A New Biliodigestive Anastomosis Technique After Hepatic Artery Thrombosis as Bridge to Liver Retransplantation: A Case Presentation


ABSTRACT

Arterial complications after liver transplantation are frequent. Hepatic artery thrombosis (HAT) is usually associated with biliary complications. Herein we have reported a case of a patient who was admitted for jaundice, itch, and elevated aspartate aminotransferase and alanine aminotransferase levels at 6 weeks after liver transplantation. HAT associated with a biloma was diagnosed and an urgent operation performed requiring a new biliodigestive anastomosis technique. Fourteen months after the first transplant, the patient was retransplanted. The operation performed may be an alternative to treat biliary complications due to late HAT.

ARTERIAL COMPLICATIONS after orthotopic liver transplantation (OLT) vary from 2% to 25%.1 Hepatic artery thrombosis (HAT) is the most frequent vascular complication; it is associated with a high mortality and morbidity. If HAT occurs late, it can be associated with biliary complications and hepatic bilomas.2 Herein we have described the clinical history and management of a patient who had a biloma after HAT and whose surgical treatment until retransplantation was only a biliodigestive anastomosis.

CASE REPORT

A 45-year-old man had been the recipient of liver allograft in 2002, because of an end-stage liver disease due to hepatitis C virus (HCV). He was classified as Child-Pugh B8. The OLT was performed using the piggyback technique. On day 11 after OLT, the patient was discharged on tacrolimus and prednisone.

Six weeks after the transplantation, he was admitted for jaundice, itch, and elevated levels of bilirubin, aspartate aminotransferase and alanine aminotransferase. Abdominal ultrasonography and abdominal computed tomography (CT) revealed a well-delimited collection at the hepatic hilum. Ultrasound-guided percutaneous puncture was performed. The quantity of the aspirated bile was 600 mL. Endoscopic retrograde cholangiopancreatography (ERCP) detected a bile duct stricture. It was not possible to insert an endoscopic endoprosthesis. Hepatic arteriography revealed hepatic artery thrombosis.

An urgent operation was performed discovering a well-encapsulated biloma at the hepatic hilum. The necrotic biliary tree was resected along with the biloma’s capsule. The biloma’s margins were used to perform a Roux-en-Y intestinal segment anastomosis. Eight days after the surgery, the patient was asymptomatic. He was immediately relisted for retransplantation. Pulmonary tuberculosis was diagnosed and treated during this period. Fourteen months after the first transplant, he was successfully retransplanted.

DISCUSSION

Thrombosis of the hepatic artery is one of the most frequent complications after OLT. Risk factors for this condition include a small diameter of the anastomosed vessels, ABO incompatibility, a long cold ischemia time, and technical errors. Late HAT which is conventionally described as occurring more than 30 days after surgery, is rare. Its incidence has been reported to be less than 2%. It is usually diagnosed after 6 months following transplant.5 Cytomegalovirus infection and accessory hepatic artery anastomosis are risk factors for late HAT, as well as chronic HCV infection.3,4 Routine Doppler ultrasound is used to detect clinically unsuspected vascular complications in the early postoperative phase after OLT, particularly HAT.5 Among transplanted patients, low early posttransplant hepatic artery resistive indexes (normal resistive index cutoff, 0.6) are sensitive (100%) and specific (80%) predictors for vascular complications.6 After an abnormal Doppler ultrasound, arteriography should be performed to support the diagnosis.7 Once early HAT is confirmed, thrombectomy and
arterial reconstruction should be performed immediately.\textsuperscript{8} Thrombolysis is frequently followed by bleeding. Retransplantation is required in almost 50\% of patients with a serious condition such as HAT.\textsuperscript{9} In our hospital, the Doppler ultrasound is performed in the first days after the liver transplantation.

Fig 1. Abdominal computed tomography: Yellow arrow: a well-delimited subhepatic collection, corresponding to a biloma.

Fig 2. ERCP. Yellow arrow: a bile duct stricture due to biliary tree necrosis.
HAT is associated with ischemic biliary lesions. In our case, this lesion was complete biliary tree necrosis with biloma formation. We used a new biliodigestive anastomosis technique to treat this patient as a way to keep him alive while he was awaiting a liver retransplant.

Considering the successful outcome of our patient, this surgery is an alternative for patients with late biliary complications after HAT that were not solved by endoscopic or percutaneous treatment and that required an urgent intervention. Fig. 1–4.

**Fig 3.** Biliodigestive anastomosis. Blue arrow: anastomosis of posterior portion of biloma to the jejunum. Red arrow: biloma wall.

**Fig 4.** Biliodigestive anastomosis. Blue arrow: anterior view of biliary-jejunal anastomosis (simple interrupted suture, 4.0 vicryl).
REFERENCES