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Unusual Unveiling: Hodgkin's Lymphoma Manifesting as Chylous Ascites

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Abstract **Case Report**

Chylous ascites, an infrequent manifestation of ascites characterized by a triglyceride-rich milky fluid, is associated with lymphatic system disruption resulting from obstruction or post-traumatic injury. It is an unusual complication of lymphomas, which nonetheless represent the primary cause in adults in developed countries, often due to abdominal lymphatic obstruction. We present the case of a 71-year-old woman who presented with abdominal distension attributed to chylous ascites, ultimately revealing non-Hodgkin lymphoma. Palpable peripheral lymph nodes and enlarged lombo-aortic lymph nodes on abdominal CT scans indicated the diagnosis of stage IV centrofollicular non-Hodgkin lymphoma (Ann Arbor classification). The chylous ascites resolved with chemotherapy treatment.

Keywords: Chylous Ascites, Lymphoma, Centrofollicular Non-Hodgkin Lymphoma, Ascites, Chemotherapy.

INTRODUCTION

Chylous ascites is a rare form of ascites resulting from an accumulation of lymph in the abdominal cavity. It is due to an interruption in the lymphatic system. The diagnosis is established when the concentration of triglycerides in the ascitic fluid is >2 g/l [1]. The reported incidence is approximately 1 per 20,000 admissions at a large university-based hospital over a two-decade period [2]. The incidence has increased, probably due to the longer survival times of patients with cancer and more aggressive abdominal and cardiothoracic interventions [3, 4], as well as laparoscopic surgery and transplantation [5, 6].

We present a case where the presence of chylous ascites signaled the occurrence of non-Hodgkin lymphoma in the patient.

CASE REPORT

A 71-year-old woman was admitted to the hospital due to the onset of ascites four weeks before admission. She had no notable medical history. Her overall health was acceptable, with a weight loss of 4 kg, and she did not experience fever or night sweats. The examination revealed moderate ascites, without the presence of hepatomegaly or splenomegaly. A 2 cm right cervical lymph node was discovered, as well as a centimeter-sized left axillary lymph node. The blood test showed anemia at 11.1 g/dl with a mean corpuscular volume of 88 fl and a reticulocyte count of 91,000/mm3, 6,400 leukocytes/mm3 with 54% neutrophils and 38% lymphocytes, and 150,000 platelets per mm3. The erythrocyte sedimentation rate was 70 mm in the first hour. Liver function tests and creatinine were normal. Lactate dehydrogenase levels were at 340 IU/l (normal < 280). Serum protein electrophoresis showed a discreet peak in the gamma-globulin region corresponding to the immunoelectrophoresis of IgM-kappa. C-reactive protein was at 14.5 mg/l (normal < 5), and the serum β-2 microglobulin level was at 6 mg/l (normal 0-1.5). Esophagogastroduodenoscopy was normal. Ascitic fluid analysis revealed milky fluid with 8,700 red blood cells/mm3, 2,100 cells/mm3 (4% neutrophils, 6% lymphocytes, 90% mesothelial cells), 27 g/l of proteins, and 3.3 g/l of triglycerides, while the serum triglyceride level was at 1.1 g/l (normal 0.6-1.6). No abnormal cells (especially normal lymphocytes) or pathogens were detected. Immunophenotyping of circulating lymphocytes revealed a monoclonal population CD19+, CD20+, CD5-, CD10+, kappa+.

Thoracic-abdominopelvic CT scan showed mediastinal lymph nodes measuring 3 to 5 cm in diameter, lombo-aortic and pelvic lymph nodes of 3 to 6 cm in diameter, and thickening of the greater omentum associated with peritoneal effusion (Figure 1). Excision of the cervical lymph node was performed, and

histological examination revealed a nodular infiltrate of small lymphocytes. Immunohistochemical examination showed that these cells expressed CD19, CD20, CD10, bcl2, but did not express CD5 and CD43. The bone marrow biopsy found diffuse infiltration by the same lymphocytes. The diagnosis was centrofollicular non-Hodgkin lymphoma stage IVAb (Ann Arbor classification).

