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**ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE**

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THE USE OF MINIMALLY INVASIVE METHODS IN THE SURGICAL CORRECTION OF ACUTE BILIARY PANCREATITIS

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✓ Resume

The paper presents a retrospective analysis of the treatment of 221 patients with acute biliary pancreatitis. When a stone is inserted into the large duodenal papilla, endoscopic papillotomy is recommended in the first hours, with choledocholithiasis, obstructive jaundice, cholangitis and acute biliary pancreatitis, endoscopic papillotomy and lithoextraction performed on the first day after the patient's admission to the clinic. Cholecystectomy, usually laparoscopic, is advisable to perform after conservative resolution of mild biliary pancreatitis in the next 3-7 days. After performing an endoscopic papillotomy, it is also justified to perform a cholecystectomy without discharge from the hospital, if the procedure is completed without complications. In acute biliary pancreatitis complicated by sterile or infected fluid accumulations, cholecystectomy should be postponed until they are completely resolved and the systemic inflammatory reaction is eliminated.

Keywords. Acute pancreatitis, surgical treatment, complications of acute pancreatitis, pancreatic necrosis

ПРИМЕНЕНИЕ МАЛОИНВАЗИВНЫХ МЕТОДОВ В ХИРУРГИЧЕСКОЙ КОРРЕКЦИИ ОСТРОГО БИЛИАРНОГО ПАНКРЕАТИТА

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✓ Резюме

В работе представлен ретроспективный анализ лечения 221 больных острым билиарным панкреатитом. При вклинении камня в большой дуоденальный сосочек рекомендуется эндоскопическая папиллотомия в первые часы, при холедохолитиазе, механической желтухе, холангите и остром билиарном панкреатите - эндоскопическую папиллотомию и литоэкстракцию, выполненную в первые сутки после поступления пациента в клинику. Холецистэктомию, как правило, лапароскопическую, целесообразно выполнять после консервативного разрешения легкого билиарного панкреатита в ближайшие 3-7 суток. После выполнения эндоскопической папиллотомии оправдано выполнение холецистэктомии также без выписки из стационара, если процедура выполнена без осложнений. При остром билиарном панкреатите, осложненном стерильными или инфицированными жидкостными скоплениями, холецистэктомию следует отложить до полного их разрешения и устранения системной воспалительной реакции.

Ключевые слова. Острый панкреатит, хирургическое лечение, осложнения острого панкреатита, панкреонекроз

ЎТКИР БИЛИАР ПАНКРЕАТИТНИ ЖАРРОҲЛИК ЙЎЛИ БИЛАН ДАВОЛАШДА КАМ ИНВАЗИВ УСУЛЛАРНИ ҚЎЛЛАШ

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✓ Резюме

Татқиқотимизда ўткир билиар панкреатит билан оғриган 221 беморни даволашнинг ретроспектив таҳлили келтирилган. Катта дуоденал сўргичга тош тиқилиб қолганда дастлабки соатларда эндоскопик папиллотомия, холедохолитиаз, механик сариқлик, холангит ва ўткир билиар панкреатитда - бемор клиникага келгандан кейинги биринчи сутка ичида эндоскопик папиллотомия ва литоэкстракция тавсия этилади. Холецистэктомияни, одатда лапароскопик усулда, енгил билиар панкреатитни консерватив даволангандан сўнг яқин 3-7 кун ичида ўтказиш мақсадга мувофиқдир. Эндоскопик папиллотомиядан сўнг, агар муолажа асоратларсиз ўтказилган бўлса, холецистэктомияни ҳам стационардан чиқармасдан бажариш ўринлидир. Стерил ёки инфекцияланган суюқлик тўпланиши билан асоратланган ўткир билиар панкреатитда холецистэктомияни улар тўлиқ бартараф этилгунга ва тизимли яллигланиш реакцияси йўқолгунга қадар кечиктириш лозим.

