Pancreas transplantation: a case of anastomotic leak and intra-abdominal abscess

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Patient: 54 years, male

Clinical History:

Intra-abdominal fluid collections in 54-year-old patient with fever, 1 month after pancreas and kidney transplantation.

Imaging Findings:

One month after a combined kidney-pancreas transplantation with portal-enteric pancreatic drainage, the patient was admitted to our hospital because of abdominal discomfort and fever. Laboratory tests revealed elevated white cell count and inflammatory markers. Abdominal ultrasound (US) examination demonstrated fluid collections and fatty necrosis around the transplanted pancreas. Thus the patient was referred to undergo contrast-enhanced computed tomography (CT) examination of the transplanted organs. CT examination revealed 3 well-formed fluid collections around the head of the transplanted pancreas.

Discussion:

Combined kidney-pancreas transplantation represents the therapy of choice for patients with complications of diabetes mellitus type 1 and chronic renal failure. The transplantation results in complete insulin independence and helps to stabilize or reverse many of the complications associated with diabetes. Major problem of this type of surgery is the high rate of per- and post-procedural complications.

For the pancreas transplantation (isolated or combined with kidney transplantation) two main techniques are available: the portal-enteric drainage and the systemic-bladder drainage. They differ in the venous anastomoses to portal venous system or iliac venous system and exocrine secretion drainage to jejunum or bladder. Drainage of exocrine secretions into the bladder often results in complications such as metabolic alkalosis, cystitis and urinary calculi. That is why enteric exocrine drainage has become the preferred technique of pancreas transplantation. With this technique, drainage is performed using a staple technique, in which the donor duodenum (with donor pancreas) is anastomosed side to side to native jejunum (Figure 1).

The most serious complication of the enteric-drained pancreas transplantation is leakage at the duodenojejunal anastomosis with peritonitis or localized abscess formation. This serious complication usually occurs 1-6 months after transplantation. Patients present with fever, abdominal discomfort and raised inflammatory markers. US and Doppler US are helpful in the assessment of the transplanted organs and of vascular anastomoses. However, contrast-enhanced CT has the advantage of detecting fluid collections and abdominal abscesses. With its high sensitivity it provides accurate diagnosis, anatomic location and extent of the abscesses for treatment planning. In case of anastomotic leak or abscess formation, surgical exploration and repair of the enteric leak is necessary. A decision must be made on whether the infection can be eradicated without removing the pancreas allograft. In our case, revision was made; the abscesses were operatively removed and drained. Candida albicans and Enterococcus faecalis isolates were obtained from cultures; the patient was treated with broad-spectrum antibiotics.
and antifungal and responded well.

**Differential Diagnosis List:** Leak at duodenojejunal anastomosis with formation of intra-abdominal abscess.

**Final Diagnosis:** Leak at duodenojejunal anastomosis with formation of intra-abdominal abscess.

**References:**


Figure 1

Description: Origin:
Abdominal ultrasound examination demonstrated fluid collections around the transplanted pancreas. **Origin:**

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Figure 2

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Figure 3

Description: Contrast-enhanced CT examination revealed 3 well defined fluid collections surrounding the head of the transplanted pancreas. Peripancreatic inflammation and diffuse pancreatic edema are also seen. Origin:
Description: Same as 3a. Origin:
**Description:** The three fluid collections were found to be communicating with each other. **Origin:**
Description: Fluid collections surround the head of the transplanted pancreas, communicating with each other. Transplanted kidney is seen in the left iliac fossa. Origin: