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Improvement of Surgical Tactics for Bile Effluvium and Biliary Peritonitis After Cholecystectomy

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Resume. The paper analyzes the results of surgical treatment of 5247 patients for various forms of GCB. Bile flow and bile peritonitis in the postoperative period were observed in 93 patients due to "small" injuries (aberrant hepatic-bladder ducts of the gallbladder bed - Lyuschka passages, leakage of the stump of the cystic duct, drainage loss from the choledoch) and damage to the main bile ducts ("large" damage.) Improvement of therapeutic and diagnostic tactics in patients with chole circulation after HE allowed to significantly improve the results of treatment in the main group, where complications in the immediate postoperative period amounted to 8.1%, in the long term - 5.4%, mortality was not observed (in the comparison period - 17.8% and 14.2%, respectively, mortality - 3.6%).

Keywords: cholecystectomy, bile expulsion, biliary peritonitis, surgical tactics.

Actuality: Currently, more than 2.5 million cholecystectomies are performed worldwide per year. Minimally invasive operations - laparoscopic or open from mini-access - have long become the "gold standard" of surgery and rationally complement each other. However, the incidence of complications after these interventions remains stable and unacceptably high and is, according to different authors, 1.5-6.8% [2,3,5,8,9,12,13]. The frequency of external and intra-abdominal bile effluvium after various types of cholecystectomy is 0.53-6.3%. Despite the modern achievements of surgery, the problem of postoperative bile flow and biliary peritonitis after cholecystectomy remains one of the most difficult problems to solve. Among the complications of surgery after surgery on the biliary tract, the excretion of bile in the early postoperative period should be considered as an independent problem, since it has very serious consequences and is life-threatening [1,6,7,9,10,11,14].

The main causes of postoperative bile flow and biliary peritonitis can be both "small" injuries - the insolvency of the stump of the cystic duct, the aberrant hepatic-vesical ducts of the gallbladder bed - Lushka passages, drainage loss from the hepaticoholedoche, and "large" injuries - iatrogenic injuries of the main bile ducts (5).

Purpose of the study: Improving the results of surgical treatment of patients with gastrointestinal disease, who after surgery developed bile effusion and bile peritonitis, using relaparoscopy, transduodenal endoscopic interventions, puncture methods under the control of ultrasound to reduce the number of repeated laparotomic operations.

Material and methods of research. The study is based on the analysis of the results of examination and treatment of 5247 patients with GCB operated on in 2000-2019. 93 of which in the early postoperative period after HE there was a biliary complication - bile racing. The clinic of this complication was characterized by external bile flow in 71 patients (56.7%) and in 22 (43.3%) - bile flow into the abdominal cavity.

There were 3 degrees of postoperative bile flow according to L. Morgenstern (2006) Bile flow of the I degree - up to 100 ml / day by drainage from the abdominal cavity or delimited accumulation of fluid in the bed of the gallbladder with a volume of less than 100 ml during ultrasound revealed in 33 patients (35.4%). Bile flow of the II degree - up to 500 ml / day by drainage or free fluid above and under the liver during ultrasound was detected in 29 patients (31.1%). Bile flow of the III degree - more than 500 ml / day by drainage or free fluid in 3 or more areas of the abdominal cavity was detected in 31 patients (33.3%).

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The source of postoperative bile flow in 12 observations was additional (aberrant) bile ducts (Lushka passages) in the gallbladder bed, in 13 observations - the failure of the stump of the cystic duct due to slipping of the clips, in 5 patients of ZHI from a defect in the wall of the hepaticocholedoche due to spontaneous loss of the established drainage from the hepaticoholedoche, in 31 - iatrogenic lesions of the main bile ducts. In 32 observations, the source of bile flow was not identified, due to its independent cessation with conservative therapy.

Bile flow was observed after LCE - 2.1% (43), HE from minilaparatoma access 1.1% (29), HE from laparotomy access - 2.4% (12 patients), 9 patients with this complication were transferred to us from other hospitals.

The average age of patients with choleliation after HE was 49 + - 5.1 years - persons of the most working age, men - 23 and women - 70, that is, the ratio of 1: 3, although in the gender structure of operated patients with GCB this ratio was 1: 6, which confirms the literature data on the difficulties of performing HE in males.

64 (68.8%) of the 93 patients with bile flow were admitted to the hospital and operated on for urgent indications for acute destructive cholecystitis, 29 (31.2%) - for chronic calculous cholecystitis. Bile effusion was observed more than 2 times more often after emergency operations than after planned ones.

With bile racing after HE in the early postoperative period, all patients underwent ultrasound (93), according to the indications of RPHG (24), fistulocholangiography (14), intraoperative cholangiography (14), MRICG (13), relaparoscopy (12).

In accordance with the objectives of the study, patients are divided into comparable study groups: the main group consisted of 37 patients with bile effluvium and biliary peritonitis after HE, operated on in the period 2010-2019, the comparison group - 56 patients operated on in 2000-2009.

