



Biliary Reconstruction Without T-Tube in Liver Transplantation

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ABSTRACT

Biliary complications have been reported in 9% to 34% of liver transplant patients. Although most centers seem to prefer a duct-to-duct anastomosis without a T-tube when feasible, the best method of biliary reconstruction remains controversial. The aim of this study was to review our experience on reconstruction of the biliary tract without drainage. Forty-one patients underwent 45 liver transplants over two periods. Forty patients underwent 15 liver transplants from October 1992 to March 1995; and 27 underwent 30 liver transplants from January 2002 to February 2003. Our standard biliary reconstruction was an end-to-end anastomosis without drain. The overall actuarial survival was 72.7% at 1 year, 64.7% at 3 years, and 56.6% at 5 years. The mean follow-up was 23 months. Eight patients (22.2%) developed biliary tract complications: five patients papillary dysfunction (13.9%); two, biliary stricture (5.5%); and one, biliary sludge without evidence of stricture (2.8%). Papillary dysfunction represented 62.5% of all complications. Biliary reconstruction without drainage may be routinely performed since the complications are only those not related to the T-tube.

BILIARY COMPLICATIONS have been reported in 10% to 50% of patients after liver transplantation (LT).¹⁻³ Although most centers seem to prefer a duct-to-duct anastomosis without a T-tube when feasible, the best method of biliary reconstruction remains controversial. Cholangitis, fistula, dislodgement, obstruction, and peritonitis are complications directly related to the T-tube, accounting for 60% of all postoperative biliary problems.^{2,3} The lack of a T-tube or any other drain may reduce the incidence of complications.^{2,4} The aim of this study was to review our experience with reconstruction of biliary tract without biliary drainage.

PATIENTS AND METHODS

A total of 41 patients (25 men, 16 women of mean age 44 years) underwent 45 LT over two periods. 40 patients underwent 15 LT from October 1992 to March 1995, and 27 underwent 30 LT from January 2002 to February 2003, including two right lobe transplants from living donors. Additionally, the recipient portion of the bile duct was partially closed in two cases of severe disproportion. The main causes of liver failure in the 41 first transplants were C virus cirrhosis (29%) and fulminant hepatic failure (22%). Five cases of perioperative deaths, resulting in a follow-up shorter than 5 days, were excluded. Our standard biliary reconstruction was an end-to-end anastomosis without a drain, with preference for a continuous 6-0 PDS suture whenever possible. In the reoperation cases, choledochojejunostomy was performed as previously described.⁵

RESULTS

The overall actuarial survival was 72.7% at 1 year, 64.7% at 3 years, and 56.6% at 5 years. The mean follow-up was 23 months. Eight patients (22.2%) developed biliary tract complications: five had papillary dysfunction (13.9%); two biliary stricture (5.5%); and one biliary sludge without evidence of stricture (2.8%). Papillary dysfunction represented 62.5% of all complications. Except for two patients with papillary dysfunction treated by endoscopic sphincterotomy from January 2002 to February 2003, all other patients successfully underwent choledochojejunostomy. No biliary fistulae or mortality related to biliary complications was observed even among the five cases excluded due to insufficient follow-up.

DISCUSSION

Bile duct anastomosis still largely contributes to morbidity after LT. However, the best method of biliary reconstruction

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tion is still a source of debate. The incidence of T-tube-related complications accounts for 10% to 60% of biliary problems in large clinical series, including biliary sludge or obstruction, drain dislodgment, bile leak at the exit point of the T-tube, cholangitis associated with the cholangiography procedure, and the additional risk of bile leakage at the time of drain removal.^{2,3} Although external bile duct drainage can facilitate early diagnosis of complications providing easy access to the biliary tree, routine cholangiography is associated with an increased incidence of cholangitis despite antibiotic prophylaxis.²

In contrast, this study showed a decreased rate (22.2%) of biliary problems after LT. Furthermore, papillary dysfunction was responsible for more than half (62.5%) of all complications related to the biliary tract. Although in most cases a postoperative bile leak is easily detected and treated by drainage, no patient in this series developed a leakage, an observation that probably resulted from the reconstruction technique using a continuous suture in the fashion recommended for surgical repair of cicatricial stenosis as published elsewhere.⁵

Nevertheless, an invasive procedure like endoscopic retrograde cholangiography (ERC) should be carefully considered due to the risks of bleeding, perforation, cholangitis, and pancreatitis. Thus this procedure should be carried out

only in selected cases when other methods of diagnosis are insufficient or when ERC is indicated as in cases of papillary dysfunction. Biliary stenosis frequently requires surgical repair and can be detected by magnetic resonance cholangiography precluding ERC. A radionuclide scan may help to diagnose abnormalities of biliary excretion.

In conclusion, biliary reconstruction without drainage produces complications not related to the T-tube. Easy access to the biliary tract through the drain is no longer justified for diagnosis. Anastomotic fistulae can be drastically reduced by an accurate surgical technique. Additionally, proper diagnosis is achieved in many cases without an invasive procedure. Thus a biliary anastomosis without a T-tube may be routinely performed.

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