Scientific letter

Duodenal graft anastomotic leak after 11 years in a patient with pancreas retransplantation[☆]

Fallo anastomótico del segmento duodenal tras 11 años en un paciente con retrasplante pancreático

Simultaneous pancreas–kidney transplantation is the treatment of choice in patients with type 1 diabetes mellitus who have developed end-stage chronic kidney disease, as it improves their survival and quality of life[1,2]. The morbidity and mortality of pancreas transplantation is frequently the result of secondary complications due to immunosuppression, opportunistic infections and surgical complications of the anastomoses[3–6].

We report the case of a patient with isolated pancreas retransplantation with recent pancreatic dysfunction due to acute rejection. He was admitted due to dyspnea and abdominal pain, then diagnosed during hospitalization with pulmonary infection by cytomegalovirus (CMV), later presenting acute abdomen (Fig. 1).

The patient is a 54-year-old man with a history of simultaneous pancreas–kidney transplantation in 2000 due to type 1 diabetes mellitus and end-stage chronic kidney disease. Subsequently, he experienced pancreatic graft failure and underwent isolated pancreas retransplantation in 2009. As immunosuppressive treatment, he was administered prednisone (5 mg/day), mycophenolate mofetil (500 mg/8 h) and tacrolimus (5 mg/day). In 2020, he showed signs of impaired renal function (Cr 2.7 mg/dL) in the context of neurotoxoplasmosis infection, and immunosuppression was reduced to monotherapy with rapamycin (0.5 mg/day). Two months before admission to the Emergency Department, he presented hyperglycemia, need for exogenous insulin, and elevated pancreatic enzymes. Graft biopsy confirmed acute cell-mediated rejection. Serum levels of rapamycin were suboptimal (1 ng/mL), requiring corticosteroids.

The symptoms for consultation in the Emergency Department were dyspnea and abdominal pain. On physical examination, the patient was hemodynamically stable (BP 91/59 mmHg and HR 87 bpm), afebrile, with a respiratory rate of 21 rpm and O_2 saturation 97%. Laboratory tests revealed: leukocytosis (12 460 × 10^6/L), amylase 169 U/L, D-dimer > 2000 ng/mL and creatinine 3.8 mg/dL. Chest X-ray revealed bilateral infiltrates. Given the initial suspicion of pulmonary infection, he was admitted to the Nephrology ward.

During his hospital stay, infection by opportunistic viral pathogens in blood was ruled out by polymerase chain reaction testing. Thoracoabdominal CT showed foci of pulmonary consolidation. Likewise, COVID-19 infection was ruled out. Bronchoalveolar lavage analysis by polymerase chain reaction was positive for CMV (900 copies), so intravenous ganciclovir (2.5 mg/kg/day) was administered. Unexpectedly, the patient presented exacerbated abdominal pain and fever, and an abdominal CT scan revealed hollow viscus perforation and abdominal collections. Given these findings, we decided to perform exploratory laparoscopy.

Intraoperative findings confirmed the presence of diffuse purulent peritonitis and an inflammatory mass in the right iliac fossa; thus, we decided to conduct conversion surgery due to suspected perforation of the duodenal-pancreatic graft. We confirmed dehiscence of the duodenojejunal anastomosis of the graft, resected the anastomosis and restored the tract with a manual jejunojejunal anastomosis. Afterwards, we carried out duodenectomy (graft) and external pancreatic duct stenting due to the local inflammatory process and patient instability.

The postoperative period was optimal, and *Enterococcus faecalis* was isolated in the peritoneal fluid culture. The intra-abdominal drain was removed on the 5th postoperative day after negative amylase tests, and the pancreatic stent was obliterated due to no discharged fluid. On the 8th postoperative day, the patient was discharged from hospital.

