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PECULIARITIES OF SURGICAL TREATMENT OF PATIENTS WITH INTRAPANCREATIC DUODENAL DIVERTICULA

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Frequency of duodenal diverticula (DD) reaches 22% [1, 2]. E. Itala divides them into three groups – out of luminal, intraluminal and the diverticula, into which the common gall and pancreatic duct falls. The most common are out of luminal diverticula, they are formed when outpouching the mucous and submucous layers through the weak spots in the duodenal wall. The overwhelming majority of those diverticula are located on the inside, or pancreatic wall of the duodenum, where it is not covered with peritoneum (intrapancreatic diverticula). At present, there are two methods of the surgical treatment – the diverticulum resection [3] and the cutoff of the duodenum out of digestion [4, 5]. Both methods have their shortcomings, by the first one – the high rate of complications is [6], by the second one – diverticulum remains on the place.

Aim of research is the optimization of the surgical treatment of the patients with the intrapancreatic duodenal diverticula.

Materials and methods. 237 patients were examined, 21 of them have duodenal diverticula. 16 patients have intrapancreatic diverticula. Notwithstanding duodenal diverticula by X-ray and endoscopic examination were revealed often enough, the operations were performed on 9 patients.

Age of the patients ranged from 32 to 72 years, men were 5, women were 4. The most common complaints were about the epigastric pain after eating, sickness, eructation with the eaten day before food. All those caused them to seek help and be examined. The diagnosis was confirmed by the radiological and endoscopic methods.

The indications for the surgery were determined by the presence of severe clinical symptoms, confirmed with the endoscopic data the availability of food mass in the diverticulum, and radiologic data the signs of diverticulum, the delay of the contrast (fig. 1).



Fig. 1. Intrapancreatic diverticulum of the descending branch of the duodenum

Operations were performed laparoscopically on three patients. Diverticulum was located in the lower horizontal branch to the left of the mesenteric vessels, and was isolated from the side of duodenal transition and resected using the apparatus.

6 patients have diverticula, located on the inside wall of the descending branch of the duodenum. The laparotomy was performed on them. The duodenum was widely mobilized according to Kocher. To facilitate the visualization, the air

insufflation was done into the stomach through a probe or endoscope, and then the outlines of diverticulum became clearly visible (fig. 2).

