

## 27th Annual Charles B. Huggins Research Symposium

### Successful Treatment of Complete Portal Vein Thrombosis (PVT) after Total Pancreatectomy with Islet Autotransplantation (TP-IAT) with Intraportal Thrombolysis and Transjugular Intrahepatic Porto-Systemic Shunt (TIPS)

Piotr J. Bachul, Thuong Van Ha, Damian J. Grybowski Jeffrey Leef, Rakesh Navuluri, , Lindsay Basto, Laurencia Perea, Karolina Golab, Ling-Jia Wang, Martin Tibudan, Angelica Perez Gutierrez, Michal Komorniczak, Sajan Nagpal, Aaron Lucander, Peter Borek, Michael Dimitrov, John Fung, Jeffrey Matthews, Piotr Witkowski

**Introduction:** Portal vein thrombosis (PVT) following islet autotransplantation after total pancreatectomy is a rare but life-threatening complication that may lead to sepsis, bowel anastomotic leak or necrosis, liver infarction, shock, and death. We present a case of complete PVT successfully treated with thrombectomy with thrombolysis and TIPS.

**Methods:** A 17-year-old female with well-documented recurrent acute pancreatitis (small duct variant, negative genetic testing) developed constant intractable abdominal pain that precluded participation in school activities and led to opioid dependence underwent TP-IAT. Her preoperative blood glucose control was excellent with an HbA1c of 5.5%, fasting c-peptide of 0.36 pmol/mL, and BETA-2 score of 23.38.

**Results:** After TP, islet isolation yielded 267,964 IEQ (4,220 IEQ/kg) in a 25 ml tissue pellet. Intraportal islet infusion was ceased once portal pressure reached 30mmHg. Postoperative heparin dose was limited to 5,000 units q 12h due to the presence of an epidural catheter for analgesia. On postoperative day 1, patient developed PVT. Despite full intravenous anticoagulation, she progressed to complete portal and superior mesenteric vein thrombosis with ALT 1,537 and AST 4,461 on postoperative day 2. Portal vein thrombectomy with AngioJet was performed with continuous tPA thrombolysis via a transhepatic catheter and with systemic heparin anticoagulation. Despite that, she developed worsening abdominal pain and distention with poor portal flow. On day 5 post-infusion a TIPS was placed. Portal flow was restored and GI tract venous engorgement decompressed. The patient gradually recovered on oral anticoagulation for 2 months and resumed school activities without the need for daily opioids. At 3 year follow-up, the patient was pain free without dietary restriction. She has remained insulin independent since post-transplant month 4 with excellent blood glucose control and an HbA1c of 5.8%. Doppler revealed hepatopetal flow with very limited blood flow via TIPS.

**Conclusions:** Proper anticoagulation and limiting infused tissue volume under guidance of portal vein blood pressure are crucial preventative measures. Early diagnosis and rapid intervention including full anticoagulation, IR thrombectomy with thrombolysis and consideration of TIPS as in this case, may represent an effective and critically important treatment strategy, which did not affect islet function.