At the 30-day check-up, the patient was in good general condition, and the pancreatic stent was removed without
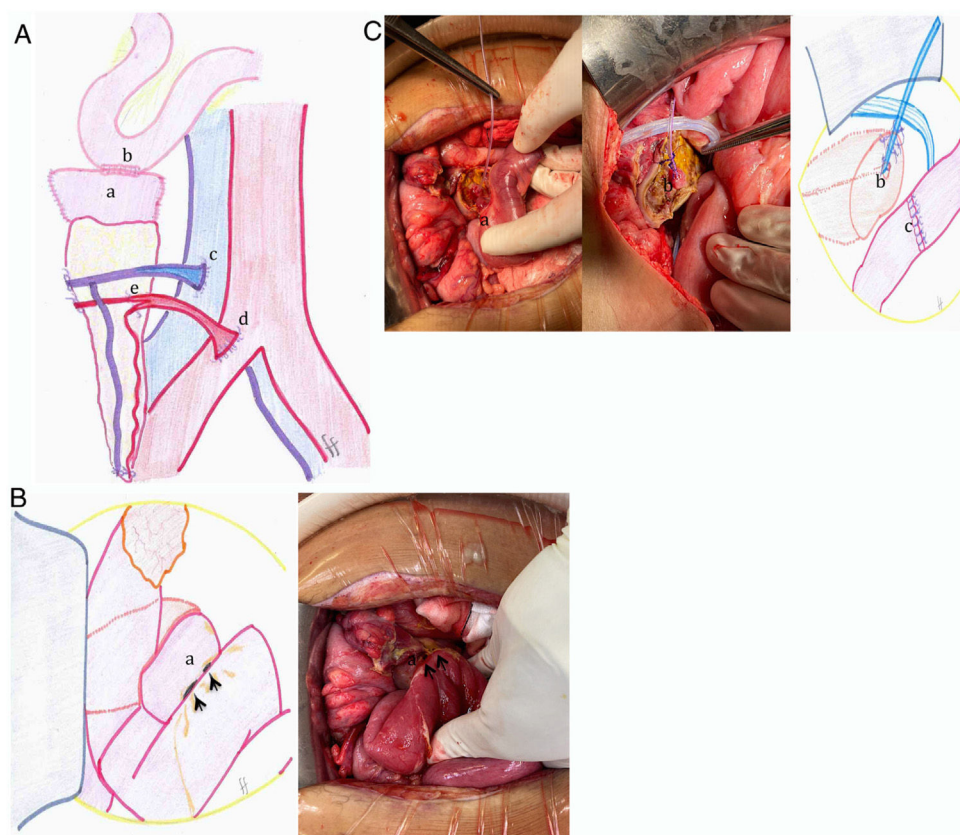
Fig. 1 – (A) Schematic diagram of the pancreatic transplantation: (a) duodenal segment of the pancreatic graft; (b) manual side-to-side bilayer anastomosis between the duodenum (graft) and the jejunum (recipient) 60 cm from the Treitz ligament; (c) end-to-side portocaval anastomosis; (d) arterial reconstruction in 'Y' completed during bench surgery using the iliac artery graft from the donor, anastomosing the superior mesentery artery and splenic artery; end-to-side anastomosis is created with the right primitive iliac artery. (1B) Dehiscence of the duodenojejunal anastomosis: (a) duodenal segment of the pancreatic graft (black arrows = perforations of the duodenojejunal anastomosis). (1C) Surgical technique performed: (a) duodenectomy (of the graft) and resection of the duodenojejunal anastomosis; (b) external stenting of the pancreatic duct; (c) restitution of the intestinal tract by means of end-to-end jejunojejunal anastomosis.

incident. After 60 days, blood glucose levels were under better control, with minimal exogenous insulin requirements (12 U/day), HbA_{1c} 6.3%, C-peptide 0.23 nmoL/L, and stabilized renal function (Cr 2.3 mg/dL).

The rate of duodenojejunal anastomotic dehiscence is a complication reported in 5%–20% of these grafts. It mostly presents in the early postoperative period, and late manifestations are uncommon[3,4]. The appearance of this complication 11 years after isolated pancreas retransplantation is one of the latest-onset cases published in the international literature[7].

The etiology of the duodenal graft perforation was attributed to acute rejection given the findings of the pathological study, which included predominantly chronic mixed inflammatory infiltrate. Likewise, the immunofluorescence analysis for CMV was negative. The series of events that occurred after neurotoxoplasmosis, followed by de-escalation of immunosuppression, triggered acute rejection of the pancreatic graft. The biopsy showed graft rejection and enteric CMV infection (which could not be corroborated in our case), which are factors that have been associated with fistula of the duodenal segment[4,7,8]. It should be noted that,

despite their high sensitivity, histological and immunohistochemical tests cannot rule out intestinal CMV infection[9]. Therefore, its etiopathogenic role in the present clinical case is uncertain, since it was confirmed in the bronchoalveolar lavage.

The techniques usually recommended for the surgical management of graft anastomosis dehiscence are: primary suture of the perforation (if local conditions are favorable) and transplantectomy (in case of sepsis and adverse local conditions)[4,8]. In the case presented, duodenectomy and pancreatic duct stenting were exceptional alternatives to the transplantectomy option (as described by the Minnesota group[10]) and have safeguarded the endocrine function at the 2-month follow-up, benefitting the patient's quality of life.

In conclusion, dehiscence of the duodenojejunal anastomosis as a late complication of pancreatic transplantation is unusual. In this context, acute rejection as well as CMV infection are risk factors, so proper balance and close monitoring of immunosuppressive treatment are essential. In this scenario, pancreatic graft-preserving duodenectomy is a valid surgical option that should be considered.

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Conservative management of gastro-pleural fistula after POSE (primary obesity surgery endoluminal) procedure[☆]

Manejo conservador de fístula gastro-pleural tras procedimiento POSE (*primary obesity surgery endoluminal*)

Endoscopic procedures for the treatment of obesity have generated a growing interest in both patients and surgeons in recent years. They have been proposed as a less invasive alternative to conventional bariatric surgery in individuals who prefer not to undergo high-risk surgical interventions and in whom weight loss has failed after lifestyle modifications. The primary obesity surgery endoluminal (POSE)