CASE REPORT

Emergency Liver Transplant in Patient with Child-Pugh Class C Cirrhosis and Strangulated Umbilical Hernia

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Abstract

The authors report the case of a patient who presented with small bowel obstruction while awaiting liver transplant for Child-Pugh class C cirrhosis. He underwent emergency liver transplant with resection of the small bowel after the obstruction did not improve with conservative management. The authors believe this is the first case of successful emergency liver transplant with resection of the small bowel in a patient with decompensated Child-Pugh class C liver cirrhosis and strangulated umbilical hernia. This case suggests the possibility of improved outcomes of emergency hernia repair in patients with liver cirrhosis when small bowel resection is combined with liver transplant.

Key words: *Ascites, Small bowel resection, Living-donor liver transplant, Cirrhosis, Strangulated hernia*

Introduction

The prevalence of umbilical hernia in patients with cirrhosis and ascites is approximately 20%.[1,2] Surgical correction of an uncomplicated umbilical hernia in patients with ascites is usually not attempted because of expected associated risks like ascites leak, spontaneous bacterial peritonitis, or decompensation, and recurrence rates are as high as 60% after repair.[2] Conservative management can be complicated by incarceration or spontaneous rupture from necrosis of overlying skin, forcing emergency surgical repair in patients who are at risk of complications after nonelective operations, compared with elective operations.[2] In the present article, we report the case of a patient with decompensated Child-Pugh class C liver cirrhosis and strangulated umbilical hernia. This patient underwent successful emergency liver transplant with resection of the small bowel.

Case Report

A man, aged 63 years, presented with a 6-month history of ascites and jaundice. Upon evaluation, he was diagnosed as having alcohol-induced Child-Pugh class C liver cirrhosis with a Model for End-Stage Liver Disease (MELD) score of 24. A living-donor liver transplant was scheduled for the patient.

While the patient was waiting for the transplant, he presented with features of subacute intestinal obstruction with irreducible umbilical hernia. Noncontrast computed tomography of the abdomen was suggestive of small bowel obstruction.

The patient was treated conservatively with a Ryle's tube (ie, nasogastric) in situ and adequate hydration for correction of electrolyte imbalance. After observation for 48 hours, the patient's condition did not improve, and his white blood cell count increased to 17000/μL. Considering the high risk of mortality associated with surgery for incarcerated umbilical hernia in a patient with Child-Pugh class C cirrhosis,[3] simultaneous emergency liver transplant with surgery for incarcerated umbilical hernia was scheduled for the patient.

During the preoperative period, the patient was treated with broad spectrum antibiotics. Emergent surgical exploration was performed through a

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transverse subumbilical incision. A strangulated hernia with a 4-cm segment of gangrenous small bowel was found, necessitating resection with primary anastomosis. The patient underwent a living-donor liver transplant with a modified right lobe graft (ie, a right lobe with partial middle hepatic vein), which was recovered from his son. The graft weighed 635 grams and contained a single right hepatic artery, a portal vein, and a hepatic duct. Cold ischemia time was 43 minutes.

The patient tolerated the surgical procedures well. Oral antibiotics, initiated on postoperative day 3, were also tolerated well. At 9 months' follow-up, the patient was doing well, with stable liver function results and good quality of life.

Discussion

The optimal management of umbilical hernia in patients with liver cirrhosis and ascites remains a matter of debate. One-year survival rates for patients with Child-Pugh class C cirrhosis average approximately 45%.[4,5,6] Even without additional insult, mortality is high. Moreover, when the patient with Child-Pugh class C cirrhosis is exposed to emergency surgery, chances of decompensation are high. Mortality following open abdominal surgery ranges from 10% in patients with Child-Pugh class A cirrhosis to 82% in patients with Child-Pugh class C cirrhosis.[3,7]

In the present case, the patient had Child-Pugh class C cirrhosis, and obstructed umbilical hernia with features of small bowel obstruction later developed. It was difficult to decide whether the patient should be offered only surgery for obstructed hernia or surgery for liver transplant and obstructed hernia. The mortality and morbidity rate for patients with ascites undergoing emergent repair of complicated umbilical hernias is 14%, compared with a 2% mortality rate for patients undergoing elective repair.[8] Marsman and associates[9] reported that conservative treatment in patients with complicated umbilical hernia was associated with a higher incidence of morbidity and mortality. However, results of liver transplant in such patients is not known. In a case report by Reissfelder and associates,[10] acute liver failure and thrombosis of the umbilical vein developed after the patient underwent umbilical hernia repair, with consequent partial embolization to the liver.

Based on a limited number of publications on bowel obstruction and umbilical hernia in patients with liver cirrhosis, it is difficult to identify the criterion standard for treatment. We prefer to repair hernias at the time of liver transplant—except in cases in which the hernia is incarcerated or ruptured—because we have observed high postoperative morbidity and mortality when repair was performed before transplant. We believe the present case report represents the first case of simultaneous emergency liver transplant with small bowel resection and primary anastomosis in a patient with decompensated Child-Pugh class C liver cirrhosis and strangulated umbilical hernia.

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