



## GENERAL UROLOGY

## Case Report

# Recurrent pancreatic fistula occurring after nephrectomy in patients with a renal hydatid cyst: a case report

## *Böbrek kist hidatikli hastada nefrektomi sonrasında gelişen tekrarlayıcı pankreatik fistül: olgu sunumu*

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### ABSTRACT

Pancreatic fistula (PF) is an important complication that may develop during intra-abdominal surgeries and following distal pancreas trauma. In the early period, drainage from the surgical site and increased amylase production based on the biochemical examination of the drainage fluid are the factors for diagnosis. In contrast, in association with fluid collected from the surgical site, intra-abdominal abscess and high fever may lead to the diagnosis in the late period. Endoscopic retrograde cholangiopancreatography (ERCP) for the treatment of intra-abdominal fluid collection after PF and intra-abdominal percutaneous stent placement as well as the placement of a pancreatic stent in the pancreatic channel may be alternative methods to stop drainage. However, the complete resolution of fluid drainage may take months. In our case, drainage from the pancreatic fistula area took longer to resolve than the periods previously reported in the English literature. The tail of the pancreas can be injured during the extraction of especially aggressive and metastatic masses from organs near to the distal pancreas. Injury to the tail of the pancreas can also occur during the extraction of benign-like renal hydatid cysts and/or malignant left kidney masses. However, PF can be treated with noninvasive methods, such as percutaneous treatment and ERCP.

**Key words:** Complications; distal pancreatectomy; pancreatic fistula; renal surgery.

### ÖZET

Pankreatik fistül (PF), intraabdominal cerrahiler sırasında oluşabilen ve distal pankreasın travması sonrası meydana gelen önemli komplikasyondur. Erken dönemde cerrahi sonrası operasyon lojundan gelen drenajın kesilmemesi ve gelen sıvının biyokimyasal incelemesi sırasında artmış amilaz oranı tanı koydurucudur. Öte yandan geç dönemde, operasyon bölgesinde biriken mayiye bağlı olarak, intraabdominal abse ve yüksek ateş klinik tablosunu ortaya çıkarabilir. PF sonrası gelişen intraabdominal kolleksiyonun tedavisi için Endoskopik retrograt kolanjiopancreatografi (ERCP) ile pankreatik kanala yerleştirilen pankreatik stent kullanımının yanısıra, perkutan yolla yerleştirilmiş intraabdominal stent, drenajın temizlenip kuruması için alternatif tedavi seçeneği olabilir. Ancak drenajın kesilmesi aylarca devam edebilir. Bizim olgumuzda, pankreatik fistül lojundan gelen dirençli ingilizce yayınlanmış literatürlere göre biraz daha uzun süre devam etmiştir. Distal pankreasa komşu organ cerrahisinde, özellikle agresif ve metastatik kitlelerin çıkarılması sırasında, pankreasın kuyruğu travmaya uğrayabilir. Sol böbrek kaynaklı agresif seyirli renal kist hidatik gibi benign ve malign kitlelerin çıkarılması sırasında nadir olarak distal pankreas yaralanması görülebilir. Ancak pankreatik fistül olgusu perkutan yaklaşım ve ERCP gibi noninvaziv yaklaşımla da güvenli şekilde tedavi edilebilir.

**Anahtar sözcükler:** Distal pancreatektomi; komplikasyon; pankreatik fistül; renal cerrahi.

### Introduction

Pancreatic fistula (PF) is a frequent complication and occurs in approximately 3 to 26% of patients undergoing distal pancreatectomy (DP). PF may lead to an intra-abdominal abscess and bleeding.<sup>[1,2]</sup> DP usually consists of the resection

of pancreatic parenchyma without portal vein resection. DP may be performed with or without splenectomy in cases of benign lesions and left renal mass surgery.<sup>[3,4]</sup> In the present case, we present a patient with a PF that occurred after surgery for a hydatid cyst with aggressive adhesiveness to the distal pancreas.