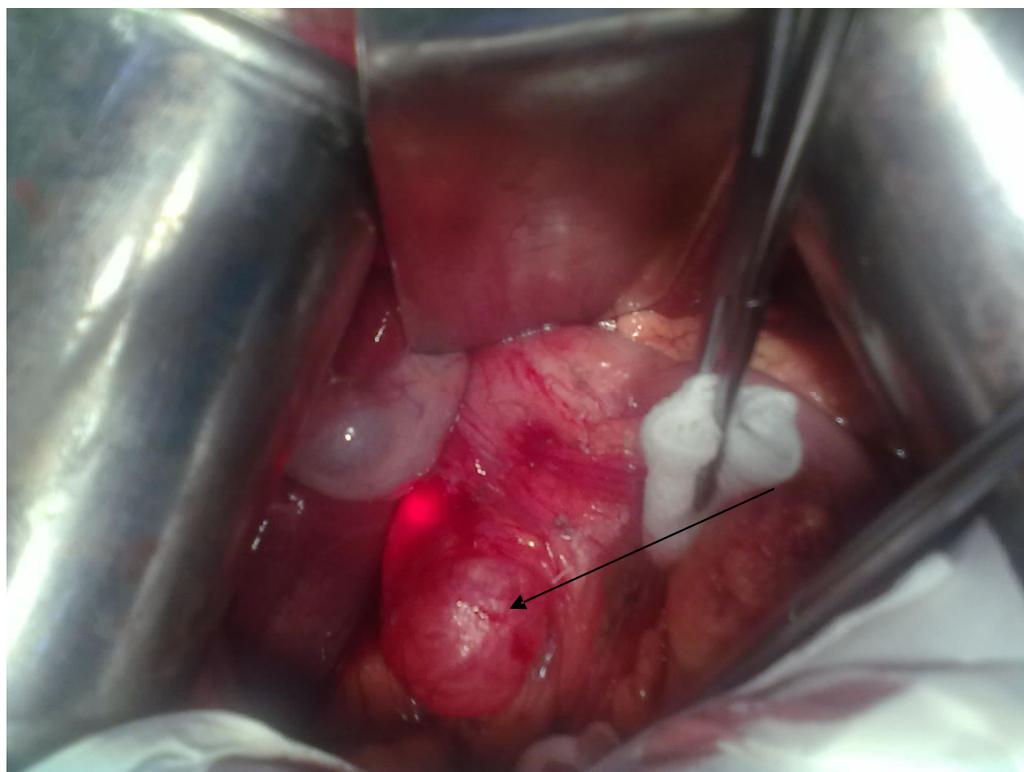


Fig. 2. Intrapancreatic duodenal diverticulum after mobilization from the pancreas

The mobilization of the pancreatic tissue was performed with the help of the ultrasonic scalpel. That greatly facilitated the given stage by eliminating the need of ligation of multiple small pancreatic duodenal vessels. Then, the diverticulum was opened, the major duodenal papilla was visualized (in all patients, it was located near, but outside the diverticulum) and resected, with a narrow mouth with the help of the apparatus, with the wide mouth the duodenal plasty was performed in the transverse direction, the first line of stitches was uninterrupted with the absorbable sutures on the mucous and submucous layer, the second line was of the knot stitches with the non-absorbable sutures on the muscular layer, anchoring the intrapancreatic part of the choledoch.

All patients received the preoperative prophylaxis of pancreatitis, were injected with the proton pump blockers and somatostatin analogues. On the termination of the

surgery, we performed the through-drainage of the epiploic bursa through Winslow's hole, injected mezokolon for the purpose of possible flowing washing-out in the presence of complications pancreatic necrosis, invalidity.

Results. During the postoperative period the pancreatitis events were observed in all patients, which were accompanied with the increased level of serum amylase and urine diastasis. During the implementation of the complex of conservative measures, the pancreatitis events were stopped in 7 patients, the clinical and laboratory indexes normalized, the malfunctions of the duodenum patency were not detected by the contrast radiological examination. They were discharged after the removal of the stitches on the 10–12th days after the operation.

1 patient had a difficult postoperative period. During the operation, the diverticulum, with dimensions of 4x4x3 cm and the wide base, was resected. The major duodenal papilla was located almost at the base. Because of the big size of the duodenum defect the duodenal plasty was performed with the technical difficulties, the choledoch was drained according to Pikovsky. On the 3rd day after the operation there were the severe clinical symptoms of pancreatitis with the increased level of serum amylase up to 1000 units/l, and the urine diastasis up to 6500 units/l. The fistulocholangiography was performed, during which the contrast came into the free abdominal cavity through the 2mm duodenum defect. Because of the absence of the clinical symptoms of peritonitis, the receipt of pathologic discharge on the through drainage and other drainages from the abdominal cavity, we decided to abstain from relaparotomy. Against the conservative treatment background the patient's condition improved. After 10 days, the control fistulocholangiography was performed during which the contrast freely came into the duodenum, and after the "training" the drainage was removed from the choledoch, as well as the drainage of the abdominal cavity, as the discharge was not on it. The patient had got hyperthermia up to 38.0 in the evening, the purulent discharge appeared in small quantity from the placing wound of the through drainage. The fistulography was performed during which the contrast came into the duodenum through the narrow duct of 0.3 cm (fig. 3). The fistulous canal was drained with the thin silicon tube with side holes, and the daily

washing-out was performed. After 7 days the discharge from the fistula was practically absent, the fistula closed by itself.



