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CASE REPORT

Endoscopic retrograde pancreatography using single balloon enteroscopy in a patient with smoldering pancreatitis in a distal jejunal pancreas transplant

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Summary Portal-enteric drainage of graft secretions is currently the preferred method of pancreatic transplantation and usually created between the donor duodenum and recipient jejunum; however, this anatomy does not allow for easy access to the donor pancreas. We report here the first case of a single balloon assisted-endoscopic retrograde pancreatography in a patient with progressively increasing amylase and lipase in portal-enteric-drained pancreas-kidney transplantation.

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Case report

A 54-year-old female with type 1 diabetes and diabetic nephropathy underwent simultaneous pancreas and kidney transplantation with enteric-portal pancreatic drainage with a Roux-en-Y jejunal limb. The transplanted duodenal segment was attached to the recipient's mid to distal jejunum in a side-to-side manner. An immunosuppressive regimen included tacrolimus, prednisone, and mycophenolate sodium. The postoperative course was complicated by a small bowel obstruction due to a subcutaneous hematoma and adhesions of the small bowel to the pancreatic allograft and was treated surgically. Eleven months after

transplantation, she was seen with progressively increasing amylase and lipase without abdominal pain or other gastrointestinal symptoms. Her pancreas transplant was not amenable to biopsy due to omental wrapping and fear of bowel injury. A biopsy of transplanted kidney demonstrated no evidence of rejection. On magnetic resonance cholangiopancreatography (MRCP), the head and mid body of the transplanted pancreas demonstrated high-grade signal loss without upstream dilation (Fig. 1). IgG4 was unremarkable. She was treated with high-dose corticosteroids for possible transplant rejection. Elevated enzyme levels were unchanged. Because of the uncertain nature of the MRCP findings, the patient was scheduled for endoscopic retrograde pancreatography.

Single balloon enteroscopy-assisted endoscopic retrograde pancreatography was performed with the patient under general anesthesia in the supine position and showed copious foodstuffs in the jejunum and duodenojejunostomy

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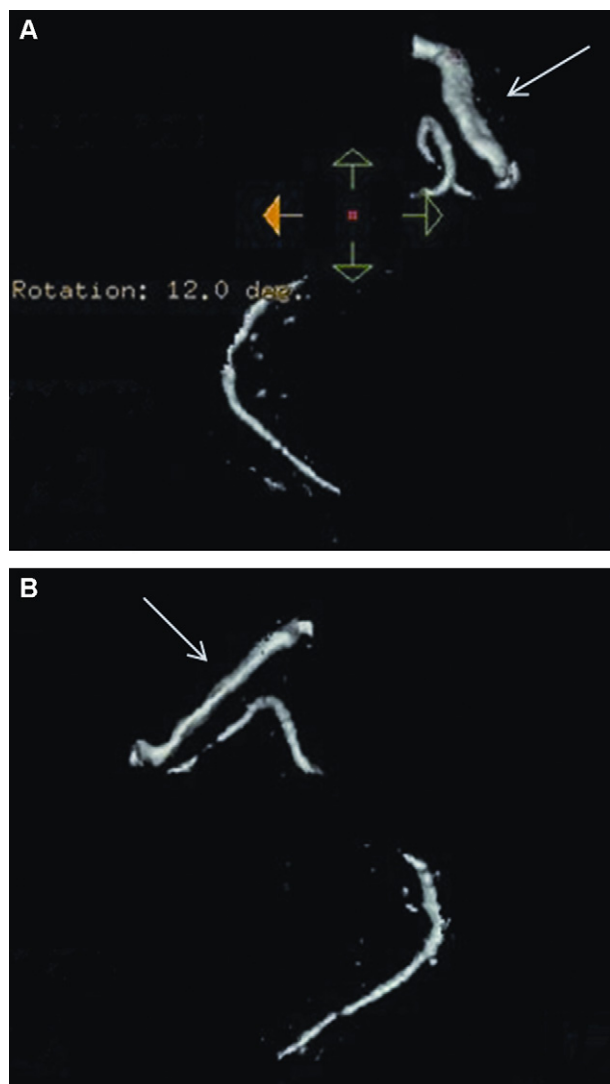


Figure 1 A, B. MRCP reveals high-grade strictures/signal defect in the head and mid body of the pancreatic duct. Note the disconnected bile duct transplanted with the duodenum and pancreas (arrows).

which was located in the mid-distal to jejunum (Fig. 2). The extrinsic outlines of the pancreas transplant were visible and grossly edematous. A pancreatogram was done using a 300 cm long cannula (Cook Inc, Winston-Salem, NC). The latter confirmed extensive ductal stenosis associated with rapid decompression after each injection to include proteinaceous debris (Fig. 3). Because of rapid drainage of contrast and protein plug, stenting was not undertaken. The edematous pancreatic transplant was felt likely to be a rejection phenomenon. However, after the procedure, the patient normalized amylase and lipase levels (Fig. 4) and it appears that this was more likely an obstructive phenomenon.