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## Case report

The case involved a 58-year-old male patient. His body mass index was 38.8 (height: 180 cm and weight: 130 kg). He was admitted to the out-patient clinic with a complaint of left lumbar region pain. An immobile mass in the left upper quadrant was found on physical examination. Blood biochemistry and urine tests were normal. A solid mass, which included a tiny cystic region of 150x120 mm, was identified in the left upper and middle renal area by ultrasound. An enlarged cystic necrotic mass lesion that was approximately 15x12x12 cm in size and included a thin wall and central calcifications was found between the left upper and middle renal vein by computed tomography (Fig. 1). The renal mass was next to the distal pancreas, the curvatura major of the stomach and the splenic hilus. The patient was preliminarily diagnosed with a complicated cyst and accepted to the urology department for surgery. The operation was performed with chevron incision under general anesthesia. The mass moved renal to posterior and inferior. It was observed to be adhered to the colon and distal pancreas in the middle and the spleen in the upper posterior regions. The mass borders were not renal. It was highly adhered to surrounding organs and removed from the kidney. It was meticulously removed from the colon, distal pancreas and spleen, sometimes with dissection using ligature. The mass and the left kidney, which had severe damage, were removed. The pathologic result of the patient, who was diagnosed with a complicated renal cystic mass, was a renal hydatid cyst. After the surgery, albendazole therapy was started.

Following the operation, biochemical evaluation was performed on the liquid from the nephrectomy region. The amylase concentration was higher than 5000 IU in the drainage liquid. Endoscopic retrograde cholangiopancreatography (ERCP) revealed a pancreatic fistula, and a pancreatic stent was inserted. The patient was discharged after stent removal because there was no drainage from the operation site five days later. During the follow-up, he was admitted to the emergency department with a complaint of high fever and abdominal pain 14 days later. Collection was found in the operation region by abdominal tomography and ultrasonography, and a percutaneous stent was placed in the collection area (Fig. 2). The drainage fluid amylase level was 5000 IU. Then, ERCP revealed a pancreatic fistula, and a pancreatic stent was inserted (Fig. 3). The patient was discharged with the drain, and drainage stopped 70 days later. The pancreatic stent was left in place for a long period. The patient was followed up at 3-month intervals.

## Discussion

PF is observed by clinicians after distal pancreatectomy. Factors affecting the rate of PF are as follows: underlying disease (i.e., malignancy or trauma), methods of the pancreatic transection,

technique of stump closure and concomitant splenectomy. PF is generally defined based on 3 main criteria: amylase concentration in drainage fluid, number of days of drainage and output of drainage. Some of the definitions are either inaccurate (including patients with “amylase-rich” fluid drainage) or highly limiting (>30 mL daily drainage of fluid containing at least 5000 IU of amylase for more than 10 days). The frequency of PF related to DP was reported as 23%, and it frequently develops within the first 21 days (range, 3 days to 65 days). The PF tract is high-

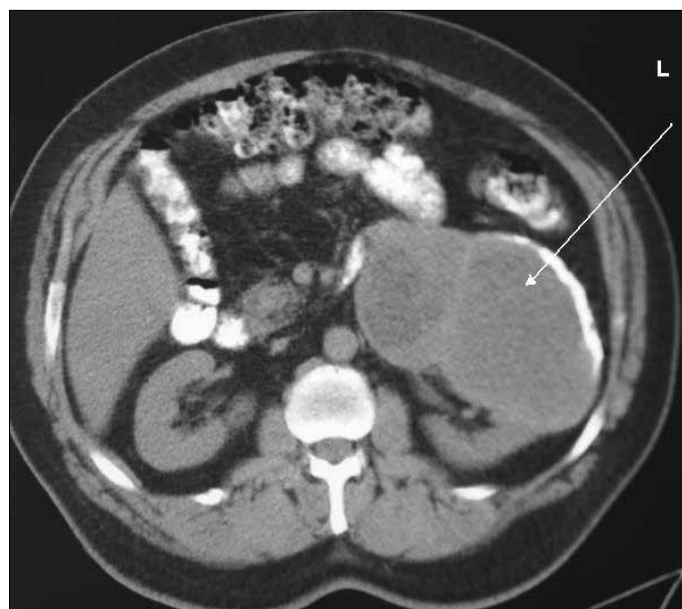


Figure 1. A preoperative image of the enlarged cystic necrotic mass lesion by computerized tomography



Figure 2. An image of right kidney (arrow 1) and the postoperative view of the collection at the left nephrectomy area and the image of the drain catheter by computerized tomography (arrow 2)

