characteristic opaque, 'milky' appearance.²
- Its etiology can vary, but chylous ascites typically occurs due to trauma and rupture of the lymphatics, or increased peritoneal lymphatic pressure secondary to obstruction. Malignancy is considered a common cause, however, cases in the setting of follicular lymphoma are rare.
- Given that chylous ascites contains nutrients and immunoglobulins, which get depleted as they accumulate in the peritoneal cavity, it can lead to dehydration, electrolyte imbalances, malnutrition, and immunosuppression.
- There are limited therapeutic options for chylous ascites, making treatment of the underlying cause and measures to improve comfort and reduce recurrence among the cornerstones in management.³

Case Presentation

- A 65-year-old female with a history of varicose veins and lower extremity edema presented to the ED with right upper abdominal and back pain.
- CT imaging demonstrated a large retroperitoneal mass 8 x 13 cm in size and scattered mesenteric and retroperitoneal lymphadenopathy (Fig. 1A). A mesenteric lymph node biopsy revealed grade 1-2 follicular lymphoma.
- The patient presented to our outpatient oncology office one week later, by which time she endorsed abdominal distension. She had a protuberant abdomen on exam. A staging PET-CT scan showed findings consistent with stage III lymphoma, including the retroperitoneal mass, which was mildly FDG avid (Fig. 1B), and revealed the presence of ascites (Fig. 2A).
- Began induction rituximab for lymphoma treatment (four weekly infusions).
- She underwent a paracentesis, in which 3.1 L of opaque, 'milky' fluid was removed (Fig. 2B). Fluid analysis revealed an elevated triglyceride concentration (3,753 mg/dL) and WBC count (647 cells/mm³), confirming chylous ascites. Patient began weekly therapeutic paracenteses and a low-fat, high-protein diet for management.
- PET-CT scan one month after completion of induction rituximab showed complete metabolic response to therapy. Additional findings included continued moderate ascites as well as a new pleural effusion (Fig. 3A-B).
- Patient started maintenance rituximab (infusions every two months).
- Lymphatic evaluation was deferred until after completion of maintenance treatment. Patient stopped paracenteses and a Denver shunt was placed.
- Patient began experiencing dyspnea and an X-ray chest showed continued pleural effusion (Fig. 3A-B). She underwent a thoracentesis, in which 1 L of fluid was drained. Fluid analysis revealed an elevated triglyceride concentration (1,857 mg/dL), confirming chylous pleural effusions.
- After four months of maintenance rituximab, ascites and the associated symptoms had resolved and the Denver shunt was removed.
- PET-CT scan after four infusions of maintenance treatment showed complete metabolic response. Persistent effusions seen but no ascites.
- Continues thoracenteses with plan for pleurodesis if effusions persist.