Discussion

A simultaneous pancreas and kidney transplant is the most common type of transplant involving the pancreas

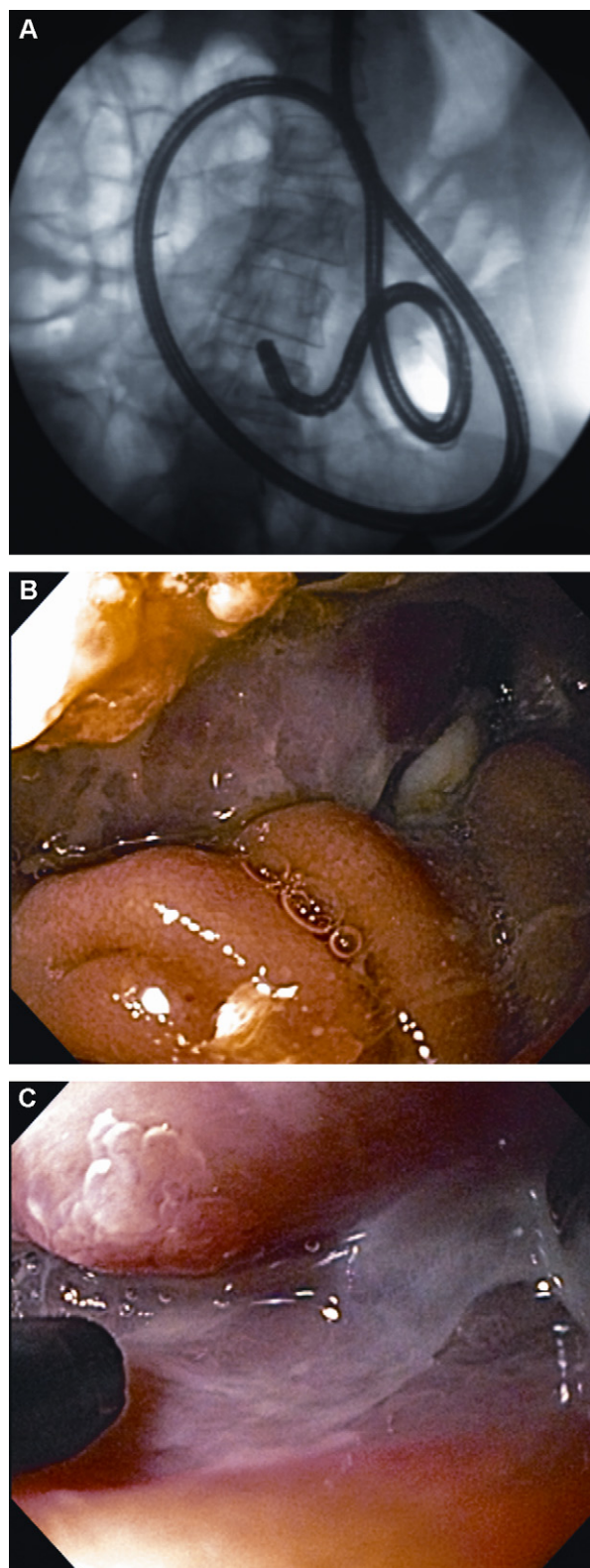


Figure 2 A. Fluoroscopic image of scope position. B, C. Enteroscopic image of the duodenojejunal anastomosis and papilla.

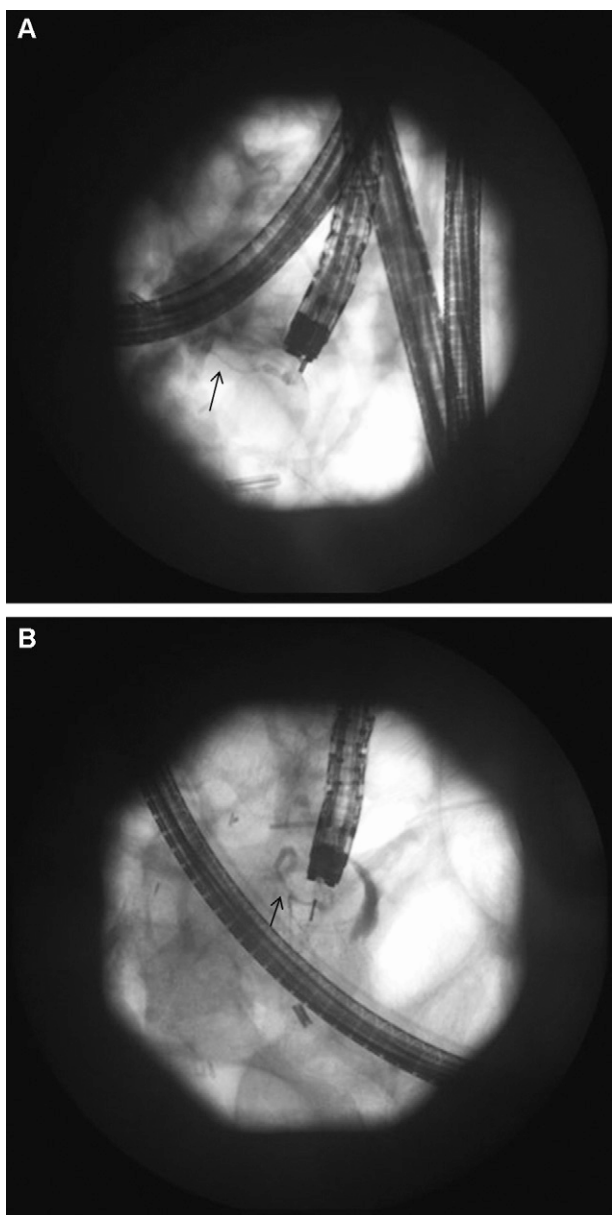


Figure 3 A, B. Duct stenosis with rapid decompression of contrast and proteinaceous debris after injection (arrows).

