

A Randomized trial of intra-operative biliary stent at orthotopic liver transplantation

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Purpose:

Biliary complications remain one of the most problematic issues in liver transplantation. Following a published series of cases, we hypothesized that placement of a biliary endoprosthesis at the time of orthotopic liver transplantation (OLT) will decrease the rate of early biliary complications and the need for biliary interventions after OLT.

Methods:

We conducted a randomized trial of direct operative placement of a biliary endoprosthesis (Cotton-Leung plastic stent) in the choledocho-choledochal anastomosis (CCA) at the time of OLT. All patients were treated with the same clinical care pathway however patients receiving an intraoperative stent underwent an ERCP at 6 weeks to remove it. Biliary complications were recorded and categorized in a blinded fashion. Univariate, multivariate and survival analyses were performed.

Results:

Over a 4.5-year period (2002-2007), 140 liver transplant recipients were randomized to receive a CCA with biliary stent (n=73) or CCA alone (n=67). There was no significant difference in demographic or graft-related variables between the two groups. The mean age at transplant was 55 years, 82% of recipients were male, 86% had a status 1 or 2 at OLT and 23% had hepatitis C. No patient suffered a complication related to the biliary stent. The rate of overall biliary complications in the stented patients was 24.7% vs. 32.8% in non-stented patients, p=NS. However, stented patients had significantly less biliary complications in the first 60-days post-transplantation (p<0.02) and significantly less anastomotic leaks (p<0.05). Over the year following OLT, stented patients also required significantly less biliary therapeutic interventions (p<0.04) and required fewer readmissions (p<0.01). We also observed improved late graft survival (>6mo) in the stented group.

Conclusions:

Intraoperative stenting of the CCA at OLT does not appear to reduce the long-term rate of biliary complications but it decreases the incidence of biliary leaks and significantly improves many facets of early patient management.