Successful Transplantation of Donation-after-Cardiac-Death Liver in Recipient with MELD Score of 40

The utilization of donation-after-cardiac-death (DCD) donors in liver transplantation has been proposed as a way to alleviate the shortage of liver allografts. Although the use of DCD livers is increasing, there has been reluctance because of extended warm ischemic times and possible suboptimal allografts. Therefore these DCD livers tend to be transplanted in "less sick" patients. Our institution has been utilizing DCD livers for the past three years, and we are pushing the limits to create an algorithm that defines the appropriate population for these organs. We present the first case of a patient with a model for end-stage liver disease (MELD) score of 40 who received a hepatic allograft from a DCD donor.

A 38-year-old male with hepatitis C was evaluated and listed for liver transplantation. One week prior to transplantation, the patient was hospitalized with acute Hepatitis A infection and rapidly decompensated to a MELD of 40. A 19-year-old donor was involved in a fatal motor vehicle accident and consent for DCD organ donation was obtained by the donor network. The hepatic function profile was unremarkable. The time from cardiac arrest to perfusion of the organs was 10 min. Heparin was given and aortic flush was performed. The liver was procured in standard fashion and back table portal vein flush was performed.

Liver transplantation was performed in standard piggyback fashion with a cold ischemic time of 7.5 hours. The patient had an uneventful postoperative course, was discharged on postoperative day 10 and continues to do well five months out. The biochemical profiles are presented in Figure 1. Immunosuppression regimen included steroids, cellcept and prograf.

The national median score for patients transplanted is 22 (*1*) and it is known that as MELD score increases, mortality increases. Abt et al. evaluated the United Network of Organ Sharing (UNOS) database between 1993 and 2001 and found that recipients of a controlled DCD liver had statistically similar graft survival rates after three years compared to recipients of a donation after main death (DBD) liver (*2*). Additionally, a single-center study out of the University of Pennsylvania found no difference in graft or patient survival between controlled DCD and DBD liver allografts after one and three years (*3*).

Our own initial analysis of the UNOS database led us to use DCD livers preferentially in lower risk patients as defined by a recipient cumulative relative risk score of <1.5 (*4*, *5*). This calculated score incorporates recipient factors such as age, pretransplantation and

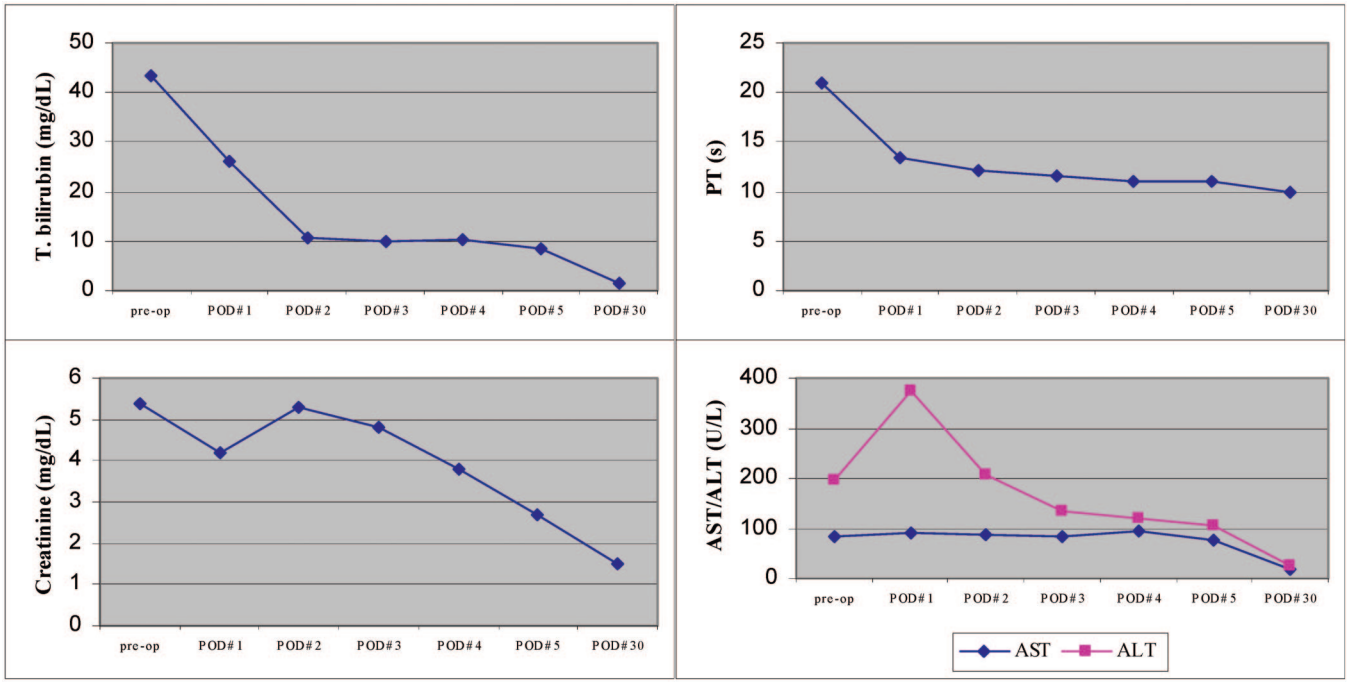

FIGURE 1. Trend in laboratory values following liver transplantation.