Clinical Presentation

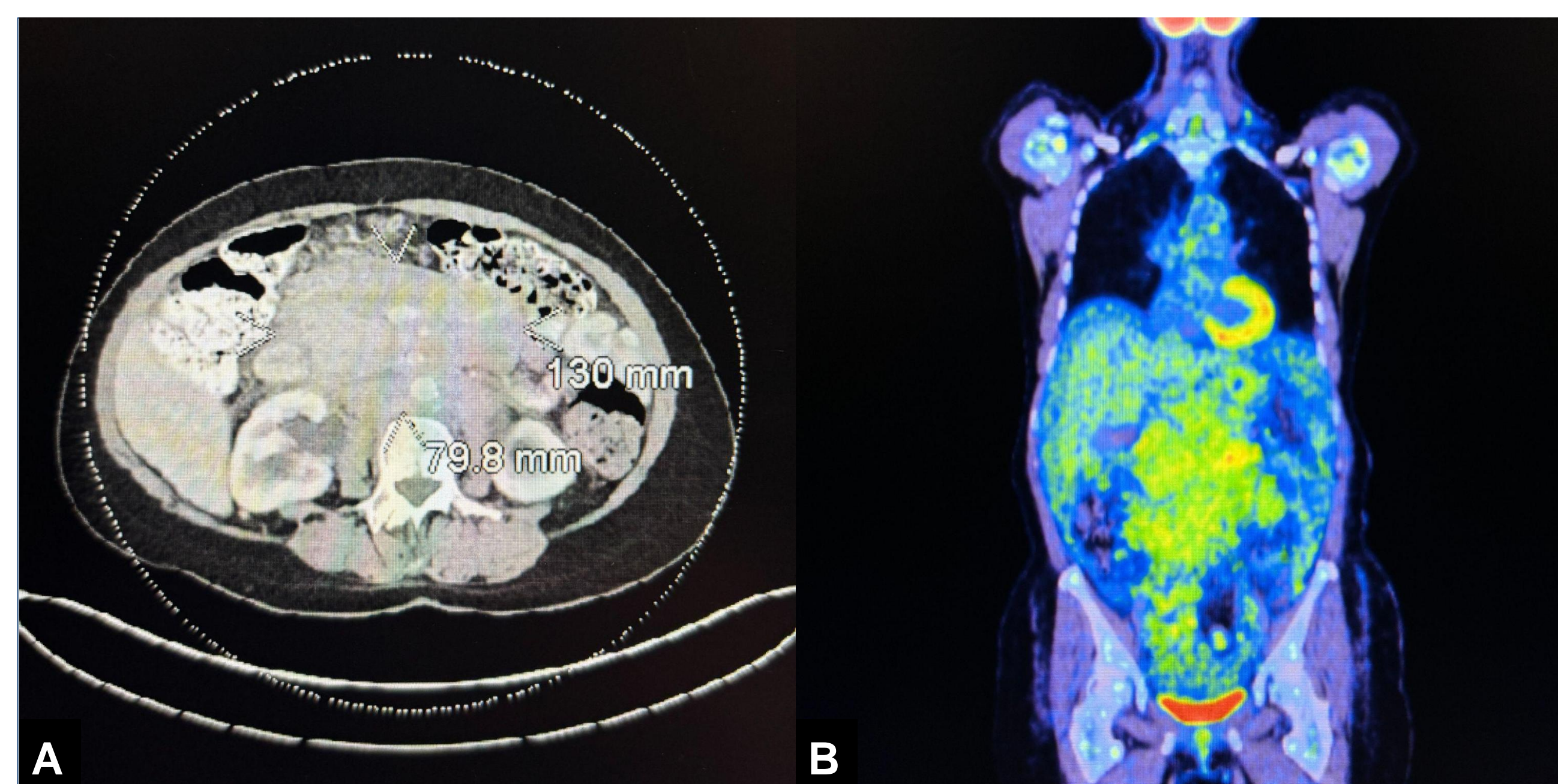


Figure 1. Follicular lymphoma. (A) CT imaging demonstrated a large (8 x 13 cm) retroperitoneal mass. (B) PET imaging revealed FDG avid abdominal adenopathy.

