Acute Pancreatitis as a Long-term Complication of Pancreatectomy

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To the Editor: Acute pancreatitis (AP) is a common digestive disorder with a broad spectrum of etiologies.[1] Apart from gallstones and alcohol abuse which are two of most common etiologies of AP, all of other potential causes need to be considered. Pancreatectomy is the surgical removal of all or part of the pancreas, which includes pancreaticoduodenectomy (PD), distal pancreatectomy, segmental pancreatectomy, and total pancreatectomy. These procedures are used in the management of several diseases involving the pancreas, ampulla, extrahepatic bile duct, and duodenum. Based on the previous researches and studies, it was well accepted that pancreatectomy is associated with a series of common complications such as pancreatic fistula, postsurgical hemorrhage, and delayed gastric emptying.[2] As a less frequent immediate surgical complication, postoperative AP occasionally appears just after the surgery on the pancreas. The mechanism involves direct trauma to the pancreatic parenchyma caused by pancreatectomy. To date, there has been little work on AP as a long-term complication following any pancreatectomy procedure.

This retrospective study was conducted over a time period from January 2013 to May 2015. Candidates of AP patients who were diagnosed with the disease after at least 1 month of pancreatectomy were recruited. According to the Revised Atlanta Classification, AP falls into the category of mild AP (MAP), moderately severe AP (MSAP), and severe AP (SAP). All of other etiological factors including alcohol abuse, gallstones, and medicine consumption were excluded before patients were suspected to have postpancreatectomy-induced pancreatitis.

A total of 742 patients who received pancreatectomy in the First Affiliated Hospital with Nanjing Medical University (Jiangsu, China) were recruited into the study. Among them, there were only eight patients who developed AP after at least one month of the surgery being included in the study, with 1.1% of the incidence rate of postpancreatectomy-induced pancreatitis.

The occurrence of a stricture is likely to induce obstructive pancreatitis in some individuals and may contribute to episodic pancreatitis events.

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In the present study, positive finding was detected by the MRCP only in two individuals; however, even if the result of MRCP was normal, PJS cannot be ruled out directly. A previous study has found that secretin-MRCP could be a more useful approach to diagnose because it allows for a “functional” test of the remnant pancreas and is more discriminating for ductal stenosis than traditional static MRCP.[4]

Endoscopic retrograde cholangiopancreatography (ERCP) is one of the traditional endoscopic approaches for the treatment of symptomatic PJS, although it has met with limited technical success so far. Recently, multiple additional novel techniques involving direct transgastric puncture of the pancreatic duct under endoscopic ultrasonography guidance have been attained more technical and clinical success.[5]

Surgical reconstruction of PJS for intractable pain has been successful, whereas the operations are comparatively complicated and difficult. In the study, revision surgery for the original anastomosis of pancreatic duct and jejunal mucosa was carried out in only two patients whose distal pancreatic duct was detected to be dilated through MRCP. For the rest of patients, conservative treatment was performed. However, the true incidence of anastomotic stricture formation in this series may be underappreciated for lack of surgical evidence in the rest of six patients.

Based on the cases of the study, we suggested that patients who receive pancreatectomy are required to be warned about the possible complication of developing AP in the future time. Although the specific pathology of postoperative AP as a long-term complication is still not fully understood, stricture of the pancreaticojejunalostomy is possibly one of the main causes of the rare complication. The relationship between PJS and AP can be observed by the means of secretin-MRCP. In most cases with PJS, we recommend minimally invasive methods, such as enteroscopy-assisted ERCP first; however, surgery will be considered if minimally invasive treatment is ineffective.

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**Conflicts of interest**

There are no conflicts of interest.

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**Table 1: General information of eight cases of postpancreatectomy patients complicated with acute pancreatitis**

| Case number | Age (years) | Gender | Primary disease | Surgical procedures | First onset time (months) | Recurrence | LOS (days) | Reoperation |
|-------------|-------------|--------|-----------------|---------------------|--------------------------|------------|------------|-------------|
| 1           | 24          | Female | Intraductal papillary mucinous neoplasm | PPPD                | 15.5                     | 4          | 8          | No          |
| 2           | 38          | Male   | Pancreatic mucinous cystadenoma          | MSP                 | 12.0                     | 6          | 10         | No          |
| 3           | 64          | Male   | Pancreatic mucinous cystadenoma          | MSP                 | 13.7                     | 2          | 9          | Duct-to-mucosa anastomosis |
| 4           | 62          | Female | Periampullary inflammation               | PPPD                | 31.2                     | 2          | 10         | No          |
| 5           | 63          | Female | Gastric cancer with duodenum invasion    | PD                  | 4.8                      | 1          | 12         | No          |
| 6           | 45          | Male   | Mass-forming pancreatitis                | PD                  | 8.0                      | 2          | 8          | Duct-to-mucosa anastomosis |
| 7           | 43          | Male   | Pancreatic mucinous cystadenoma          | PD                  | 18.0                     | 1          | 16         | No          |
| 8           | 42          | Female | Pancreatic neuroendocrine tumor          | MSP                 | 7.1                      | 1          | 10         | No          |

PD: Pancreatecto-duodenectomy; PPPD: Pylorus-preserving PD; MSP: Middle segment pancreatectomy; LOS: Length of hospital stay.