With bile sis of the I degree in gr. comparison (19 patients) 7 patients underwent recanalization of the contraperture with drainage of the subhepatic region. 3 patients - relaparoscopy, in 1 case, the source of bile flow was recognized as the aberrant bile duct, which is clipped, in 2 observations the source of bile flow was not established. 2 patients underwent relaparotomy, where the cause of intra-abdominal bile flow in 1 observation was the loss of drainage from the stump of the cystic duct, in another 1 observation the source of bile flow was not established. In 7 patients, bile flow independently stopped for 4-10 days after surgery.

With bile testing of the II degree in the comparison group (17 patients), due to the insolvency of the stump of the cystic duct from 8 patients, 3 after LCE, relaparoscopy was performed with repeated clipping of the cystic duct. 2 patients with spontaneous drainage loss from GC also underwent relaparatomy with repeated drainage of the common bile duct. 7 patients with bile flow from the aberrant bile ducts of the gallbladder bed bile flow was stopped by relaparoscopy - 3, relaparotomy - 4. In 2 patients, the cause of the insolvency of the stump of the cystic duct was choledocholithiasis and biliary hypertension, they underwent relaparotomy with choledocholithotomy and choledoch drainage. Another 3 patients with bile peritonitis due to the insolvency of the stump of the cystic duct, relaparatomy was performed with ligation of the stump of the duct and sanitation of the abdominal cavity.

Damage to the main bile ducts caused grade III bile flow in 20 patients of the comparison group, and 5 of them were transferred from other hospitals with drainage of the proximal stump of the hepatic duct. Reconstructive operations were performed in 9 cases, of which, with marginal damage to the hepaticocholedoche, 4 patients were sutured for the defect on the T-shaped drainage. With a complete intersection of the hepaticocholedoche, biliobiliary anastamosis was imposed on 5 patients. 11 patients underwent reconstructive operations: 3 hepaticoduodenoanastamosis was applied, 8 - hepaticoeyunoanastamosis on the transmuration frame drainage. GEA according to Roux was performed on 2 patients after the detection of a complete crossing of the hepaticocholedoche. In 6 observations, the patient with stage 1 performed external drainage of the hepaticoholedoche, then stage 2 imposed GEA according to RU on the TPKD.

In the main group (14 patients), in the absence of signs of peritonitis, satisfactory condition of patients, no changes in blood tests, dynamic observation with mandatory ultrasound control and conservative treatment were carried out - antispasmodics, infusion, anti-inflammatory and antibacterial therapy. In 9 patients, the treatment was effective, the bile flow through drainage progressively decreased and completely stopped within 5-7 days, so no other diagnostic and therapeutic procedures were required. 3 patients required punctures of

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the biloma under the control of ultrasound in order to evacuate the accumulation of fluid in the subhepatic space, and in 1 patient the cause of bile expulsion was the loss of drainage from the choledoch.
In another 2 patients, conservative treatment was also ineffective and they performed RPHG and EPST. In 1 patient, the cause of bile flow was the insolvency of the stump of the cystic duct, in another 1 patient the source was not established. After endoscopic drainage of the biliary system, bile flow in these patients stopped on the 2nd and 5th day.

In the main group (n = 12) with the insolvency of the stump of the cystic duct due to both choledocholithiasis and biliary hypertension with external bile effluvium, RPHG with EPST and nasobiliary drainage in 2 patients was the final method of stopping bile flow.

In 1 observation in a patient with insolvent stump of the cystic duct after endoscopic transduadenal intervention, bile expulsion was not stopped, the patient underwent relaparoscopy and clipping of the cystic duct. Also, with bile radishing in 3 patients from the aberrant bile ducts, their clipping was performed during relaparoscopy, 1 with peritonitis - with relaparotomy. Relaparotomy, choledocholithotomy with choledoch drainage and abdominal sanitation was performed on 1 patient with biliary peritonitis.

With damage to the main bile ducts, bile expulsion of the III degree in the main group was observed in 11 patients. Of these, 4 came from other hospitals with established drainage in the proximal stump of the damaged hepatic duct. Of these, 3 were superimposed gea on RU with TPKD, in 1 observation a high precision GEA was performed without frame drainage.

In our observations, 2 patients with a complete crossing of GC, detected intraoperatively, also imposed a high GEA according to Ru without a framework. 1 patient with bile peritonitis the first stage was sanitized of the abdominal cavity and drained the hepatic duct. Reconstructive surgery is performed in 3 months - GEA with TPKD. Reconstructive operations were performed on 3 patients. 1 patient with an intersection of GC is overlaid with BBA. In 3 patients with marginal damage of not more than 1/2 of the diameter of the duct, suturing of the duct was performed in 2 cases, in one observation after RPCH, a stent was installed in the GC.

Results and their discussion. A comparative analysis of the results of treatment for first-degree bile testing showed that in 2/3 of the observations, patients underwent repeated surgical interventions, and conservative therapy was carried out only in 36.9% of the observations. Directly opposite results were obtained in the main group, where special endoscopic and diapetic methods made it possible to avoid repeated surgical operations in 35.7% of patients, and conservative therapy was effective in the remaining 2/3.