Fig. 3. Duodenal fistula

Other patient had a more serious complication during the postoperative period the formation of the duodenum fistula type 1. The 70 years old patient came to the surgical department with the clinical symptoms of obstructive jaundice. The intrapancreatic diverticulum was detected by means of ultrasonic scanning, as well as the choledoch dilation up to 12 mm and the intrahepatic bile ducts distension. The presence of the diverticulum was also confirmed by endoscopy. Urgently the patient was operated. The intrapancreatic diverticulum, with dimensions of 4x3x3 cm and a narrow base, was detected, as the major duodenal papilla was not visualized, the

supraduodenal choledochotomy was performed. When probing the distal segment of the choledoch, the undiagnosed 1 cm calculus was detected and removed (it was the cause of jaundice). After that, the probe passed freely into the duodenum, the diverticulum was resected with the help of apparatus, the additional row of non-absorbable stitches was put in, cholecystectomy and the choledoch drainage according to Ker were performed. The postoperative period run smoothly, but on the 8th day the patient began to complain about the severe pains in the abdomen, by the ultrasonic scanning the limited accumulation of fluid was revealed in the right subdiaphragmatic space. Having regard to the limited character of the afflux, it was decided to perform the puncture and drainage under the ultrasonic scanning control. 1100 ml of bile was secreted instantly through the placed drainage (most likely, the cause of the bile accumulation was the leakage from the choledoch besides the Ker drainage). Patient noted relief, bile through the drainage did not come out more. The next day there was noted the sharp and sudden deterioration of the patient general state, the blood pressure reduction, and blood began to come out from the abdominal cavity through the drainages. By the relaparotomy the 1500 ml hemoperitoneum, the nodal pancreatic necrosis in the head area of pancreas, the arohive bleeding from the back pancreatic duodenal artery were revealed. The stitches in the duodenum were well-to-do, the suture of arozhived artery and blood reinfusion were performed. The next day bile began to come out on the through drainage in volume of 1,000 ml per night, and it became obvious, that the patient had the opened duodenum fistula type 1 [7]. Although by the ultrasonic scanning the free fluid in the abdominal cavity was not revealed, the fistula discharge was completely picked up with the through drainage, and the clinic symptoms of peritonitis were absent, considering the large losses through the fistula, it was decided to perform relaparotomy. During the operation, the 0.5x0.5 cm defect in the area of duodenal plasty was revealed, the cutoff of the duodenum out of digestion by stitching the stomach above the pylorus and stem vagotomy were performed. It was made the application of the retrocolic posterior Brown gastroenteroanastomosis, the throughout drainage through the fistula, the afferent loop, the stomach, the nasal passage, the stitching the fistulous

opening to the round ligament of liver according to the Oppel-Polikarpov type, the nazointestinal probe was placed into the efferent loop for feeding [7]. During the postoperative period it was constantly performed the active aspiration from the through drainage, placed through the fistula, the enteral feeding, and the double replacement of the through drainage by the smaller diameter drainage, and then by the fishing line. The fistula closed in 1 month, the recovery came.

Conclusion. The surgical treatment is indicative by the intrapancreatic duodenal diverticula with the complicated course, the presence of the clinical symptoms of diverticulitis and obstructive jaundice. By the diverticulum resection the risk of complications is high pancreatic necrosis, duodenal stitches failure. So besides the treatment with somatostatin analogues, proton pump inhibitors, the area of surgical operation need to be drained with the through drainage, followed by the active aspiration. Considering the current possibilities of prevention and that saving the direct passage is functionally advantageous for the patient, we think that the diverticulum resection is more preferable than the cutoff of the duodenum out of digestion.

Peculiarities of surgical treatment of patients with intrapancreatic duodenal diverticula

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Nowadays there are two methods of surgical treatment of duodenal diverticula resection of the diverticulum and exclusion of the duodenum from digestion. Results of surgical treatment of 9 patients with intrapancreatic duodenal diverticula are presented. Despite the fact that there is a high risk of complications upon resection of the diverticulum, taking into account current possibilities of complications' prevention and treatment, resection of the diverticulum seems to be more preferable than exclusion of the duodenum from digestion.