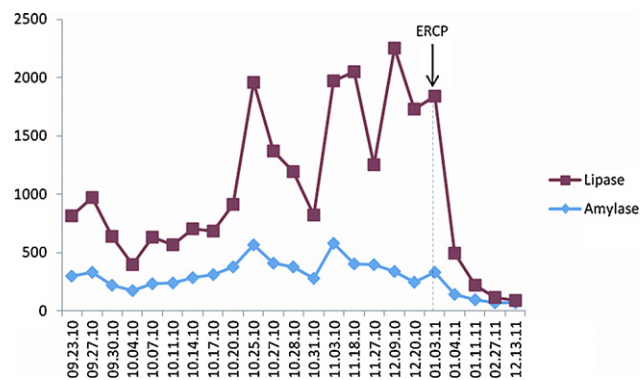


Figure 4 Amylase and lipase levels pre- and post-ERCP.

as the treatment of choice for diabetic patients with end stage renal disease [1,2]. Portal-enteric drainage of graft secretions is currently the preferred method of pancreatic transplantation and usually created between the donor duodenum and recipient jejunum in a side-to-side anastomosis; however, this anatomy does not allow for easy access to the donor pancreas. In the case of portal-enteric drainage, endoscopic retrograde cholangiopancreatography (ERCP) has been reported only through a temporary venting jejunostomy [3]; therefore, an endoscopic approach directly to visualize the duct of the transplanted pancreas to allow therapeutic intervention has potential clinical importance.

The single balloon enteroscope was developed as an alternative to visualize the small intestine. Case series have demonstrated successful performance of single balloon enteroscopy-assisted ERCP in patients with surgically altered anatomy [4]. However, to our knowledge, there is no report on the use of this technique in the setting of a pancreatic jejunal transplant. de Melo et al. [5] reported a single balloon enteroscopy-assisted hemostasis of an anastomotic ulcer in a patient with enteric-drained pancreas-kidney transplantation. Another report showed biopsy of the donor duodenum by double-balloon enteroscopy in a recipient of enteric-drained pancreas transplant [6]. We report here the first case of a single balloon assisted-endoscopic retrograde pancreatography in a patient with portal-enteric-drained pancreas-kidney transplantation. Enteroscopy-assisted endoscopic retrograde pancreatography of the graft makes possible direct visualization of the pancreatic duct of the graft and potential therapeutic intervention to preclude laparotomy in these patients. Whether the proteinaceous debris extruded following contrast injection was a consequence of transplanting a pancreas with underlying chronic pancreatitis or a result of potentially delayed transplant of a healthy organ is unknown in this case. However, she has remained well with normal amylase and lipase for 14 months post-ERCP.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References

- [1] Farney AC, Cho E, Schweitzer EJ, Dunkin B, Philosophe B, Colonna J, et al. Simultaneous cadaver pancreas living-donor kidney transplantation: a new approach for the type 1 diabetic uremic patient. *Ann Surg* 2000;232:696–703.
- [2] Gruessner AC, Sutherland DE. Pancreas transplant outcomes for United States (US) and non-US cases as reported to the United Network for Organ Sharing (UNOS) and the International Pancreas Transplant Registry (IPTR) as of June 2004. *Clin Transplant* 2005;19:433–55.
- [3] Boykin KN, Zibari GB. Management of complications of simultaneous kidney–pancreas transplantation with temporary venting jejunostomy. *Clin Transplant* 2003;17(Suppl. 9):65–8.
- [4] Saleem A, Baron TH, Gostout CJ, Topazian MD, Levy MJ, Petersen BT, et al. Endoscopic retrograde cholangiopancreatography using a single-balloon enteroscope in patients with altered Roux-en-Y anatomy. *Endoscopy* 2010;42:656–60.

- [5] de Melo Jr SW, Gupta S, Arenas J, Sreenarasimhaiah J. Single-balloon enteroscopy-guided hemostasis of an anastomotic ulcer in a patient with simultaneous enteric-drained pancreas-kidney transplant. *Endoscopy* 2008; 40(Suppl 2):E164.
- [6] Durlík M, Kosmala W, Milewski J, Serwacka A, Rydzewska G, Rydzewski A. Feasibility of visualization and biopsy of donor duodenum by double-balloon enteroscopy technique in a recipient of simultaneous enteric-drained pancreas-kidney transplant: case report. *Transplantation* 2006;82:578–9.