

## OPTIMIZATION OF SURGICAL TACTICS FOR POSTOPERATIVE BILE EFFLUVIUM AND BILIARY PERITONITIS AFTER CHOLECYSTECTOMY

**Arziev Ismoil Alievich** - Candidate of Medical Sciences, Associate Professor  
**Kurbaniyazov Zafar Babazhanovich** - Doctor of Medical Sciences, Professor  
**Sayinaev Farrukh Karamatovich** - Assistant  
**Baratov Manon Bahramovich** - Job Seeker  
**Nazarov Zokir Norzhigitovich** - Assistant  
Samarkand State Medical Institute, Uzbekistan.

**Resume.** The paper analyzes the results of surgical treatment of 3266 patients for various forms of GCB. Bile flow and bile peritonitis in the postoperative period were observed in 34 patients due to "small" injuries (aberrant hepatic-bladder ducts of the gallbladder bed - Lushka passages, leakage of the stump of the cystic duct, drainage loss from the choledoch). The developed surgical tactics, based on ultrasound and RPCG data, can improve the results of treatment and avoid relaparotomy in 94.2% of patients with bile flow with "small" lesions of the bile ducts.

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

**Actuality:** The leading place in the structure of postoperative complications after cholecystectomy (HE) is occupied by external or intra-abdominal bile flow (HAI) in the early postoperative period, which should be considered as an independent problem, since it can have serious consequences and be life-threatening [1,3,16]. The main causes of postoperative ZHI are the so-called "small" damage to the bile ducts (aberrant hepatic-bladder ducts of the bed of the gallbladder - Lushka passages, leakage of the stump of the bladder duct) and "large" - iatrogenic damage to the main bile ducts[5].

The outflow of bile through drainage contributes to the early diagnosis of biliary complications, but even a small biliary leak into the abdominal cavity can lead to severe complications [4,7]. Diagnosis of intra-abdominal bile flow is a difficult task, the presence of safety drainage in the subhepatic space contributes to the early diagnosis and prevention of biliary peritonitis [8, 9].

**Objective of the study:** To improve the results of surgical treatment of patients with cholelithiasis (GCB), who after surgery have developed external or intra-abdominal ZHI, the use of relaparoscopy, transduodenal endoscopic interventions, puncture methods under the control of ultrasound to reduce the number of repeated laparotomy operations.

**Material and methods of research.** An analysis of the results of surgical treatment of 3266 patients operated on in the period 2011 - 2021 was carried out for various forms of GCB, which performed HE: - laparoscopic access - 1947, from mini-access - 1093, from wide laparotomy - 226.

The diagnostic program included a standard general clinical examination, ultrasound, EGDS, according to the indications of RPHG, MSCT, MR cholangiography. All interventions were completed by drainage of the abdominal cavity with one or two drains.

In the early postoperative period, 49 (1.5%) patients had ZHI and postoperative biliary peritonitis. Women - 31, men - 18, the average age of patients was  $49 \pm 5.1$  years. In 34 patients, the cause of ZHI was "small" damage, in 11 - "large". The cause of bile flow in 34 (69.3%) patients, (i.e. in more than 2/3 of the observations) were "small" injuries, the sources of bile flow in which were aberrant hepatic - vesical ducts of the bed of the gallbladder (Lyushka passages) - 8, the insolvency of the stump of the cystic duct - 6 and the loss of drainage of the hepaticocholechoche - 3. However, in 17 patients, the source of bile expulsion was not identified. This study does not include patients with iatrogenic ("large") lesions of the main bile ducts.

ZHI was observed in 16 (47.1%) patients operated on for chronic cholecystitis and in 18 (52.9%) - acute cholecystitis. In 22 (64.7%) there was an intake of bile through drainage, and in 12 (35.3%) patients - the accumulation of bile in the abdominal cavity was diagnosed after removal of drains according to ultrasound data.

To assess postoperative ZHI, we took into account both the daily flow rate of bile through the drainages of the abdominal cavity and the ultrasound data - determined the volume of delimited accumulation of fluid in the projection of the bed of the removed gallbladder, as well as the localization and volume of free fluid in the abdominal cavity.

Results and their discussion. In 24 patients with ZHI with the release of bile through drainage in the amount of 150-200 ml per day and in the absence of signs of peritonitis, satisfactory condition of patients, no changes in blood tests, dynamic observation was carried out with mandatory ultrasound control and conservative treatment (antispasmodics, infusion, anti-inflammatory and antibacterial therapy). In 19 patients, the treatment was effective, the drainage bile flow progressively decreased and completely stopped within 5-7 days, so no other diagnostic and therapeutic procedures were required.

