Int Surg 2012;**97:**360–362

Case Report

A Case of Successful Conservative Treatment for Chylous Ascites After Living-Donor Liver Transplantation

Hiroaki Shiba, Shigeki Wakiyama, Takeshi Gocho, Yuichi Ishida, Takeyuki Misawa, Katsuhiko Yanaga

Department of Surgery, Jikei University School of Medicine, Tokyo, Japan

A 46-year-old man underwent living-donor liver transplantation and splenectomy for primary biliary cirrhosis. On postoperative day 22, cloudiness of ascites increased, and triglyceride concentration in ascites was as high as 1046 mg/dL. With a diagnosis of chylous ascites, total parenteral nutrition was started. Nine days after starting total parenteral nutrition, cloudiness of ascites decreased, and triglycerides in ascites decreased to 93 mg/dL. Oral intake was restarted, and the patient was discharged on postoperative day 46. Chylous ascites is a rare complication after living-donor liver transplantation for which total parenteral nutrition may be useful.

Key words: Chylous ascites – Living-donor liver transplantation – Primary biliary cirrhosis

Chylous ascites is a rare complication after orthotopic liver transplantation.[1–5] In this study we report a successful conservative treatment for chylous ascites after living-donor liver transplantation (LDLT).

Case Report

A 46-year-old man who had experienced liver dysfunction for 10 years received a diagnosis of primary biliary cirrhosis in 2006. The patient's model for end-stage liver disease score became 19, and the patient underwent LDLT and splenectomy using the right lobe of his younger sister in September 2010. Total hepatectomy was carried out in the usual manner under portovenous shunt. The resected liver and spleen volumes were 1600 and 540 g, respectively. The actual graft weight was 728 g, which accounted for 66.5% of standard liver volume of the recipient. Right hepatic vein, V5, and V8 of the graft were reconstructed using the recipient's native portal vein. Reconstructed hepatic vein of the graft was anastomosed to that of the recipient, and the right portal vein of the graft was anastomosed to the

Reprint requests: Hiroaki Shiba, MD, PhD, Jikei University School of Medicine, 3-25-8, Nishi-Shinbashi, Minato-ku, Tokyo 105-8461, Japan.

Tel.: +81 3 3433 1111, ext 3401; Fax: +81 3 5472 4140; E-mail: hs0817@jikei.ac.jp

main portal vein of the recipient without venovenous bypass. Arterial reconstruction was performed between the recipient's middle hepatic artery and the right hepatic artery of the graft. Anterior and posterior hepatic ducts of the graft were anastomosed to the right and the caudate biliary ducts of the recipient, respectively. His postoperative status was uneventful, and oral intake was started from postoperative day (POD) 1. On POD 8, however, drainage fluid from the subhepatic drain became cloudy. Because the triglyceride concentration of ascites was 106 mg/dL and Sudan III staining was negative, the ascites was diagnosed as pseudochylous (Fig. 1). On POD 22, however, cloudiness of ascites increased, the triglyceride concentration in ascites increased to as high as 1046 mg/dL, and Sudan III staining became positive. With a diagnosis of chylous ascites, oral intake was discontinued and total parenteral nutrition (TPN) was started. Nine days after starting TPN, cloudiness of ascites decreased, and the triglyceride concentration in ascites decreased to 93 mg/dL. Therefore, oral intake was restarted. Chylous ascites did not recur, and the patient was discharged on POD 46; the patient remains well without recurrence of ascites as of 12 months after LDLT.

Discussion

Chylous ascites is the accumulation of cloudy fluid in the peritoneum due to blocked or disrupted lymphatic channels.[6] The diagnosis of chylous ascites is established by the presence of milky and creamy ascites with a triglyceride concentration above 200 mg/dL.[7] Chylous ascites remains a rare complication after surgery, including orthotopic liver transplantation,[1–5] and the most common causes are surgery for abdominal malignancies and abdominal aorta.[8] The management of chylous ascites includes therapeutic paracentesis, dietary control with low-fat, high-protein, and medium triglyceride–based diet; total parenteral nutrition; somatostatin; and surgical intervention. Delay of treatment for chylous ascites may lead to nutritional and immune deficiency that may complicate the outcome of liver transplant recipients after protein and lymphoid leakage. Therefore, adequate treatment for such a complication is necessary in the early period. However, reports on the effectiveness of these treatments after liver transplantation are limited. Ijichi *et al*[1] reported a successful treatment for chylous ascites after LDLT that employed somatostatin in combination with TPN after failure to treat by dietary control and TPN.[1]