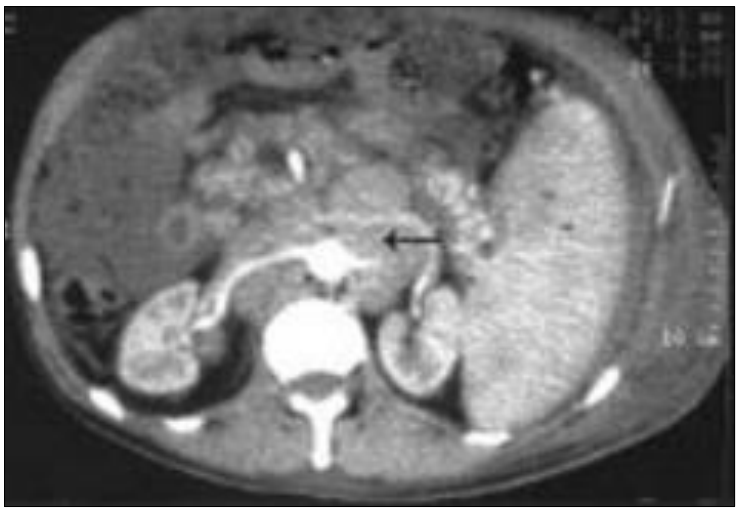

Figure 1: abdominal CT scan showing enlargement of lombo-aortic lymph nodes

Multiple ascitic taps were required for drainage, yet after completing three cycles of chemotherapy that included cyclophosphamide, doxorubicin, teniposide, prednisolone, and interferon-α, the ascites resolved. The patient experienced partial remission, marked by a significant reduction of over 50% in peripheral, mediastinal, lombo-aortic, and pelvic lymph nodes.

DISCUSSION

Chylous ascites is a rare form of ascites characterized by a milky fluid with a triglyceride level exceeding 2 g/l. Its composition is identical to that of the thoracic duct, with a higher triglyceride level than that of plasma [7]. The lymph from the lower part of the body drains into the thoracic duct, which empties into the left jugulo-subclavian confluence [7]. The lymphatic system receives approximately 60% of ingested lipids, and about 2 liters of lymph are emptied into the venous system daily [7].

Chylous ascites is rare, with most cases being isolated, and few series have been reported [2-8]. Its incidence ranges from 1 in 50,000 to 1 in 100,000 hospital admissions. The causes of chylous ascites are numerous, including neoplastic, infectious (tuberculosis, lymphatic filariasis), inflammatory (pancreatitis, constrictive pericarditis, sarcoidosis), postoperative and traumatic (abdominal surgery and trauma), and congenital (primary lymphatic hypoplasia, yellow nail syndrome associating nail alterations, primary lymphedema, and bronchopulmonary manifestations) [9-11]. In underdeveloped countries, infections (tuberculosis and lymphatic filariasis) are the most frequent causes. In Western countries and in adults, the main causes are abdominal neoplasms and liver cirrhosis. Regarding neoplasms, lymphomas, whether non-Hodgkin lymphomas or Hodgkin's disease, are the underlying pathology in 13 to 54% of cases in the largest series. The underlying mechanism is an obstruction to sub-diaphragmatic lymphatic drainage due to lymphomatous infiltration. The treatment of chylous ascites is that of the underlying pathology. In our patient, the ascites disappeared under chemotherapy. Hyperalimentation, a diet low in long-chain triglycerides, or peritoneovenous shunts are ineffective in chylous ascites caused by lymphomas [12]. Evacuative ascitic taps may be useful in cases of abdominal discomfort or dyspnea.

CONCLUSION

The identification of chylous ascites should invariably trigger an investigation for abdominal malignancies, with a special focus on lymphoma, given its association with the obstruction of abdominal lymphatics. The crux of diagnosis lies in histopathological examination and immunohistochemistry. The management of chylous ascites aligns with the treatment protocol for the underlying malignant hematologic disorder.

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