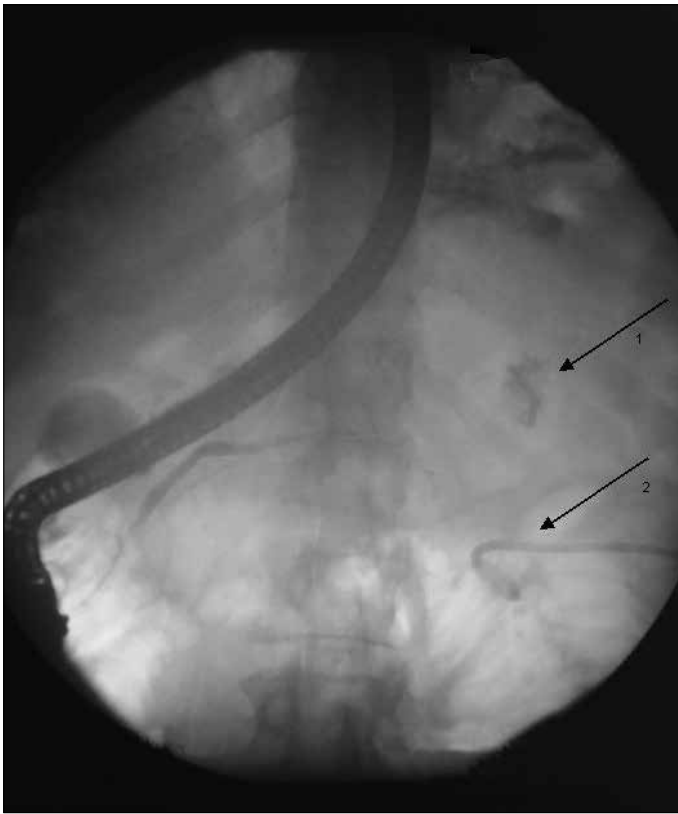


Figure 3. The reflux of opaque matter at pancreatic fistulography observed during ERCP (arrow 1). An image of the drainage stent placed in the collection area (arrow 2)

ly likely to recover after the maintenance of intraoperatively placed drains and additional percutaneous drains when necessary.<sup>[5-8]</sup> In our study, there was approximately 100 mL daily fluid drainage with 5000 IU of amylase for 5 days. On the fifth day after the PS was placed by ERCP, drainage stopped, and the drain was removed. The patient was then discharged.

Previous studies differentiated PF from an intra-abdominal abscess without determining the amylase level in the abscess fluid.<sup>[5]</sup> Our patient presented to the emergency service with a complaint of high fever and abdominal pain two weeks later. A collection that measured 13x13 cm, which is considered to be an abscess, was found in the operation region by abdominal CT. A percutaneous drainage tube was inserted under local anesthesia with CT guidance. The amylase level in the collection was more than 5000 IU. The patient was considered to have recurrent pancreatic fistula. Then, a PS was reinserted by ERCP.

Pancreatic fistulae are complicated by the triangular shape of the pancreatic body, which impedes the completion of both atraumatic and tight sutures of the stump, whereas the oblong-shaped neck is easier to close. Additionally, in chronic pancreatitis, pancreatic division at the body increases the risk of persistent

main duct stenosis downstream of the stump closure. In fact, the main pancreatic duct seldom eludes detection if sharp and careful transection of the pancreas is performed. One of the factors that cause pancreatic fistula could be body mass index due to surgery on malignant tumors or benign masses of kidney-like renal hydatid cysts. The body mass index might be an important risk factor for PF in these cases.<sup>[4-8]</sup> Although we removed the hydatid cyst mass, which adhered to the distal pancreas, with ligature and meticulous dissection, we observed a pancreatic fistula after the operation. Our patient was an obese man whose body mass index was 38.8, which may have played a role in PF development. These technical factors have complicated many attempts to reduce the occurrence of PF after DP by division of the pancreas with an electrocautizer or ultrasonic dissector, occlusion of the pancreatic duct with prolamin or fibrin glue sealing, and suture of the pancreas with a stapler using a gastric or jejunal seromuscular flap.<sup>[9-11]</sup> The management of PF following DP is not completely standardized. It includes the maintenance of intraoperatively placed drains and additional percutaneous drains when necessary. As previously reported, the pancreatic fistula closed in all cases in a spontaneous manner.<sup>[5,6]</sup> In our study, a stent was inserted with ERCP immediately after the clinical and radiologic diagnosis of pancreatic fistula in the early post-operative period. The patient was discharged five days later after drainage from the operative region stopped, and the PS was removed. However, he was admitted to the emergency department with a complaint of high fever and abdominal pain 14 days later. A collection was found in the operation region by abdominal tomography and ultrasonography, and a percutaneous stent was placed in the collection area.

In summary, PF can be observed after distal pancreatectomy. Its frequency increases with pancreatic division at the body level (vs at the neck) and in the absence of elective ligation of the main pancreatic duct. Regular drainage of the pancreatic remnant does not hinder postoperative collection. Currently, there is no a routine treatment approach for PF. Following the maintenance of intraoperatively placed drains and additional percutaneous drains, inserting a PS is a reliable and effective method for PF management.

#### Conflict of interest

No conflict of interest was declared by the authors.

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