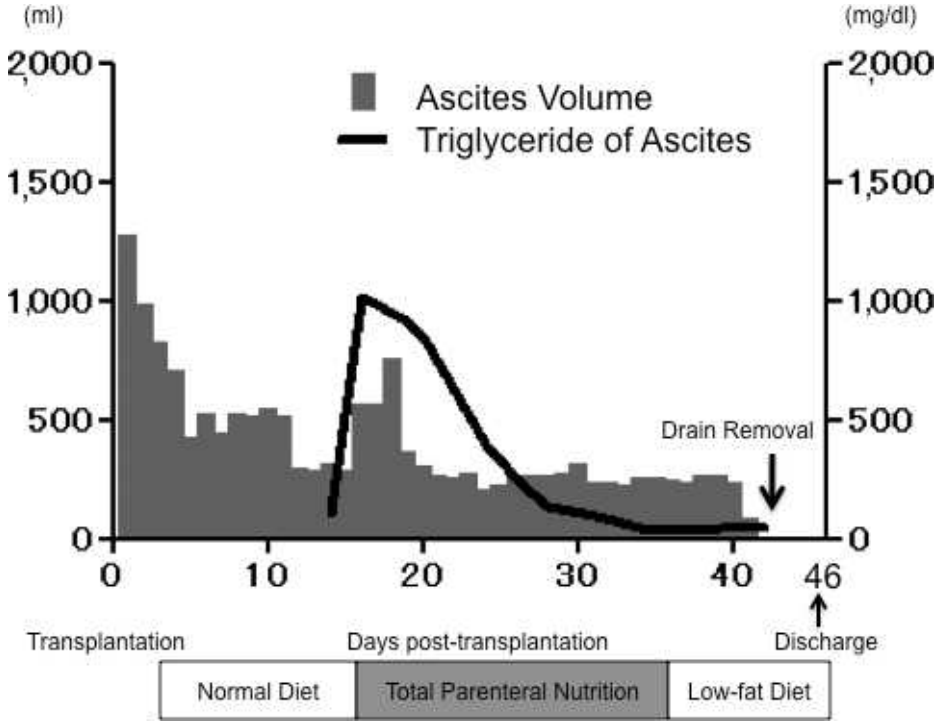

Fig. 1 Output volume and triglyceride content of chylous ascites after LDLT decreased after starting total parenteral nutrition. Chylous ascites did not recur after 1 year of follow-up.

Spontaneous chylous ascites is reported to occur in 0.5% of patients with hepatic cirrhosis.[9] In patients with hepatic cirrhosis, lymphatic channels are dilated because of excessive lymph flow.[1] Therefore, disruption of lymphatic vessels in the porta hepatis and the retrohepatic area during dissection and removal of the native liver may cause chylous ascites.

Conservative approaches, including dietary control and TPN, may be useful as indicated for treatment of chylous ascites after LDLT for hepatic cirrhosis.

References

1. Ijichi H, Soejima Y, Taketomi A, Yoshizumi T, Uchiyama H, Harada N *et al*. Successful management of chylous ascites after living donor liver transplantation with somatostatin. *Liver Int* 2008;**28**(1):143–145
2. Saab S, Nguyen S, Collins J, Kunder G, Busuttil RW. Lymphedema tarda after liver transplantation: a case report and review of the literature. *Exp Clin Transplant* 2006;**4**(2):567–570
3. Senyuz OF, Senturk H, Tasci H, Kaya G, Ozbay G, Sariyar M. Chylous ascites after liver transplantation with mesenteroportal jump graft. *J Hepatobiliary Pancreat Surg* 2001;**8**(6):571–572
4. Shapiro AM, Bain VG, Sigalet DL, Kneteman NM. Rapid resolution of chylous ascites after liver transplantation using somatostatin analog and total parenteral nutrition. *Transplantation* 1996;**61**(9):1410–1411
5. Asfar S, Lowndes R, Wall WJ. Chylous ascites after liver transplantation. *Transplantation* 1994;**58**(3):368–369
6. Teba L, Dedhia HV, Bowen R, Alexander JC. Chylothorax review. *Crit Care Med* 1985;**13**(1):49–52
7. Aalami OO, Allen DB, Organ CH Jr. Chylous ascites: a collective review. *Surgery* 2000;**128**(5):761–778
8. Cárdenas A, Chopra S. Chylous ascites. *Am J Gastroenterol* 2002; **97**(8):1896–1900
9. Ablan CJ, Littooy FN, Freeark RJ. Postoperative chylous ascites: diagnosis and treatment: a series report and literature review. *Arch Surg* 1990;**125**(2):270–273