Results of surgical treatment of destructive pancreatitis

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Abstract. Based on a retrospective analysis of the methods of surgical correction of ¬various clinical and morphological forms of pancreatic necrosis, the best options for tactics and surgical techniques for this pathology are proposed.

1 Introduction

Recent years have been characterized by a significant increase in insular inflammation of the pancreas. Acute pancreatitis ranks third among acute surgical diseases of the abdominal organs (frequency 6-10%), second only to acute appendicitis and acute cholecystitis. Destructive forms of acute pancreatitis are traditionally considered one of the most difficult problems in surgical gastroenterology, accompanied by high mortality (from 25 to 80% according to various authors) [1-7].

To date, there is no single point of view among surgeons regarding the tactics of treating patients with destructive pancreatitis; there are disagreements in the definition of indications and contraindications for various methods of surgical treatment of pancreatic necrosis. In recent years, reports have appeared about the advisability of laparoscopy as a component of the treatment and diagnostic tactics for managing patients with acute pancreatitis. It is believed that early removal of toxic effusion from the abdominal cavity with adequate washing and drainage of the latter contributes to a more rapid resolution of manifestations of multiple organ failure and reduces the risk of purulent-septic complications [8-15].

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2 Materials and research methods

A retrospective analysis of the results of surgical treatment of 127 patients with various forms of pancreatic necrosis who were hospitalized in the Department of Emergency Abdominal Surgery of the Fergana branch of the Republican Scientific Center for Emergency Medical Care in the period from 2016 to 2021 was carried out.

The results of the studies showed that the causes of pancreatic necrosis in 58 patients (45.7%) were alcohol consumption, in 42 (33%) cholelithiasis (biliary pancreatic necrosis), in 19 (15%) cases - other factors (mainly of an alimentary nature), in 4 (3.1%) cases, the genesis of pancreatic necrosis was iatrogenic (after ERCP). In 4 (3.2%) cases, pancreatic necrosis was caused by trauma to the pancreas (in 2 patients it was closed with a rupture of the pancreas, in 2 patients with a stab wound to the pancreas). In the structure of the disease, 81 (63.8%) men and 46 (36.2%) women; The age of the patients ranged from 21 to 59 years.

In all patients, the severity of their condition was assessed on admission based on the - clinical picture and laboratory data . The severity of the course of pancreatic necrosis was predicted according to the APACHE - II scale (Acute physiology and Chronic Health Evaluation), based on the assessment of clinical and biochemical data indicating the degree of multiple organ failure. In the first 24 hours of the disease, this system has a rather high sensitivity in determining the severity of acute pancreatitis (in 70% of cases) with a specificity of 80-90%.

In 21 patients (16.5%) with pancreatic necrosis, the course of the disease was complicated by purulent omentobursitis; 11 of them are men, 10 are women. The average age of the patients was 48 years, the average length of stay in the hospital was 35 bed-days. Of these patients, 5 patients died (23.8%), the average duration of hospitalization of deceased patients was 18 bed-days; mean age 45 years. In 3 cases (14.3%), the cause of pancreatic necrosis (and, accordingly, purulent omentobursitis) was an injury to the pancreas.

We used laboratory-biochemical , ultrasound, endoscopic, X-ray and laparoscopic methods of preoperative examination, bacteriological examination of blood and exudates, as well as intraoperative revision with a biopsy of the affected tissues of the omental sac and retroperitoneal space.

Distribution of patients according to the severity of the condition:

- fulminant course - pancreatogenic toxic precoma, - (there were various degrees of impaired consciousness (toxic encephalopathy), signs of multiple organ failure - acute respiratory failure, hemodynamic disorders + acute hepatic-renal failure) - 1 6 (12.6%) patients (all died within 24 hours of admission);
- extremely severe (patients without impaired consciousness, with a clinic of multiple organ failure - usually cardiovascular disorders and hepatic and renal insufficiency)
- in 20 (15.7%) people (16 of them died within 8 days from the moment of - admission);
- severe (patients with a clinic of enzymatic peritonitis, destructive cholecystitis, severe pain syndrome without signs of early multiple organ failure) - 66 people (52%);
- moderate - 25 people (19.7%).

