Alternate approach of arterial reconstruction for portal enteric pancreas transplantation.

Introduction: Since the first clinically successful procedure in 1966, the surgical technique of pancreas transplantation has undergone numerous modifications. This is particularly true regarding techniques of vascular reconstruction

Methods: Portal venous drainage of the pancreas allograft most often involves venous drainage via the recipient superior mesenteric vein (SMV). This requires the graft to have a long artery such that inflow from the recipient's iliac circulation is feasible. With the standard Y-graft technique, arterial length may be limited by the inherent length of the donor vessel. Additionally, this technique requires changing exposure of the surgical field between the venous and arterial anastomoses. Alternatively, we describe a technique of initial placement of a donor arterial (iliac) conduit on the recipients iliac vessels and tunneling the conduit through the small bowel mesentery. The graft vasculature is then reconstructed by end to side anastomosis between the splenic and superior mesenteric arteries. The venous and arterial anastomoses(donor external iliac artery to the superior mesenteric artery) are then completed in succession in the same operative field . In this study, we report on and compare these two methods of arterial reconstruction in facilitating portal venous drained pancreas transplantation. RESULTS:
From January 2000 through December 2006, 131 whole-organ pancreas transplants were performed at our institution. We utilized portal venous drainage in 84 cases (64%). In 70 cases (83%) of portal drainage a splenomesenteric arterial reconstructive technique was used (Group I) and in the remaining 14 cases (17%) a standard donor iliac Y graft was utilized (Group II). Venous thrombosis rate was 4.5% and 5.8% for the Y-graft and end-side group respectively (p=NS). There were no cases of arterial thrombosis. Mean anastomosis time for Group 1 was 42 minutes versus 58 minutes for Group 2 (p=0.003).

Conclusions: Use of a donor iliac conduit with end-to-side splenomesenteric anastomosis facilitates portal venous drainage over the standard Y-graft technique. This technique shortens anastomosis time by maintaining the same operative field for arterial and venous anastomoses and also eliminates the need for an arterial extension graft. This not associated with an increased technical failure rate and should be added to the armamentarium of the pancreas transplant surgeon.