Калит сўзлар: Ўткир панкреатит, жарроҳлик даволаш, ўткир панкреатит асоратлари, панкреонекроз

Introduction

Acute biliary pancreatitis (OBP) is a common disease that occurs in 25-30% of the total number of patients with acute pancreatitis and is severe in 15-25% [1,3,5]. Its main causes are the existence of gallstone disease, anatomical relationships between the common bile duct and the main pancreatic duct and the embryonic development of a "common canal" between them, microlithiasis, and the insertion and migration of stones through the large duodenal papilla (BDS) [2,7,9]. Currently, active surgical tactics for the treatment of gallstone disease are being promoted, as well as the widespread introduction of laparoscopic cholecystectomy and endoscopic retrograde pancreato- and cholangiography with the possibility of performing papillotomy and stone extraction. However, the results of surgical treatment of OBP patients leave much to be desired, since in severe forms of this disease, mortality reaches 15-30% [4,8]. In this regard, it is important to timely identify specific laboratory and special research data characteristic of OBP, and it is necessary to justify the choice of a type of surgical aid, minimally invasive or "open", depending on the predominance of certain changes in the gallbladder, bile ducts, pancreas, parapancreatic and retroperitoneal space. The issue of the necessity, effectiveness and danger of endoscopic papillotomy in conditions of a complicated course requires a final decision, as well as determining the timing of cholecystectomy after relief of OBP of various degrees of severity [6, 10].

The purpose of the study: to develop rational surgical tactics for the treatment of patients with acute biliary pancreatitis

Research materials and methods

The paper presents a retrospective analysis of the treatment of 221 patients with acute biliary pancreatitis observed in the clinic over a period of more than 10 years. Of these, 2 groups were identified, the first with a mild course of the disease – 142 patients (64.2%) and the second, which is of the greatest interest for practical surgery – with a moderate and severe course of 79 (35.8%) patients. The criterion for inclusion in the study was proven biliary pancreatitis (the presence of GI, an increase in blood amylase 3 times higher than normal), patients who had an attack after drinking alcohol were excluded from the study. It is generally accepted that women suffer from biliary pancreatitis more often, and the well-known ratio of 1:1.5 in favor of women was revealed in our study. The age of 221 patients ranged

widely from 18 to 75 years, with an average age of 54.5 ± 1.9 years. Among 79 patients with severe and moderate forms, patients of working age from 20 to 50 years old accounted for 84.7% of this number of patients. There were 34 men (43.1%) and 45 women (56.9%).

The laboratory analysis included: - A clinical blood test was performed on a Sysmex XT 4000i peripheral blood analyzer. Blood was collected in a test tube for clinical blood analysis with ethylenediaminetetraacetic acid (EDTA); - General urinalysis; - Determination of the content of indicators in a biochemical blood test: (total bilirubin, direct, amylase, alkaline phosphatase, alanine transaminase (ALT), aspartate aminotransferase (AST), albumin, total protein, urea, creatinine, glucose, electrolyte composition, C-reactive protein, procalcitonin in blood serum. Venous blood in a volume of 3.0 ml was collected from a test tube with heparin; - Examination of the hemostasis system (thromboelastogram, hemostasiogram); - Microbiological examination of the sterility of biomaterials, cultivation.

The results and their discussion

Treatment of 142 patients with mild acute pancreatitis consisted of anesthesia, octreotide administration, xefocam antiediator therapy, antibiotic therapy for fever detection, antispasmodic therapy, and correction of water-electrolyte disorders. Analysis of the medical records of these patients revealed a significant difference in blood amylase indices of biliary pancreatitis from alcoholic pancreatitis. Thus, in biliary pancreatitis, an increase in blood amylase over 800 u/l was common. In 34 patients with mild pancreatitis, we found blood amylase from 1,500 to 4,000 u /L, which, due to the risk of pancreatogenic shock, forced such patients to be hospitalized in the intensive care unit and to undergo therapy similar to severe acute pancreatitis.

Correction of emerging disorders in moderate to severe acute pancreatitis, the main feature of which is transient or increasing multiple organ failure, began with the installation of a central venous catheter, the installation of a nasojunal probe for intestinal decontamination and enteral nutrition, and an epidural catheter for anesthesia. Antibiotic therapy with broad-spectrum drugs, prevention of stress ulcers, inhibition of the external secretory function of the pancreas with octreotide, antimediation therapy, extracorporeal decoloration was mandatory if the APACHE II score exceeded 15 points. In the last 3 years, xefocam antiediator therapy has been used in combination with these therapeutic measures in order to suppress cytokine attack. Depending on the detection of changes in the functions of organs and systems, their restoration was additionally carried out. The result of such therapeutic tactics was the successful prevention of the evolution of moderate pancreatitis with transient multiple organ failure to severe in 15 patients. Among patients with moderate to severe acute pancreatitis, 6 had a stone embedded in the large duodenal papilla (BDS), 10 had gallbladder destruction and sterile pancreatic accumulation, 10 had gallbladder destruction and infected accumulation, 23 had choledocholithiasis, cholangitis, mechanical jaundice, 30 had infected pancreatic necrosis without a tendency to delineate.