3 Results and its discussion

Based on the criteria of the APACHE -II scale, an unfavorable prognosis for the course of pancreatic necrosis (with an integral indicator of more than 8 points) was in 85 people (67%), favorable - in 42 (33%).

The group with an unfavorable prognosis for the course of the disease included 35

patients who died, 8 people with post-traumatic pancreatic necrosis, 14 patients with purulent omentobursitis, 33 people operated on in an emergency or planned manner. In 60 people, the prognosis was favorable. This group consisted of patients with uninfected pancreatic necrosis who were not operated on.

67 patients with pancreatic necrosis (52.8%) were operated on. Of these, 55 (43.3%) patients were operated on an emergency basis within the first day after admission to the hospital due to diffuse peritonitis. The operation revealed the cause of the disease - pancreatic necrosis. The volume of surgical intervention in most cases is drainage of the stuffing bag, abdominal cavity, in the presence of tissue fusion under the gastric gland, purulent omentobursitis - omentobursostomy.

57 (45%) patients were operated on urgently. Indications:

- lack of effect from ongoing conservative therapy in patients with biliary pancreatic necrosis (if there are symptoms of destructive cholecystitis in the clinical picture , or increasing cholestatic endotoxicosis if it is impossible to correct it by endoscopic methods;
- purulent complications of pancreatic necrosis.

On a delayed basis, 19 (14.9%) patients were operated on. This group consisted of patients with biliary pancreatic necrosis, in whom the pain syndrome was completely stopped after conservative therapy, and 3 patients with a formed false pancreatic cyst.

Omentoburs o- and lumbostomy were performed according to the technique developed in the branch. Omentobursostomy was supplemented by drainage of the omental sac from the side of the retroperitoneal space with the removal of sequesters from the retroperitoneal proper , parapancreatic (in the area of the body and tail), cellular spaces and mesocolon lateral-lumbotomy access on the left without traumatic relegation of the splenic angle of the colon (according to the classical method), avoiding opening the parietal sheet of the peritoneum, which is not involved in the purulent-necrotic process outside the omental sac.

A therapeutic and diagnostic laparoscopy copy was made in 3 3 patients (26%), in 3 cases a laparoscopic cholecystostomy. Endoscopic papillosphincterotomy was performed in 11 *(8.7%)* patients. DHLP was performed in 8 (6.3) cases. Intra-aortic fluid therapy in the first 3 days from the date of receipt was carried out at (0.8%) of the patient.

Morphological nature of changes in the pancreas, omental sac and abdominal cavity (determined intraoperatively, during laparoscopy and according to sectional studies):

- focal fatty pancreatic necrosis - 76 cases (55.9%);
- subtotal and total fat - 30 cases (22.1%);
- focal hemorrhagic - 12 cases (8.8%o);
- subtotal and total hemorrhagic - 18 cases (13.2%).

Infected pancreatic necrosis was in 42 (33%) patients, uninfected - in 85 patients *(66,9%).*

Minimally invasive methods of treatment of complications of pancreatic necrosis (puncture and drainage under ultrasound control) were used in 4 patients (2.9%). In 2 cases, puncture and drainage of the omental sac were performed, and in 2 cases, a retroperitoneal abscess was performed. In 50% of cases , these methods proved to be ineffective , and surgical intervention was required.

