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THE BILIODIGESTIVE ANASTOMOSIS SELECTION WITH PANCREATODUODENECTOMY

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The article presents an analysis of surgical treatment of 204 patients with obstructive disease in pancreatoduodenal region who underwent pancreatoduodenectomy (PDE) during period from 1991 to 2014. In case of head of the pancres cancer, PDE was provided for 165 (80,9 %) patients, In case of ampulla of Vater cancer for 24 (11,8 %). For tumor in distal choledoch PDE was provided for 6 (2,9 %) patients. 9 (4,4 %) patients with an fibrous inflammatory mass in the head of the pancreas associated with biliary, pancreatic duct and duodenal obstruction, also underwent PDE. During reconstructive stage after PDE, among all variants of biodigestive anastomoses, hepaticojejunostomy and choledochojejunostomy were mach more preferably than cholecystojejunostomy. Applied a differentiated approach to the choice of biliodigestive anastomosis. During reconstructive stage after PDE increased the distance between pankreatoejejunoanastomosis and biliodigestive anastomosis was increased when they applied on a single loop of jejunum.

***Keywords**: biliodigestive anastomoses, pancreatoduodenectomy, differentiated approach.*

ВИБІР БІЛІОДИГЕСТИВНОГО АНАСТОМОЗУ В РАЗІ ПАНКРЕАТОДУОДЕНАЛЬНОЇ РЕЗЕКЦІЇ

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Представлено аналіз хірургічного лікування 204 хворих на обструктивні захворювання панкреатодуоденальної зони, яким виконали панкреатодуоденальну резекцію з 1991 по 2014 р. У випадку раку голівки підшлункової залози панкреатодуоденальну резекцію виконано 165 (80,9 %) хворим, у разі раку великого дуоденального сосочка — 24 (11,8 %), за раку дистального відділу холедоха — 6 (2,9 %), у разі хронічного головчастого псевдотуморозного панкреатиту — 9 (4,4 %) хворим. На реконструктивному етапі панкреатодуоденальної резекції біліодигестивний анастомоз частіше виконували у вигляді гепатикоєюноанастомозу, холедохоєюноанастомозу і рідше накладався холецистоєюноанастомоз. Застосовано диференційований підхід до вибору біліодигестивного анастомозу. Під час виконання реконструктивного етапу панкреатодуоденальної резекції збільшено відстань між панкреатоєюноанастомозом і біліодигестивним анастомозом у разі накладання їх на одну петлю тонкої кишки.

***Ключові слова**: біліодигестивний анастомоз, панкреатодуоденальна резекція, диференційований підхід.*

THE BILIODIGESTIVE ANASTOMOSIS SELECTION WITH PANCREATODUODENECTOMY

Канд. мед. наук С. Э. Арутюнов

Представлен анализ хирургического лечения 204 больных с обструктивными заболеваниями панкреатодуоденальной зоны, которым выполнена панкреатодуоденальная резекция с 1991 по 2014 г. При раке головки поджелудочной железы панкреатодуоденальная резекция выполнена у 165 (80,9 %) больного, при раке большого дуоденального сосочка — у 24 (11,8 %), при раке дистального отдела холедоха — у 6 (2,9 %), при хроническом головчатом псевдотуморозном панкреатите — у 9 (4,4 %) больных. На реконструктивном этапе панкреатодуоденальной резекции билиодигестивный анастомоз чаще выполнялся в виде гепатикоеюноанастомоза, холедохоеюноанастомоза и реже накладывался холецистоеюноанастомоз. Применен дифференцированный подход к выбору билиодигестивного анастомоза. При выполнении реконструктивного этапа панкреатодуоденальной резекции увеличено расстояние между панкреатоеюноанастомозом и билиодигестивным анастомозом при наложении их на одну петлю тощей кишки.

***Ключевые слова**: билиодигестивный анастомоз, панкреатодуоденальная резекция, дифференцированный подход.*

Nowadays pancreatoduodenectomy is one of the possible approaches for curing obstructive diseases of pancreatoduodenal region, but the choice of the biliodigestive anastomosis remains a matter of debate [1, 4, 8]. Most surgeons prefer to provide reconstruction phase of the operation with the formation of anastomoses on a single loop of jejunum, although there are opinions about the separation performance of anastomoses on the different loops of the small intestine [2, 6, 10]. The choice of configuration and method of confirming biliodigestive anastomosis, on reconstructive stage of PDE, requires additional study. [3, 5, 7, 9].

The purpose of the study. Confirming of a differentiated approach to the choice of configuration of biliodigestive anastomosis on reconstructive stage of pancreatoduodenectomy.

MATERIALS AND METHODS

The article presents an analysis of surgical treatment of 204 patients with obstructive diseases of pancreatoduodenal region who underwent pancreatoduodenectomy (PDE) during period from 1991 to 2014. The age of patients ranged from 31 to 75 years old. Female — 83 (40,6 %), male — 121 (59,4 %). In case of head of the pancres cancer, PDE was provided for 165 (80,9 %) patients, In case of ampulla of Vater cancer for 24 (11,8 %). For tumor in distal choledoch PDE was provided for 6 (2,9 %) patients. 9 (4,4 %) patients with an fibrous inflammatory mass in the head of the pancreas associated with biliary, pancreatic duct and duodenal obstruction, also underwent PDE.

