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## Case Report

### Massive Chylous Ascites following Duodenorrhaphy with Omentum Patch

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## Abstract

Chylous ascites is a rare complication of abdominal surgery, but it prolongs the hospitalization and the patient's prognosis. It is the postoperative accumulation of chyle in the peritoneal cavity and look like milky fluid and elevated triglyceride levels in the surgical drains. We present the patient who underwent an emergent surgery for a perforated duodenal ulcer complicated with postsurgical chylous ascites. Only a few studies with the limited data showed how to treat postoperative chylous ascites. The conservative treatment including paracentesis, a medium chain triglyceride (MCT) based diet, total parenteral nutrition (TPN) fasting and so on is recommended. Our patient was successfully treated with fasting, total parenteral nutrition (TPN) and albumin.

**Keywords:** Chylous ascites

## Introduction

The major cause of postoperative chylous ascites is considered to be direct operative trauma to the lymphatic system. Chylous ascites is diagnosed by analysis of the ascitic fluid. The triglyceride level is greater than 110 mg/dL which was found from ascitic fluid is defined chylous ascites [1]. Although the incidence of chylous ascites has increased in recent years, few studies have addressed the best treatment regimens for chylous ascites and no guidelines or principle recommendations exist. It has been reported surgical procedures which associated with chylous ascites include abdominal aortic aneurysm repair, retroperitoneal lymph node dissection, pancreaticoduodenectomy, inferior vena cava resection, catheter implantation for peritoneal dialysis, laparoscopic Nissen fundoplication, distal splenorenal shunts, laparoscopic donor nephrectomy, small bowel and liver transplantation, and laparoscopic Roux-en-Y gastric bypass. Our literature search did not reveal any reports of chylous ascites after duodenorrhaphy with omental patch. We report about an elderly man with a rare complication of chylous ascites after an emergent surgery for a perforated duodenal ulcer.

## Case Report

A 78-year-old man has history of type 2 diabetes mellitus and hypertensive cardiovascular disease in the past. The patient suffered from severe abdominal pain in the morning. Then the patient was sent to our emergency room for help and physical examination revealed diffuse abdominal pain with muscle guarding. The abdominal computed tomography (Figure 1) revealed free air, food, and fluid collection in the peritoneal cavity was noted which highly suspected hollow organ perforation. The patient underwent the emergent laparotomy to evaluate for a hollow organ perforation. A perforated duodenal ulcer was found and duodenorrhaphy with omental patch was performed.

The patient began to feed by nasogastric tube after 5 days of the surgery. The abdominal drain revealed amount of milky fluid at the rate of 300 mL per day (Figure 2). The ascitic fluid analysis showed that the triglyceride level was 363 mg/dL. The fluid cultures were negative for growth of any organism. The patient only received fasting, total parenteral nutrition and albumin. The abdominal drainage decreased from 300 mL per day to 1 mL per day. Then he recovered completely after 14 days.



**Figure 1.** Accumulation of fluid and air in the peritoneal cavity.



**Figure 2.** Chylous ascites in the J-P drain

## Discussion

Chylous ascites is a rare postoperative complication and caused by disruption of the lymphatic system [2]. But it influences the patient's prognosis and hospitalization may be prolonged. Typically, ascites triglyceride level greater than 110 mg/dL is diagnosed of chylous ascites [1]. Gross appearance of the ascitic fluid relates to poorly with absolute triglyceride levels because turbidity also reflects the size of the chylomicrons. Other ascites analysis includes high leukocyte counts ranging from 232-2560 cells/mm<sup>3</sup> with marked lymphocytic predominance, glucose and amylase levels usually being normal, cholesterol level usually being low and microbiologic cultures usually being negative.

Chyle leakage into the peritoneal cavity results in serious condition because it's the constant loss of proteins, lipids, lymphocytes, vitamins, and electrolytes. Malnutrition will be

persistent or deteriorate and postoperative mortality may be increased. Therefore, how to provide adequate nutritional support is very important.

Only a few studies with the limited data showed how to treat postoperative chylous ascites. In most patients, conservative treatment of chylous ascites is recommended [3]. The conservative treatment includes paracentesis, a medium chain triglyceride (MCT) based diet, total parenteral nutrition (TPN) and fasting, recently used somatostatin and so on [4]. The MCT based diet is usually the first choice and TPN is recommended after dietary manipulation has failed. Our patient was successfully treated with fasting, total parenteral nutrition (TPN) and albumin.

We conclude that fasting with TPN can decrease the lymph flow. TPN and albumin restore nutritional deficits and balances metabolic impairments imposed by long-standing chylous ascites. To the best of our knowledge, the present report is the first case of successful treatment duodenorrhaphy with omental patch induced chylous ascites.

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