All patients with pancreatic necrosis complicated by purulent omentobursitis were operated on. Five patients (25%) were operated on an emergency basis: one with a clinic of adhesive intestinal obstruction (a history of a stab wound), three with a clinic of diffuse peritonitis, and one for a closed injury of the abdominal organs. In almost all cases, during the operation, a yellowish effusion was found in the abdominal cavity, plaques of steatonecrosis, infiltration, and edema of the ligaments. The omental bag contained a cloudy effusion with an unpleasant odor (from a meager amount to 1 liter). In most cases (in 4 patients - 80%), the volume of the operation was limited to drainage of the abdominal cavity, omental sac with glove-tube drainage. Only in 1 case (20% - in the presence of

purulent impregnation of the retroperitoneal tissue) an omentobursostomy was performed (this patient died within 3 days after the operation with symptoms of acute cardiovascular insufficiency).

In one case, the postoperative period was complicated by the formation of a pancreatic fistula in the left hypochondrium, which closed on its own; no repeated surgical interventions were required. Three more (60%) patients were operated on again. In the postoperative period, a high temperature persisted for a long time, ultrasound revealed fluid cavity formations of various sizes in the omental sac (which increased under dynamic control), intoxication increased, toxic changes in the blood, an infiltrate was palpated in the epigastrium - which was an indication for repeated surgical intervention. In one case, in the presence of a pronounced purulent-necrotic process in the omental sac with involvement of the retroperitoneal space, a necrosequestrectomy was performed, the omental sac was drained through the median wound (omentobursostomy) and counter- opening in the left - lumbar region (open method of drainage of the retroperitoneal space). In the postoperative period - abundant serous -purulent discharge along the drains, with necrotic tissues; the stuffing box was washed with antiseptic solutions, water-soluble ointments were applied. Gradually, discharge from the bursostomy decreased, and it closed. In the second patient (after a traumatic rupture of the pancreas), after opening the omental sac and removing the purulent hemorrhagic contents, the omental sac was drained in the left hypochondrium by suturing the gastrocolic ligament to the peritoneum (marsupialization). After the operation, a pancreatic fistula formed, which later closed on its own. In all patients operated on again, the postoperative period was uneventful; according to the ultrasound data, no liquid cavitary formations were found in the omental sac.

13 patients with purulent omentobursitis (73,7%) were operated on in a delayed manner. 1 of them was admitted to the department with a clinic of exacerbation of chronic pancreatitis - iatrogenic pancreatic necrosis after ERCP. 1 patient was admitted with a closed abdominal injury; on admission , laparoscopy was performed, which revealed no evidence of damage to the abdominal organs. 13 patients were hospitalized with a clinical picture of acute pancreatitis, pancreatic necrosis of varying severity. All patients underwent intensive infusion and - onnaya, antibacterial, antisecretory and cytostatic therapy. The timing of surgery ranged from 1 week to 1 month. Within 1 week from admission, 3 patients (23%) were operated on due to an increase in negative dynamics during the course of the disease and the absence of a positive effect from conservative therapy (there was an increase in pain, hyperthermia up to 39°C, an increase in the size of the infiltrate abdominal cavity, an increase in toxic changes in the blood, an increase in the size of cavitary formations of the stuffing bag during ultrasound).

The volume of surgery in this group of patients is the opening of the abscess of the omental sac, abdominal cavity, omentobursostomy (in 4 cases); 1 patient underwent antrumectomy with gastroenteroanastomosis on a long loop, duodenostomy according to Witzel due to a phlegmonous-necrotic lesion of the posterior wall of the stomach (the patient recovered). Six patients (40%) were operated on within 1 to 2 weeks from admission. Against the background of conservative therapy in this group, there was a temporary stabilization of the clinical symptoms of the disease, however, the absence of a further positive effect from the treatment, the persistence and growth of the clinic of purulent-resorptive endotoxicosis determined the indications for surgical treatment. The volume of the operation - opening and drainage of abscesses of the omental sac, abdominal cavity; 3 patients (50%) omento bursostomy (in the 1st case with the creation of counter - opening in the left lumbar region).