3 patients required punctures of 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 underwent retrograde pancreatocholangiography (RPCG) and endoscopic papillosphincterotomy (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 of ZHI was not identified. After endoscopic drainage of the biliary system, bile flow in these patients stopped on the 2nd and 5th day.

In the presence of HAI for control drainage of more than 200 ml within 2-3 days after surgery, 12 patients underwent ultrasound of the abdominal cavity, RPCH, if necessary, decompression of the biliary tract with endoscopic papillotomy and the establishment of nasobiliary drainage. In 6 patients, EPST with nasobiliary drainage was effective and HAI was stopped within 5-7 days. With the failure or ineffectiveness of RPH and nasobiliary drainage, the preservation or intensification of abdominal pain, symptoms of intoxication and irritation of the peritoneum, 4 patients underwent relaparoscopy with additional electrocoagulation of the gallbladder bed, clipping of the Lushka passages or the insolvent stump of the cystic duct, adequate sanitation and drainage of the abdominal cavity.

Laparotomy, choledochostomy, sanitation and drainage of the abdominal cavity with diffuse biliary peritonitis was performed in 2 patients. Complications were noted in 2 (5.9%) patients (repeated bile flow - 1, acute pancreatitis - 1).

A large number of works have been published in the literature on the problem of biliary complications associated with the performance of cholecystectomy. The frequency of such complications, according to a number of authors, ranges from 1.2 to 5.1%. In our observations, it was 1.5% for 3266 cholecystectomy. There are diverse, sometimes contradictory approaches, both to the choice of the method of verification of the source of bile flow, to the determination of indications for repeated intervention, and to the choice of a method for correcting this complication. The reasons for the intake of bile from the stump of the cystic duct can be due to its insolvency due to the displacement of the clip, and due to a rapid and significant increase in pressure in the ductal system in case of impaired patency at the level of the terminal section of the choledoch. Bretucu E. et al. (2006) believes that the treatment of the stump of the cystic duct, performed against the background of inflamed and infiltrated tissues, as well as against the background of intraoperative bleeding, can lead to bile effluvium due to incorrect application of the clip. Similar consequences are caused by cases of overlapping clips of inappropriate size, especially in cases of expansion of the cystic duct. So 4 patients we were forced to perform relaparoscopy with repeated clipping of the vesical duct.

The most important role in the pathogenesis of cholecystectomy after cholecystectomy belongs to unresolved biliary hypertension due to BDS stricture, choledocholithiasis, acute pancreatitis. Research by F.G.Nazyrov et al. (2019) indicates that the mechanism of bile flow may be associated with functional hypertension in the biliary system, which is caused by inflammatory changes and increased liver function. Against this background, any slight damage to the small bile ducts in the bed of the gallbladder on the liver during cholecystectomy can lead to pronounced postoperative bile flow into the abdominal cavity. This opinion is shared by Kotecha K. et al. (2019). We performed EPST for 6 patients with the installation of nasobiliary drainage, which made it possible to stop biliary hypertension and thereby contribute to the cessation of HAI.

The complexity of early diagnosis of intra-abdominal bile flow leads to a delayed repeated surgical intervention and, as a result, to an unfavorable result of treatment. On the other hand, according to A.G. Beburishvili et al. (2009), the difficulty of diagnosis is also explained by the unjustified performance of relaparotomy in 2.7% of patients. In our study, relaparotomy was performed only in 2 patients with diffuse biliary peritonitis.

#### Findings:

1. Postoperative bile effusion and bile peritonitis after HE was 1.5%, the cause of bile flow in 2/3 of the patients was "small" damage - aberrant hepatic - bladder ducts of the gallbladder bed, insolvency of the stump of the cystic duct, loss of drainage of the choledoch.

2. Therapeutic diagnostic algorithm for identifying the source of bile flow and its correction should include ultrasound monitoring and diapaetical methods, transduodenal endoscopic interventions and relaparoscopy.

3. With the appearance of bile discharge by control drainage in a volume of not more than 200 ml per day with a tendency to reduce and there is no accumulation of bile intraperitoneally and the clinic of biliary peritonitis, you can limit yourself to conservative therapy.

4. The use of minimally invasive endoscopic transduodenal interventions, diapetic methods and laparoscopy, as well as active conservative therapy, made it possible to avoid relaparotomy in patients with "small" lesions in 94.2% of patients.

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