dialysis status, and serum creatinine to select favorable candidates for DCD allografts. However, as our experience has grown, we have become more comfortable with the procurement and reliability of these allografts. Our current report of the successful transplantation of a DCD liver in a patient with a MELD score of 40 lends provisional support to the use of controlled DCD livers in higher-risk patients. The individualized use of DCD donor organs, especially from young donors with short ischemic times, can yield excellent results and lead to significant expansion of the donor pool.

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Successful Endovascular Treatment of a Leaking Pseudoaneurysm without Graft Loss after Simultaneous Pancreas and Kidney Transplantation

A 41-year-old African-American male with end-stage renal disease secondary to type I diabetes underwent simultaneous pancreas and kidney transplantation (SPK). He received daclizumab (1 mg/kg) intraoperatively for induction immunosuppression. Posttransplant immunosuppression included oral tacrolimus, mycophenolate mofetil (2 g daily), and prednisone with tapering. The postoperative course was complicated by one episode of acute rejection and two episodes of gastrointestinal (GI) bleeding. The rejection was treated with thymoglobulin and both GI bleeding episodes resolved spontaneously. The laboratory data at the discharge showed WBC 7400 /mm^3 and amylase 139 U/L (normal range: 28–100 U/L).

Five months later, he was found to have an increased white blood count (WBC) count (17,300/mm^3) on his clinic visit. Abdominal computed tomography (CT) scan demonstrated an incidental 1.9 cm pseudoaneurysm involving the right common iliac artery. The patient initially underwent isolated coil embolization of the pseudoaneurysm in an attempt to thrombose the cavity. Three weeks later, he developed acute hypotension and right lower quadrant pain. His hematocrit decreased from 42% to 32%. The laboratory data at that time showed WBC 16200/mm^3 and amylase 362 U/L. A CT scan demonstrated a large right lower quadrant hematoma suggestive of leaking pseudoaneurysm. He was admitted for urgent intervention.

Retrograde iliac angiogram demonstrated extravasation from the origin of the pseudoaneurysm in the common iliac artery just distal to the pancreatic arterial anastomosis (Fig. 1A). The previously seen pseudoaneurysm cavity remained largely unfilled. Through a percutaneous 7-French introducer sheath, a 10-mm × 39-mm i-Cast (Atrium Medical, Hudson, New Hampshire) peripheral covered stent was deployed over the origin of the pseudoaneurysm. Poststent angiogram showed no extravasation and widely opened arterial anastomosis to the pancreas graft (Fig. 1B). Laboratory data soon normalized with the values of

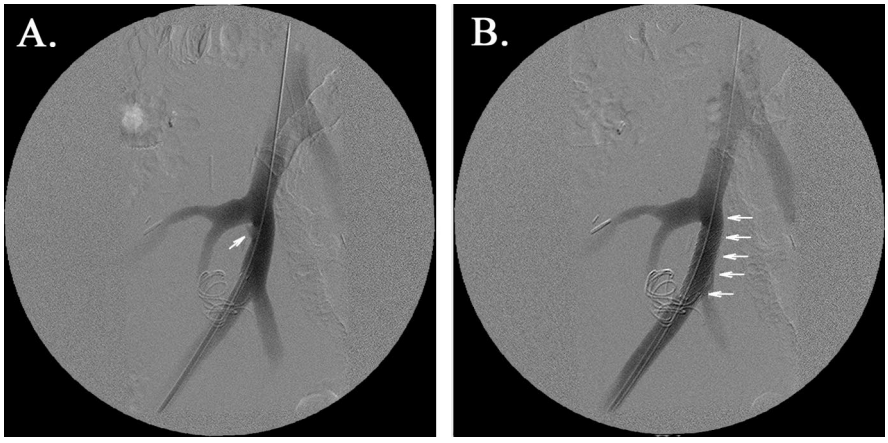

FIGURE 1. (A) Retrograde iliac angiogram before stent placement demonstrated the iliac pseudoaneurysm with little extravasation (white arrow) in the distal common iliac artery just distal to the pancreatic arterial anastomosis. The pseudoaneurysm cavity remained largely unfilled, which suggested that previously placed coils thrombosed the most part of inside lumen of the pseudoaneurysm. (B) Completion angiogram after stent placement showed widely remained right common iliac-pancreatic arterial anastomosis. White arrows showed a placed i-Cast peripheral covered stent graft just distal to the pancreatic arterial anastomosis.