Four patients (30,8%) were operated on within 1.5 weeks to 1 month from admission. In all patients of this group, against the background of ongoing drug therapy, there was a noticeable positive dynamics in the course and disease, although toxic changes in the blood

were noted, subfebrile temperature persisted, and on ultrasound - liquid cavity formations in the omental bag. All of them were prepared for surgical treatment and operated on in a planned manner. The volume of the operation - cholecystectomy, drainage of the common choledochus (in 4 patients), opening and drainage of a purulent omentobursitis, necrectomy, omentobursostomy (in 3 patients).

Of the 13 patients operated on in a delayed manner, 5 (38.5%) were operated on again. In 3 cases, opening and drainage of abscesses of the omental bag was performed, in another 1 imposition of an omentobursostomy. In 1 patients who underwent opening and drainage of omentobursitis during the first operation, the postoperative period was complicated by arrosive bleeding from the pancreatic bed, which required repeated blood transfusions. In one case, the nature of bleeding was profuse. These patients were reoperated about 1 month after the first operation, during which extensive putrefactive phlegmon of the retroperitoneal space was found; performed necrosequestrectomy, opening and drainage of phlegmon by lumbar access, omentobursostomy. The prognosis according to the APACHE -II scale in these patients was not favorable. Also, 2 patients who had previously undergone omento bursostomy were reoperated. The indication for surgical intervention in one case was the formation of a terminal postnecrotic pancreatic fistula (with fistulography contrast and - the distal section of the Wirsung duct is cut); imposed end-end pancreatojejunoanastomosis on the Roux loop. In the second case, despite the false bursostomy, the patient retained insufficient drainage of the cavity of the omental sac, the patient was reoperated twice - opening and drainage of the parapancre. atic phlegmon, then an abscess of the abdominal cavity. The prognosis for these patients was favorable.

In 3 patients, the course of the disease was complicated by persistent reactive left- sided pleurisy, which required repeated pleural punctures (in 1 case, 7, in 2 - drainage of the pleural cavity with ineffective punctures). It is characteristic that the course of the disease with him was severe, in one case the patient was operated on three times (with a favorable outcome), the second ended in death.

In three (15%) cases, the postoperative period was complicated by the formation of an external pancreatic fistula, which in 2 patients closed within 1 week after conservative therapy. In the first case, persistent pancreatic fistula with profuse pancreatic discharge (up to 500 ml per day) required surgical treatment. On fistulography, in this case, the fistula is complete and communicates with the distal section of the Wirsung duct . After the imposition of pancreatic juvenile anastomosis, the patient was discharged in a satisfactory condition. Of the 127 patients, 33 people (24.3%) died. For comparison, postoperative mortality in acute pancreatitis for the period of 2022 without differentiation of clinical forms of the disease was 26.0%.

4 Conclusion

Thus, the conducted studies show:

- Forecast of repeated surgical intervention in case of purulent omentobursitis is 2.5 times less if timely (during the first operation) technically correctly performed omentobursostomy was performed, as well as drainage of the retroperitoneal parapancreatic space by lumbotomy access on the left according to the method developed in the clinic.
- Persistent left-sided pleurisy , requiring repeated pleural punctures, indicates an ongoing purulent-inflammatory process in the pancreatic tissue, parapancreatic space or omental sac and requires early repeated punctures (with a fluid volume in the pleural cavity of 500 ml or more) with a mandatory adequate drainage of the parapunk rheal space and staged revisions of the omental bag.
- Prolonged (in our observations from three weeks to 5 months) remittent or intermittent fever in patients with pancreatic necrosis after opening and draining lesions is a

natural protective reaction and does not require special medical and surgical correction.

- Antibacterial therapy (cephalosporins III -1 V generations, or carbapenems + imidazole derivatives) is necessary only in the first phase of acute pancreatitis in order to - prevent infection of foci of pancreatic necrosis. In the event of the latter (analysis of the dynamics of the clinical and laboratory status, ultrasound-b and optata, CT data), all patients should be operated on.

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