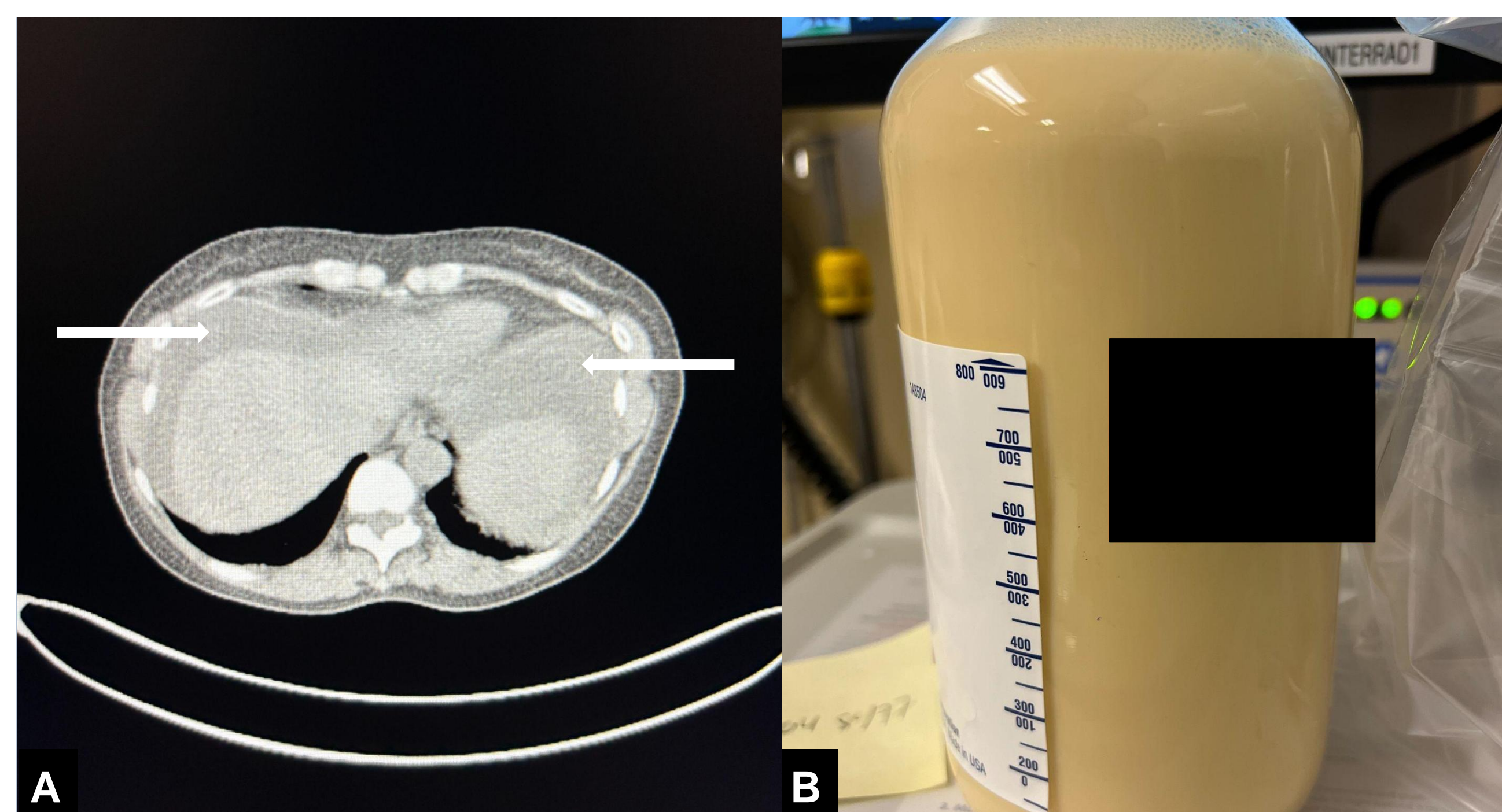


Figure 2. Chylous ascites. (A) CT imaging showed the presence of ascites (arrows). (B) Paracentesis removed 3.1 L of the opaque, 'milky' ascites that labs confirmed to be chylous.