Patients with established biliary pancreatitis, stone embedding in BDS (6 patients) and choledocholithiasis, obstructive jaundice and cholangitis (23 patients) require a separate discussion, primarily from the point of view of treatment organization. This group of patients is under special attention due to the fact that "time is a risk factor" and with prolonged obstruction of the mouth of the main pancreatic duct and/or extrahepatic bile ducts, complications that are difficult to eliminate occur, most often pancreatic necrosis and purulent cholangitis, as well as liver abscesses. The behavior of patients with a stone embedded in BDS is very indicative and resembles those with renal colic, i.e. intense constant pain radiating to the back and the patients "do not find their place." In this regard, after short-term preparation of patients, endoscopic papillotomy should be performed as early as possible, usually with a needle electrode. Recently, as the skill of the clinic's endoscopists grows, this manipulation can also be performed at night, in the next 1-2 hours after the patient is admitted to the hospital. The same active approach is necessary for patients who, along with biliary pancreatitis, have choledocholithiasis, cholangitis, and jaundice. If the embedding of the stone in the BDS and the effectiveness of papillotomy is beyond doubt, then the noted second condition has both supporters and opponents for a long time. It should be emphasized that we advocate active papillotomy for biliary pancreatitis, accompanied by the detection of microlithiasis or choledocholithiasis, cholangitis and obstructive jaundice, and perform this procedure in the first 24 hours after admission to the clinic. Confirmation of the validity of such surgical tactics can be the observation of 23 similar patients who, after endoscopic papillotomy and lithoextraction, successfully resolved cholangitis, jaundice and regressed OBP. It should be emphasized that of these 23 patients, 4 were transferred after consultation from other medical institutions, where they refrained from endoscopic papillotomy for 2-5 days and continued conservative treatment, or there was no technical possibility of performing endoscopic papillotomy and extraction of bile duct stones. There were no fatal outcomes in both groups of patients under discussion. In patients who

underwent endoscopic transpapillary interventions, there was no significant deterioration in their condition and no need to be transferred to the intensive care unit. At the same time, it should be noted that patients who underwent ERCP and CT did not experience instability of hemodynamic parameters in any case. The risk of pancreatic necrosis progression after ERCP is 4%. At the same time, there were no cases of serious complications with PH in the studied patients after performing endoscopic retrograde ERCP with EPST. After endobiliary interventions, the patients showed positive dynamics. In 86% of cases, repeated interventions were not required to eliminate the causes of biliary hypertension. In these patients, the presence of intracurrent pathology was the cause of impaired bile outflow and the development of pancreatitis. After measures aimed at eliminating intracurrent pathology (ERCP with EPST), the clinical condition of patients improved, normalization of laboratory parameters was noted – normalization of amylase, bilirubin, transaminases, clinical blood test parameters, resolution of the inflammatory process and signs of a systemic inflammatory reaction, normalization of the size of the pancreas, diameter of the bile ducts, and size of the gallbladder.

