

27th Annual Charles B. Huggins Research Symposium

'En Bloc' Liver and Pancreas Transplantation in Patient with Chronic Pancreatitis, Liver Disease and Previous Auto-Islet Transplantation and What We Learned from It

Gabriela Stepinska, Piotr J. Bachul, Damian J. Grybowski, Roi Anteby, Katherine Boylan, John Hart, Lindsay Basto, Laurencia Perea, Karolina Golab, Ling-Jia Wang, Martin Tibudan, Angelica Perez Gutierrez, Michal Komorniczak, Aaron Lucander, Peter Borek, Michael Dimitrov, Michael Charlton, Jeffrey M Matthews, John Fung, Piotr Witkowski

Introduction: Combined en-bloc liver/pancreas transplantation (CLPT) is a rare surgical procedure offered in malignancies, insulin-dependent patients or in cystic fibrosis. Here, we present the first case, where CLPT was performed in a patient with liver cirrhosis and previous total pancreatectomy with islet autotransplantation (TPIAT).

Method: TPIAT was performed on 38-year-old, non-diabetic male with CFTR gene mutation for treatment of chronic pancreatitis with severe intractable pain. Prior to that, he had already developed opioid dependence, failure to thrive, malnutrition with BMI of 34 and non-alcoholic fatty liver disease.

Results: During TPIAT, 152,000 islet equivalents were infused intraportally suspended in 16 mL of tissue. Patient returned to full professional activity and weaned off his pain medication completely within few months. He controlled his blood glucose well with HbA1c of 5.5% and 17 units of insulin per day at 1 year after the surgery. One year later patient was suddenly admitted with MELD of 42 and decompensated liver cirrhosis attributed to progressive nonalcoholic steatohepatitis as well as suspected alcohol use. Patient was treated with CLPT for the advantage of optimal glucose control after hepatectomy containing autologous islets. During complicated surgery, he required intensive resuscitation and pressure support. Pancreatic graft thrombosed and was excised on following day. Patient was discharged with full insulin and pancreatic enzyme supplementation. Liver pathology revealed healthy looking islets without amyloid deposits dispersed in hepatic cirrhotic parenchyma. Subsequently, his HbA1c increased from 5.7 to 9.2 despite use of an insulin pump and a continual glucose monitoring system. He developed hypoglycemic unawareness with hypoglycemic seizures, anxiety and depression. Therefore, 10 months later patient underwent uneventful solitary pancreas transplantation in right iliac fossa with enteric drainage. Patient optimal glucose control was instantly restored and quality of life improved with durable long-term outcome.

Conclusion: Combined en-bloc liver/pancreas transplantation has high risk of pancreas thrombosis related to patient cardiovascular instability during the procedure. Subsequent

pancreas transplantation is a vital therapeutic option to restore beta cell function and insulin independence.