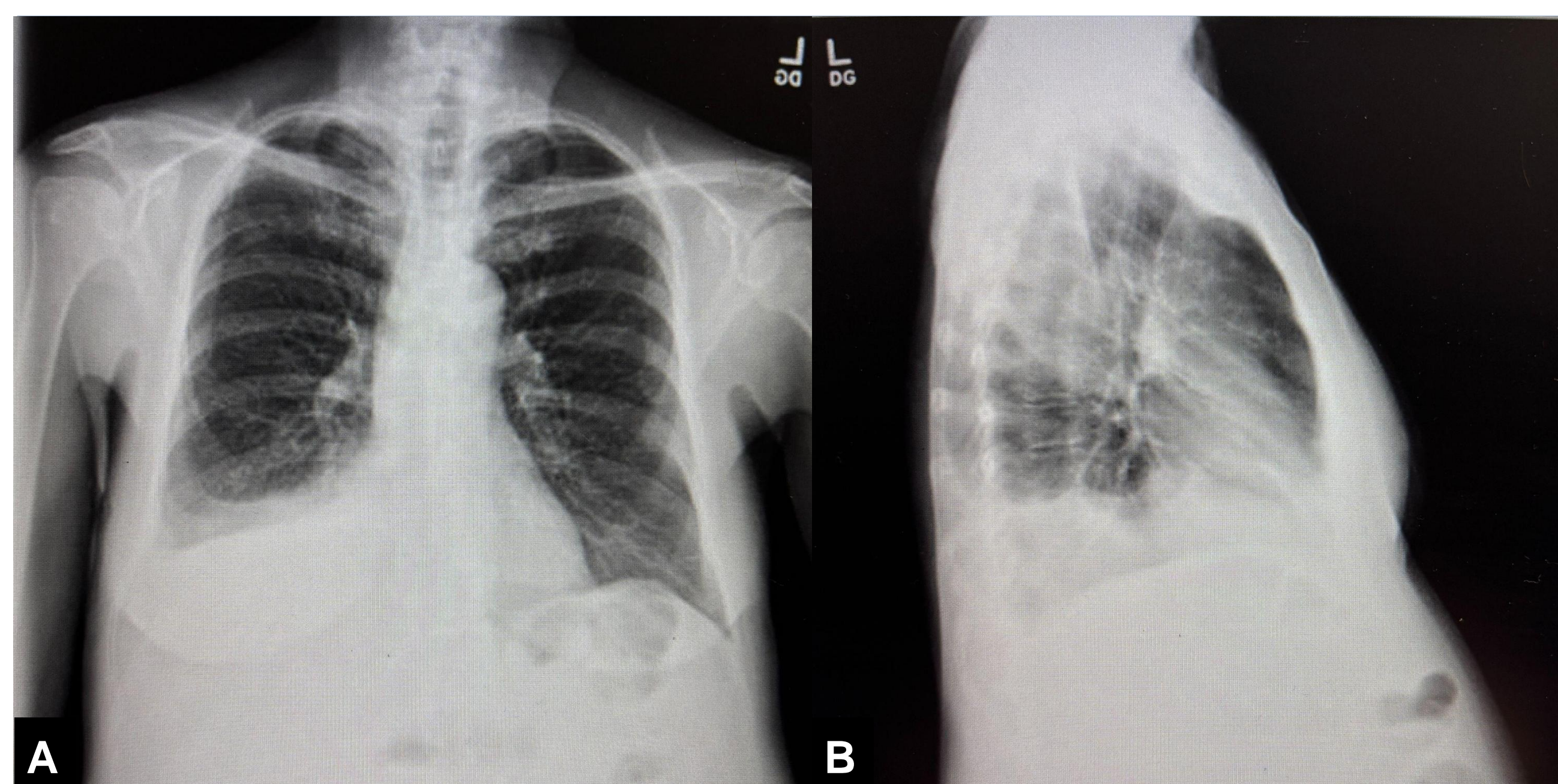


Figure 3. Chylous pleural effusions. (A) Posteroanterior view of chest X-ray showing moderate right pleural effusion. (B) Lateral view of the same chest X-ray showing moderate pleural effusion.

Workup

- SAAG < 1.1 g/dL, suggesting that the chylous ascites was not due to portal hypertension. Patient with no risk factors for liver disease. LFTs were normal (AST 17 IU/L, ALT 7 IU/L, alkaline phosphatase 47 IU/L, and total bilirubin 0.6 mg/dL), and CT imaging was negative for cirrhosis. Hepatic cause was deemed unlikely.
- Cytology of the ascites was negative for malignant cells and flow cytometry showed no overt evidence of a hematolymphoid neoplasm.
- Further ascites workup / lymphatic evaluation was deferred until after completion of treatment with maintenance rituximab. However, the ascites resolved prior to completion of treatment.
- Flow cytometry of the chylous pleural effusion also showed no overt evidence of a hematolymphoid neoplasm. No further workup has been performed at this time.

Discussion and Conclusion

- The etiology of the patient's chylous ascites is not definitive. The follicular lymphoma itself disrupting lymphatic flow and leading to accumulation of chylous fluid in the abdominal cavity is one possibility. Although rare, cases of chylous ascites in the setting of follicular lymphoma have been reported.⁴⁻⁵ While cytology and flow cytometry of the ascites were negative for malignancy, this does not rule out lymphoma as the cause because false negatives can occur and because flow cytometry was not performed on ascites until after induction rituximab was completed. Trauma from the mesenteric lymph node biopsy is another possible cause, particularly given that the onset of the ascites occurred within a week of the biopsy being performed.
- The etiology of the chylous pleural effusions is also unknown. The ascites tracking through the diaphragm into the pleural space is one possible cause. Thoracic duct injury due to the large retroperitoneal mass is another.
- Regardless of the cause, this case is valuable as it discusses the rare presentation of chylous ascites and underscores interventions (low-fat, high-protein diet; therapeutic paracenteses; and placement of a Denver shunt) necessary for its management in the setting of lymphoma and for improving the quality of life of a patient undergoing lymphoma treatment.

References

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