As can be seen from the data we have obtained, endoscopic interventions in patients with OBP are effective, and there is a statistically significant improvement in the objective parameters of patients' health, both laboratory and instrumental. To eliminate intracurrent pathology in patients with OBP, endoscopic correction is the most preferred method. Of the 23 patients in this group, 15 underwent surgery in the next 2-3 weeks after resolution of acute pancreatitis, jaundice and cholangitis – 12 underwent laparoscopic cholecystectomy, with conversion and "open" cholecystectomy performed in 2 cases. Two more patients were also operated on in an "open" manner due to the development of acute cholecystitis 3 days after endoscopic papillotomy. The other 5 patients underwent surgery 4-7 days after endoscopic papillotomy due to the development of not only acute cholecystitis, but also the migration of gallstones from the gallbladder into the bile ducts with the development of jaundice. An "open" cholecystectomy, choledocholithotomy and drainage of the bile ducts were performed. In 10 patients with gallbladder destruction and fluid accumulations, drainage of the gallbladder and sterile fluid accumulations was performed under ultrasound control, followed by cholecystectomy. During the formation of infected delimited clusters, 10 more patients underwent puncture-catheterization treatment or "open" intervention; cholecystectomy after complications were resolved. The development of sterile or infected pancreatic clusters usually requires their drainage under the supervision of ultrasound. Puncture-catheterization intervention for sterile clusters is indicated if they are larger than 10 cm or multiple. The puncture-catheterization method for infected clusters, as our observations have shown, is effective in cases of isolated, single and containing no more than 100 ml of pus. Otherwise, their resolution by this method turns out to be ineffective and we have to resort to an "open" operation. Correction of emerging disorders in moderate to severe acute pancreatitis, the main feature of which is transient or increasing multiple organ failure, began with the installation of a central venous catheter, the installation of a nasojunal probe for intestinal decontamination and enteral nutrition, and an epidural catheter for anesthesia. Antibiotic therapy with broad-spectrum drugs, prevention of stress ulcers, inhibition of the external secretory function of the pancreas with octreotide, antimediation therapy, extracorporeal decoloration was mandatory if the APACHE II score exceeded 15 points.

We observed 30 patients with infected pancreatic necrosis without a tendency to delineation. Depending on the detection of changes in the functions of organs and systems, their cognitive restoration was additionally carried out. The result of such therapeutic tactics was the successful prevention of the evolution of moderate pancreatitis with transient multiple organ failure to severe in 14 patients. In 23 out of 30 cases with infected clusters without a tendency to delineate, spread of necrotic changes to the parapancreatic, left, right or both retroperitoneal spaces, large omentum, the method of "open" abdomen was chosen and cholecystectomy, choledocholithotomy and T-drainage of the bile ducts were performed. The "open" abdomen was used in 7 other cases, however, it was impossible to perform cholecystectomy and intervention on the bile ducts due to the severity of infiltrative changes. Therefore, cholecystolithotomy and cholecystostomy were used. With the described changes in the parapancreatic and retroperitoneal space, large omentum, it is unlikely to be reasonable to count on the success of conservative therapy or minimally invasive interventions. We believe that it is advisable to use the following principles developed in the clinic for the management of such patients: – bicostal access, subcostal left or right, depending on the location of necrotic masses; – wide opening of the omentum sac and mobilization of the right and/or left bends of the colon; – opening of the right and/or left retroperitoneal space; – abdominization of the pancreas; – maximum preservation of the pancreas; – opening of all purulent swellings and removal of only free-lying sequesters, rejection of forced necrectomy, limitation of indications for pancreatic resection; – tamponing of the omentum and retroperitoneal space, rejection of drainage tubes; - narrowing of the wound with provisional sutures;

– refusal of relaparotomies on "demand" and performing stage-by-stage readjustments every 48-72 hours. The duration of the disease in this group of patients is noteworthy, from 7-12 days to 2-3 weeks before admission to the clinic. The use of the strategy of surgical treatment of infected pancreatic necrosis developed in the clinic, without a tendency to delineation, made it possible to achieve quite encouraging results in the treatment of this exceptionally severe group of patients. Thus, out of 30 such patients, 7 died, which is 23.3% in the cohort of patients under consideration.

Conclusions

1. The severity of the patient's condition, laboratory test results, identification of organic changes in the biliary tract, pancreas, and involvement of retroperitoneal space in the inflammatory process are crucial when choosing a rational management strategy for acute biliary pancreatitis.

2. Endoscopic papillotomy effectively resolves the obstruction of the bile and pancreatic ducts in acute biliary pancreatitis and eliminates ductal hypertension, which are the main cause of purulent cholangitis and necrotizing pancreatitis.

3. Cholecystectomy, usually laparoscopic, is advisable to perform after conservative resolution of mild biliary pancreatitis in the next 3-7 days. After performing an endoscopic papillotomy, it is also justified to perform a cholecystectomy without discharge from the hospital, if the procedure is completed without complications. In acute biliary pancreatitis complicated by sterile or infected fluid accumulations, cholecystectomy should be postponed until they are completely resolved and the systemic inflammatory reaction is eliminated.

4. The proposed algorithm for the examination and treatment of biliary pancreatitis, as well as well-founded indications for various types of surgical intervention, made it possible to individualize surgical tactics. The mortality rate in severe pancreatic necrosis was 23.3%.

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