Correction of bile circulation of the II degree in the comparison group (17 patients) in 100% of cases was performed by repeated surgical intervention - relaparotomy (11) and relaparoscopy (6). Improvement of the therapeutic and diagnostic tactics of managing patients in the main group (12 patients) using endoscopic transduodenal interventions made it possible to stop external bile flow in 6 (50%) patients. Relaparoscopy allowed to eliminate the cause of biliary peritonitis in 4 observations and only 2 patients (16.6%) required relaparotomy.

Thus, the introduction of minimally invasive methods of correction of external and intra-abdominal bile effluvium as transduodenal endoscopic interventions, abdominal punctures under the control of ultrasound, laparoscopy, as well as active conservative therapy with daily ultrasound monitoring allowed patients with "small" damage to the bile ducts to abandon repeated laparotomy in 92.4% of patients. Relaparatomy was performed only in 2 patients.
A comparative analysis of the results of treatment in the group of patients with bile flow of the III degree, the cause of which was damage to the main bile ducts, proved the effectiveness of high GEA according to Ru using precision technology. All 3 patients showed good results in the immediate and distant postoperative periods. The implementation of GEA on TPKD (performed in 4 patients of the main group and 8 of the comparison group) is certainly justified when applying biliodigestic anastomosis in conditions of infiltrative disorders in the duct wall and high hylusnum (level 0, -1) damage. Replaceable transfer drainage, on which the GEA is formed, is extremely necessary in the above situations and helps out the surgeon. However, inconvenience for the patient, a significant decrease in his ability to work, associated with the need for prolonged wearing of drainage tubes (up to 2 years) reduces the value of the technique. BBA (superimposed in 5 patients in the comparison group and 1 in the main group) and GDA (in 3 patients in the comparison group) in all cases ended with strictures of GC and BDA. He performed repeated reconstructive operations.

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Suturing of a GC defect covering less than 1/2 of the diameter of the duct is indicated only when using precision technology.

Purulent-septic complications after repeated interventions for bile effluvium after HE in the comparison group were observed in 10 patients (17.8%): - biliary peritonitis (3 patients); - formation of subhepatic and subdiaphragmatic abscess (3 patients); - suppuration of the postoperative wound (4 patients). Of these, 2 (3.6%) died. The cause of death in both observations was acute renal - hepatic insufficiency against the background of a septic state.

In the main group after surgical correction of bile effluvium after HE, complications were observed in 3 patients (8.1%). In 2 observations there were purulent - septic complications, in 1 - acute pancreatitis after endoscopic papillosphincterotomy. Mortality in the main group was not observed.

In the remote postoperative period in the comparison group, 8 patients (14.7%) developed cicatricial strictures of GC or previously imposed BDA accompanied by a cholangitis clinic. Moreover, 3 of them were re-operated - they imposed GEA on Ru. In the main group in the given period, GC stricture was observed in 2 patients (5.4%) - 1 after the imposition of BBA and another 1 after pinching the injury of the common hepatic duct on the T-shaped drainage. Both patients underwent reconstructive operations - GEA according to Ru.

It should be noted that external and intra-abdominal bile effluvium significantly prolonged the treatment of patients. The average duration of inpatient treatment of patients after HE was 2-7 (3.4± 1.2) days. In the comparison group, the stay of patients with choleliation after HE was 15.9±2.3 days, in the main group -12.3± 3.1 days.

Findings:

1. External and intra-abdominal bile effluvium after HE was 1.6% (after LCE 2.1%) and occurred 2 times more often after emergency operations for destructive cholecystitis. The cause of bile flow in 2/3 of patients was "small" damage - aberrant hepatic - bladder ducts of the gallbladder bed, failure of the stump of the cystic duct, loss of drainage of GC and marginal damage to the UPP, in 1/3 of patients "large" damage - intersection and excision of GC.
2. Therapeutically diagnostic algorithm for identifying the source of bile flow and its correction should include ultrasound monitoring and diapeutic methods for bile flow of the I degree, transduodenal endoscopic interventions and relaparoscopy for bile testing of the II degree, MREHG and reconstructive operations for the III degree.
3. The use in the main group of minimally invasive endoscopic transduodenal interventions, diapeutical methods and laparoscopy, as well as active conservative therapy made it possible in patients with bile flow of I and II degrees. ("small" damage) to avoid relaparotomy in 92.4% of patients.
4. With bile effluvium of the III degree ("large" damage), the best results were obtained by applying high GEA according to Ru using precision technology and using hepp techniques - Coinaud and Cattel. Improvement of therapeutic and diagnostic tactics in patients with choleliation after HE made it possible to significantly improve the results of treatment in the main group, where complications in the immediate postoperative period amounted to 8.1%, in the long period - 5.4%, mortality was not observed (in the comparison period - 17.8% and 14.2%, respectively, mortality - 3.6%).

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