

## Effects of Fistulojejunostomy in Treatment of Pancreatic External Fistula

Li KY\*, Wang CL, Li T, Shi CX, Huang JZ and Tang KL

Department of Hepatobiliary Surgery, Guizhou Provincial People's Hospital, Guiyang city, Guizhou Province, China

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### 2. Key words

Fistulojejunostomy; Pancreatic external fistula; Treatment; Effects

### 1. Abstract

**1.1. Objective:** to investigate the effects of fistulojejunostomy in treatment of pancreatic external fistula.

**1.2. Design and setting:** The work was designed as observational studies and the work was developed in Department of Hepatobiliary Surgery, Guizhou Provincial People's Hospital, Guiyang city, Guizhou Province, China.

**1.3. Methods:** Using fistulae-jejunum Roux-en-Y anastomosis to treat 6 pancreatic external fistula patients who underwent severe acute pancreatitis surgery

**1.4. Results:** All patients recovered 4 to 6 days, means  $4.9 \pm 0.5$  days; no one underwent complications.

**1.5. Conclusions:** Fistulae-jejunum Roux-en-Y anastomosis is an easy, safe and reliable method to treat pancreatic external fistula, which preserves pancreatic exocrine and endocrine function, the recommending surgery within 3 to 6 months after onset of pancreatic external fistula.

### 3. Introduction

Pancreatic fistula is traditionally classified as internal fistula and external fistula, which is a complication after surgery to treat severe acute pancreatitis, vater peri-ampullary carcinomas, other abdominal disease and abdominal trauma. It is very tricky to treat pancreatic external fistulas, especially to those who undergo severe acute pancreatitis surgery. We used fistulae-jejunum Roux-en-Y anastomosis to treat 6 pancreatic external fistulas patients who underwent severe acute pancreatitis surgery and had good effects, reported below.

### 4. Method

All patients with pancreatic external fistulas underwent severe acute pancreatitis surgery for more than 3 months and the drainage fluid collections of each patient were more than 50 mL/day, patients were made a definite diagnosis of pancreatic external fistulas via high amylase levels of clear drainage fluids ( $>10,000$ u/L). Patients with pancreatic pseudocysts, pancreatic necrosis, peri-pancreatic or pancreatic abscess, pancreatic tumor, sepsis, ascites, hemorrhage, pancreatic internal fistula, complicated other digestive fistula and had other surgery indications were excluded from

the study; Patients with abdominal pain, abdominal distension and other symptoms or signs of peritonitis were also excluded from the study. According to this criterion, 6 patients were selected from Department of Hepatobiliary Surgery, Guizhou Provincial People's Hospital from January of 2011 to September of 2016. 2 patients were male and 4 patients were female, aged from 25 to 62 years, means  $42.5 \pm 6.8$  years; Patients underwent severe acute pancreatitis surgery for 3 to 6 months, means  $4.6 \pm 0.4$  months. The drainage fluid collections of each patient were from 100 to 300 mL/day, means  $183 \pm 25$  mL/day. All patients must be evaluated preoperatively and perioperatively including patient's history, blood tests, abdominal computerized tomography and abdominal ultrasonogram, etc.

We found the fistulae at the end of drainage tube and conducted fistulae-jejunum Roux-en-Y anastomosis. We didn't use any other stent for fistulojejunostomy. And routinely an abdominal drain was placed under the anastomotic stoma at the end of the surgery. The abdominal drain was extracted on the 7th to 9th postoperative day once abdominal was clear (via ultrasonogram).

### 5. Results

All patients recovered 4 to 6 days, means  $4.9 \pm 0.5$  days; no one

\*Corresponding Author (s): Ke-Yue Li, Department of Hepatobiliary Surgery, Guizhou Provincial People's Hospital, 550002, Guiyang city, Guizhou Province, China. Tele: +86-13885041524; 86-0851-85621756, E-mail: keyuelee@sohu.com; keyuelee@qq.com

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underwent anastomotic fistula, anastomotic stricture, pancreatic pseudocysts, acute pancreatitis and other complications. All patients were followed-up at least 3 months.

## 6. Discussion

Most pancreatic external fistulas are iatrogenic in etiology. Penetrating abdominal trauma is a rare non-iatrogenic cause of pancreatic external fistulas. The best strategies for the management of pancreatic external fistulas is still highly debated especially to those undergo severe acute pancreatitis surgery. Many early pancreatic external fistulas patients are likely to respond to conservative therapy, such as gastrointestinal decompression, use of octreotide or somatostatin, nasojejunal feeding, etc. For unresponsive patients, the pancreatic external fistulas may last for weeks, months or years, and other interventions are generally required. Different strategies include both preservation of the pancreatic remnant and a completion pancreatectomy. Completion pancreatectomy avoids further pancreatic external fistulas but leads to complete pancreatic insufficiency and “brittle” diabetes [1]. Preserving approach—debridement and drainage of the dehiscent pancreatic region is technically easier and preserves remnant pancreatic functions. Internal drainage by pancreaticogastrostomy or pancreaticojejunostomy is safe and successful for treatment of pancreatic external fistulas [2]. Drainage of dehiscent pancreatic region followed by gastrofistulostomy is also useful to treat pancreatic external fistulas [3]. Report demonstrates that only using pancreatic stent for treatment of pancreatic external fistulas is effective [4]. Fistulojejunostomy is useful to treat pancreatic external fistulas, recommending surgery within 1.5-3 months after onset of a pancreatic fistula [5], whereas others recommend waiting for 6 months or 1 year, because part of pancreatic fistula spontaneously close after the acute episode, an additional advantage of delayed treatment is optimization of patient nutritional, functional status and development of a robust fistula tract allowing for a more robust target for Roux-en-Y drainage [6, 7]. Our group chose fistulae-jejunum Roux-en-Y anastomosis to treat pancreatic external fistulas because it was very difficult to find dehiscent pancreatic region and the enormous risk of debridement the main pancreatic duct and converted to pancreaticogastrostomy or pancreaticojejunostomy. According to our experience, Fistulae-jejunum Roux-en-Y anastomosis was safe, easy and reliable to perform, which preserved pancreatic exocrine and endocrine function, and the recommending surgery was 3-6 months after onset of pancreatic external fistulas, the fistula tract was robust enough to perform Roux-en-Y drainage. Six patients with pancreatic external fistulas after severe acute pancreatitis surgery were successfully closed the pancreatic external fistulas and had no com-

plications. On the other hand, whether this operation method will lead to increase risk of fistula stricture, pancreatic pseudocysts and acute pancreatitis in long time was still need to study. There was a need for much investigation about fistulae-jejunum Roux-en-Y anastomosis to treat pancreatic external fistulas after severe acute pancreatitis surgery.

## 7. Conclusion

Fistulae-jejunum Roux-en-Y anastomosis is an easy, safe and reliable method to treat pancreatic external fistulas, which preserves pancreatic exocrine and endocrine function, the recommending surgery within 3 to 6 months after onset of pancreatic external fistulas.

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