

Postoperative Duodenal Obstruction: Etiology, Pathogenesis, Clinical Features and Problem Resolving

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Opinion

As we all well known, the pancreatic cystic neoplasm is very common in clinical practice, which sometimes is recognised as an indication of limited local surgery due to its convenience and safety as well [1,2]. Generally, if the size in diameter of pancreatic cystic neoplasm less than 3.0 cm, major of them should be recognized as benign and supervenience for them is accessible. As a matter of fact, the neoplasma carcinomalization judged only by size of cyst is not completely correct. Active surgery intervention may be more helpful. However, postoperative ischemia-origin duodenum obstruction was rarely reported except for Wan et al. reported last year [3]. Although the hospital mortality is less than 1% [4], ischemia duodenal obstruction after surgery is very interesting for some surgeons and to be worthy of discussing once again. Herein, authors would like to share their experience of limited case.

Despite of precisional enucleation for pancreatic cystic mass and other pancreatic diseases (i.e. Inflammatory mass, neuroendocrine tumor) performed well [5-7], some surgeons may likely make mistakes by ignorance of duodenum blood supply due to lack of awareness. As a result, the patient may suffer from ischemia-origin duodenum-related complications.

As a matter of fact, duodenum has a quite complex but fragile vascular system, which is likely to be damaged due to unskillful surgical procedures or lack of awareness of reserving essential tissue closer to duodenum or diathermy burn by misusing of some surgical equipments. Theoretically, the duodenum blood supply system consists of branches of anterior/posterior pancreaticoduodenal arteries, the end of branch of which may go along with periduodenal tissues. If it is removed unintentionally, duodenum will lose enough blood supply accordingly. Hence, at least over the level of duodenal papilla, about 0.5~1.0 cm length of metric tissue around the margin of duodenum, should be protected as normally. Once ischemic duodenum is found during surgery, a segment of duodenal resection and end-to-end duodenum to duodenum anastomoses should be performed in time. However, duodenum obstruction after limited surgery appears to be no way to deal with except for wait-to-see or reoperation. Obviously, non-surgical managements may be priority.

In authors' expertise, these findings may be helpful to make an early judgement.

- Obvious symptoms of nausea and vomiting when the patient taking meal, but mild physical signs found.
- Obvious thickened wall of duodenum, but no specific findings intra- and extra-duodenum luminal.
- Various inflammatory markers are often normal.

- The time of delayed gastric emptying is beyond expectancy.

The findings are easily confirmed by duodenoscopy and/or contrast X-ray examination of upper digestive tract. More importantly, it's necessary to get to know about the true processing concerning on the key steps. It is noteworthy that diathermy burn to vessels net around duodenum maybe the another important factor.

In the past, placement of short-term duodenal stent was needed to allow food navigating through duodenum. But this way is not surpass than a month. In addition, the placement of stent or drainage tube sometimes is not so easy to be performed to negotiate a very stricture passage of duodenum. What we can do?

Erythromycin recognized firstly as an antibiotic. But its adverse effects of promoting gastrointestinal movement also play an important role to settle gastric paralysis or inflammatory intestinal obstruction.

There is a clinical case in authors' experience.

A 48-year-old male was admitted with an asymptomatic cystic neoplasm of the processus uncinatus. He had no history of pancreatitis, did not consume alcohol, smoke, or abuse drugs. All serum tests, including tumor markers, were normal without specific findings, while an enhanced CT scan of the pancreas, endoscopic (gastroscopy) ultrasonography (US), and baseline US of the pancreas suggested a cystic lesion with a diameter of 2 cm (Figure 1A). We performed surgical resection. However when he attempted to eat on postoperative day 3, he developed abdominal distension and vomited. Thus, a gastric tube was inserted and drainage was performed on postoperative day 7. Contrast radiology of the upper gastrointestinal tract via oral diatrizoate meglumine revealed delayed gastric-emptying due to duodenal obstruction (Figure 1B). A postoperative re-CT scan of the abdomen showed obvious thickening of the duodenal wall and slight fluid collection in the operative field between the posterior stomach and the third part of the duodenum (Figure 1C). Herein, Jia et al. [7] firstly applied large dose of Erythromycin, aiming to improve the ischemic duodenal obstruction, for the first time was applied authors' previous report [3]. Combination with Procaine, Dexamethason irrigated into duodenal luminal cavity does matter to resolve postoperative ischemia-origin duodenum obstruction as significantly.

Remarkably, in clinical practice, there are too many similar factors to be identified clearly, the wise strategy is let issue go, because what we indeed need is to settle problem rather than identifying the etiology or detailed data.

In conclusion, once ischemia-origin duodenal obstruction after limited local surgery is confirmed or suspected, early applications of large amount of Erythromycin intravenous combined with irrigating

Dexamethasone or Procaine into the obstructive duodenum may be worth learning.

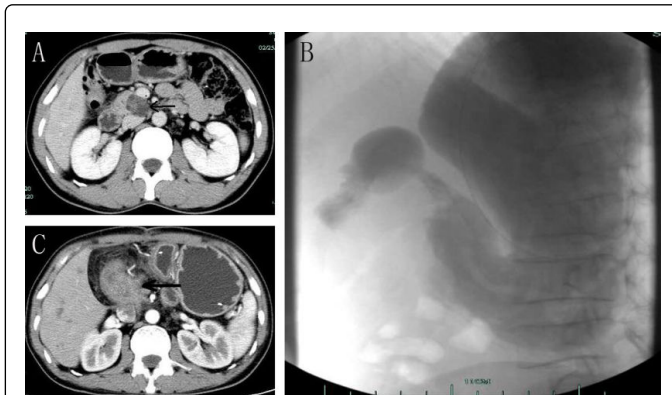


Figure 1: **A:** Computed tomography (CT) image showing a tumor with a diameter of approximately 2 cm (arrows). **B:** An X-ray image showing delayed gastric-emptying due to duodenal obstruction. **C:** A CT image showing thickening of the duodenal wall (arrows).

Declaration

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2016C33208, the initiation and regulation of NF- κ B expression on the inflammatory cascade of ERCP after acute pancreatitis in MSC.

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