White Water Rafting:
Navigating the Lymph Rapids

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Introduction

▪ Chylous ascites is a rare form of ascites characterized by lymph accumulation in the peritoneal cavity.[1,2]

▪ Although typically responsive to conservative therapy, refractory cases are difficult to manage and burdensome to affected patients.

Case Presentation

HPI:

▪ A 75-year-old male underwent left-sided radical nephrectomy with regional lymphadenectomy for metastatic renal cell carcinoma.

▪ Three weeks later, he presented with anasarca, acute renal failure, and ascites complicated by hypoxemic respiratory failure. On admission, he reported severe diffuse abdominal pain and distension.

Past Medical History:

▪ T2N1M0 renal cell carcinoma
▪ Type 2 Diabetes Mellitus
▪ Chronic Kidney Disease, Stage III

Past Surgical History:

▪ Left-sided radical nephrectomy with regional lymphadenectomy

Vitals/Exam:

▪ Afebrile, HR 78, BP 113/69, RR 21, SpO2 99% 2L NC.
▪ Obese elderly white male, no acute distress, anasarcic, tense distended abdomen with positive fluid wave

Labs: Initial paracentesis confirmed milky ascites with triglycerides >800 mg/dL. Additional chemistries noted Na=130 mmol/L, BUN=85 mg/dL, and serum creatinine=3.5 mg/dL.

Hospital Course and Clinical Follow-Up

▪ A high-protein, low fat diet permitting medium chain triglycerides and adjunctive octreotide 150 mg IV every 8 hours were initiated. Rapid accumulation of chylous ascites persisted.

▪ Serial large volume paracenteses were required every 2-4 days for symptomatic relief. Multiple episodes of suspected SBP were empirically treated.

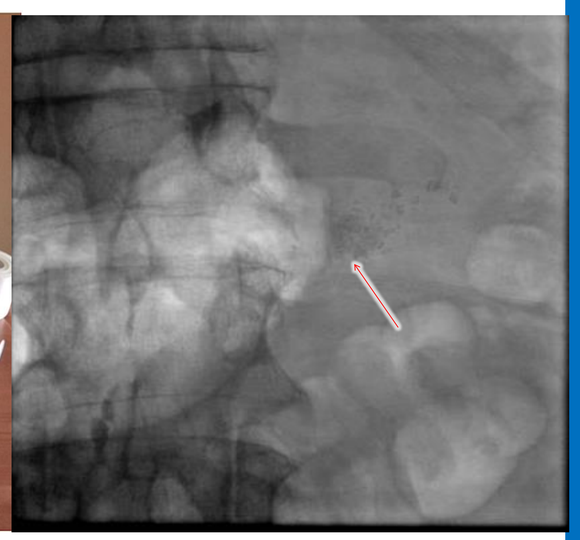
▪ Subsequent lymphangiography demonstrated a 2 mm chylous leak at L3. Interventional radiology unsuccessfully attempted CT-guided lymphatic glue embolization twice.

▪ An eight-week trial of absolute fasting with total parenteral nutrition (TPN) was recommended and attempted prior to considering surgical exploration.

▪ After an eight-week fasting trial failed, urology performed robotic laparoscopic exploratory laparotomy and chylous leak repair. Multiple chylous leaks were ligated with a 90% reduction in flow.

▪ Subsequent abdominal ultrasounds revealed trace ascites. Our patient returned to enteral feeding with TPN calorie supplementation prior to discharge to a long-term acute care hospital two weeks later.

Triglyceride-rich “milky-appearing” chylous ascites



Lymphangiography demonstrating leakage of lipodiol contrast (arrow) at the L3 level confirming the chylous leak

Discussion

▪ Clinical manifestations of chylous ascites range from abdominal pain to malnutrition and immunologic deficits.[1]

▪ A paracentesis demonstrating triglyceride-rich milky-appearing ascites is diagnostic.

▪ Lymphangiography often (up to 86% of the time) confirms the source and severity of a chylous leak.[1]

▪ Chylous ascites is **most commonly due to malignancy or cirrhosis in adults.** Other causes include congenital anomalies, trauma, infections, inflammatory conditions, and **iatrogenic injury** from AAA repairs and **oncologic abdominal surgeries.**[1,2]

Teaching Points

▪ **Most lymphatic leaks seal spontaneously** if a low-flow state is present. Conservative therapies aim to reduce lymphatic flow.[2]

▪ A **high-protein, low-fat die**t allowing medium chain triglycerides is **first-line therapy**.[1]

▪**Intravenous octreotide** and **absolute fasting with TPN for 4-12 weeks** are second-line therapies**.**[1]

▪ Refractory cases may call for more invasive therapies including **lymphatic duct glue** or **coil embolization, external beam radiation therapy, or surgical repair.**

References

1. Kim J, Won JH. Percutaneous Treatment of Chylous Ascites. Techniques in Vascular and Interventional Radiology. December 2016. 19 (4): 291-8

2. Lizaola B, Bonder A, Trivedi HD, et al. Review article: the diagnostic approach and current management of chylous ascites. Alimentary Pharmacology & Therapeutics. September 2017. doi: 10.1111/apt.14284. Epub Ahead of Print.