The following instrumental methods of investigation was applied: ultrasound of the abdominal cavity; endoscopic retrograde cholangiopancreaticography (ERCP); CT scan, magnetic resonance tomography. Biliodigestive anastomosis was performed more frequently in the form of hepaticojejunostomy, choledochojejunstomy and less as cholecysistojejunstomy. Biliodigestive anastomosis was performed on the same enteric loop that pancreatojejunostomy. Statistical processing was executed on a personal computer using a standard software package Microsoft Office Excel 2013.

RESULTS AND DISCUSSION

Among patients who underwent PDE, 169 patients (82,8 %) had obstructive jaundice, without jaundice — 35 (17,2 %). Among 204 patients with obstructive diseases pancreatoduodenal region, 18 (8,8 %) patients had a history of cholecystectomy performed. 11 (5,4 %) patients diagnosed with a combination of obstructive diseases of pancreatoduodenal region and cholelithiasis with the presence of stones in the gallbladder.

In 192 (94,1 %) patients PDE performed in one step. In 12 (5,9 %) patients PDE provided into two steps and at that. On the first step of treatment, bilidigestive anastomosis was confirmed: for 8 (3,9 %) patients — cholecystojejunoanastomosis, for 4 (2,0 %) — cholecystectomy and hepaticojejunoanastomosis were confirmed. This group of patients was not included in this study.

In 192 (94,1 %) patients to confirm anastomosis biliodigestive anastomosis during PDE differentiated approach had been applied. In addition to selecting configuration of biliodigestive anastomosis, determination of the distance between pancreatojejunostomy and biliodigestive anastomosis was important, which is limited by location choledoch's stump and pancreatic stump. In 22 (11,5 %) patients the gallbladder have been used to confirm biliodigestive anastomosis. The indications for cholecystostomy were: small lumen of common bile duct (less than 5,6 mm) in patients who had no signs of jaundice, adequate patency of the cystic duct. When gallbladder used for confirming biliodigestive anastomosis, mechanical obstruction of choledoch and cystic duct can cause development of cholelithiasis and cholangitis attacks. This pathology was seen in 3 (13,6 %) patients, it required reoperation with cholecystectomy, hepaticolithotomy, confirming of hepaticojejunostomy. In 2 (9,1 %) patients with recurrent cholangitis, mikrocholelithiasis a conservative therapy with cholelithic drugs (Ursofalk) was provided.

In most patients, either with signs of biliary hypertension or with no signs of bile hypertension, but with adequate width of choledoch (more than 7–8 mm) was performed cholecystectomy, confirming of biliodigestive anastomosis with choledochojejunostomy or hepaticojejunostomy. Choledochojejunostomy performed in 79 (43,6 %), while indications were the presence of a small tumor in the major duodenal papilla and the head of the pancreas, the absence of enlarged lymph nodes in the hepatoduodenal ligament, presence of pseudotumorous pancreatitis which involves the head of the pancreas. In 91 (47,4 %) patients indications for proximal resection of common bile duct with hepaticojejunostomy were tumor in the head of the pancreas bigger than 4 cm, tumour of distal choledochus. In recent years (from 2009–2010) at the reconstructive stage for confirming biliodigestive anastomosis our preference is given to the hepaticojejunostomy (table 1).

Table 1

Variants of bilidigestive anastomosis during pancreatectomy

Variants of bilidigestive anastomosis	Noumber	%
I. Hepaticojejunostomy	91	47,4
II. Choledochojejunostomy	79	41,1
III. Cholecystojejunostomy	22	11,5
Total	**192**	**100**

Pancreatojejunostomy (PJS) and biliodigestive anastomosis imposed at close range (8–9 cm) apart, were confirmed in 48 (25,0 %) patients. Shortest distance between two precision anastomosis leads to a high risk of their leack, especially in condition of postoperative paresis while allocating a sufficiently large volume of pancreatic juice and bile. 7 (14,6 %) patients had failure of the pancreatojejunostomy, 3 (6,3 %) of them had a partial failure of the pancreatojejunostomy, which led to the development of pancreatic fistula. In 2 (4,2 %) patients in the postoperative period there was a partial failure of the biliodigestive anastomosis: in 1 (2,1 %) — after choledochojejunostomy in 1 (2,1 %) — after

hepaticojejunostomy. Pancreatojejunostomy and biliodigestive anastomosis confirmeded at a distance (10–14 cm) apart, were performed in 103 (53,6 %) cases. In 5 (4,9 %) cases inconsistency of pancreatojejunostomy, in 4 (3,9 %) — a pancreatic fistula, 2 patients (1,9 %) — biliary fistula were seen.

When pancreas is soft, «juicy» and a presented greater risk of postoperative pancreatitis, partial or complete failure pancreatojejunostomy we propose «produce» more free loop of the small intestine near 15–17 cm length for confirming hepaticojejunostomy below the place where it turns to mesenteric «window» side.

Such variant of hepaticojejunostomy arrangement creates better conditions for the outflow of bile, relieving tension with the initial anastomotic bowel loops in the pancreatojejunostomy area. This method was applied in 39 (20,3 %) patients. In the postoperative period in these patients inconsistency of the pancreatojejunostomy occurred in 1 (2,6 %), pancreatic fistula — in 2 (5,1 %).

CONCLUSIONS

Differentiated approach to the choice of biliodigestive anastomosis, as well as increasing the distance between pancreatojejunostomy and biliodigestive anastomosis during performing reconstructive phase of PDE, enabled to reduce the frequency of their insolvency to 7,7%.

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