

ANALYSIS OF SURGICAL TREATMENT OPTIONS FOR DIFFERENT TYPES OF MIRIZZI SYNDROME

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Abstract: this report is based on the analysis of 139 clinical cases of the 1st clinic of SamMI (2010-2020). The age of the patients ranged from 25 to 87 years. Old. Among 139 patients, women prevailed - 103 (74.1%), men - 36 (25.9%). Of all the patients, the discussed elderly patients prevailed - 58 (41.7%) and the elderly - 68 (48.9%). In the process of analysis, the results of various types of surgical interventions performed in 139 patients with Mirizzi syndrome. The main areas of work: standardized surgical access depending on the type of Mirizzi syndrome, a classification of Mirizzi syndrome based on the level of lesion and localization of cholecysto-biliary fistulas is proposed.

Keywords: Mirizzi syndrome, classification, surgical treatment.

АНАЛИЗ ВАРИАНТОВ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ РАЗЛИЧНЫХ ТИПОВ СИНДРОМА МИРИЗЗИ

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Аннотация: данный отчет основан на анализе 139 клинических случаев 1-й клиники СамМИ (2010 - 2020 гг.). Возраст пациентов колебался от 25 до 87 лет. Среди 139 больных преобладали женщины - 103 (74,1%), мужчин - 36 (25,9%). Из всех больных преобладали обсуждаемые пациенты пожилого возраста - 58 (41,7%) и старческого возраста - 68 (48,9%). В процессе анализа - результаты различных вариантов хирургических вмешательств, проведенных у 139 пациентов с синдромом Мириizzi. Основные направления работы: стандартизированный хирургический доступ в зависимости от типа синдрома Мириizzi, предложена классификация синдрома Мириizzi, основанная на уровне поражения и локализации холецисто-желчных свищей.

Ключевые слова: синдром Мириizzi, классификация, хирургическое лечение.

Introduction. Mirizzi syndrome (SM) is a severe complication of cholelithiasis (GSD), caused by the development of an inflammatory and destructive process in the neck of the gallbladder and bile ducts, caused by calculus, leading to stenosis of the bile ducts and the formation of cholecystobiliary fistula [1, 4, 5]. The pathology was first described by the Argentine surgeon R.L. Mirizzi in 1948. SM is one of the rare and difficult to diagnose complications of gallstone disease. According to the literature, it occurs on average in 0.25-6% of patients with various forms of cholelithiasis [2-6]. Before surgery, it is correctly diagnosed using the entire complex of modern methods only in 12.5-22% of cases [1-4.8]. In clinical practice, various classifications of SM have been proposed and applied, and in essence they all reflect different options for the formation of a pathological cholecystobiliary fistula and the degree of destruction of the extrahepatic bile ducts [2, 4, 6, 7]. The immediate and long-term results of surgical treatment of CM remain unsatisfactory. Intraoperative and postoperative complications, including iatrogenic damage to the bile ducts, developing in 15.5% of cases,

explain the rather high postoperative mortality, reaching 11-14% [2, 4, 6]. 12-20% of patients require reoperation for cicatricial strictures of hepaticoholedochus [2, 5, 7, 8]. This state of the problem indicates the need for further study, search and development of the most optimal and standardized tactics of medical and diagnostic algorithm for the treatment of SM. Intraoperative and postoperative complications, including iatrogenic damage to the bile ducts, developing in 15.5% of cases, explain the rather high postoperative mortality, reaching 11-14% [2, 4, 6]. 12-20% of patients need reoperation for cicatricial strictures of hepaticoholedochus [2, 5, 7, 8]. This state of the problem indicates the need for its further study, search and development of the most optimal and standardized tactics of the treatment and diagnostic algorithm. explain the rather high postoperative mortality, reaching 11-14% [2, 4, 6]. 12-20% of patients need reoperation for cicatricial strictures of hepaticoholedochus [2,5,7,8]. This state of the problem indicates the need for its further study, search and development of the most optimal and standardized tactics of the treatment and diagnostic algorithm. explain the rather high postoperative mortality, reaching 11-14% [2, 4, 6]. 12-20% of patients require reoperation for cicatricial strictures of hepaticoholedochus [2, 5, 7, 8]. This state of the problem indicates the need for its further study, search and development of the most optimal and standardized tactics of the treatment and diagnostic algorithm.

Material and methods. This message is based on the analysis of 139 clinical observations of SM that were in the 1st clinic of SamMI (2010-2020). The patients' age ranged from 25 to 87 years. Among 139 patients, women prevailed - 103 (74.1%) patients, and there were 36 men (25.9%). Of all the patients discussed, patients of elderly age - 58 (41.7%) and elderly patients - 68 (48.9%) predominated.

According to McSherry's classification (1982), there were 65 (46.7%) patients with type I SM, 74 (53.3%) patients with type II. Chronic calculous cholecystitis was established in 104 (74.8%) patients, acute calculous cholecystitis - in 35 (25.2%), including acute catarrhal cholecystitis occurred in 17 patients, phlegmonous - in 8, gangrenous - in 7, empyema of the gallbladder - in 2 and dropsy of the gallbladder - in 1. Choledocholithiasis was diagnosed in 80 (57.5%) patients. Most of the patients (90 or 64.7%) were hospitalized with obstructive jaundice syndrome, of which 33 (23.7%) were accompanied by acute cholangitis.

Concomitant somatic pathology was detected in 84 (60.4%) patients. The severity of the patient's condition at admission was assessed using the ASA system. At the same time, 64 (76.2%) patients were assigned to class II, 17 (20.2%) to class III, and 3 (3.6%) to class IV. All patients underwent analysis of complaints, medical history and previous interventions on the bile ducts, physical examination data, laboratory research methods: hemogram, general urine analysis, biochemical blood test, coagulogram. To diagnose SM, we routinely used ultrasound (ultrasound). Ultrasound was performed on ultrasound scanners Voluson 530D, Aloka SSD 725 using convex transducers with a radiation frequency of 3.0 MHz, 3.5 MHz and 5 MHz, operating in real time and a gray scale of scanning.

Results and discussion. All studied patients went to the hospital at different stages of the development of gallstone disease. In 11 (7.9%) patients, an acute attack of the disease was noted for the first time, mainly in type I SM. Periodically recurring seizures were noted more often in patients with type II of this syndrome (83 patients, 59.7%). Jaundice, observed in 90 (64.7%) patients, in 74 (53.2%) had a transient character, and only in 16 (11.5%) was persistent. The instrumental method of first-line diagnostics was ultrasound, which had not only screening value, but also turned out to be necessary and sufficient for syndromic diagnosis. When evaluating echograms, the presence of the following sonographic criteria was considered pathognomonic for SM: shrunken (scleroatrophic) and "disconnected" gallbladder filled with one or many stones; calculus fixed in the neck or cystic duct; expansion of intrahepatic ducts and common hepatic duct in combination with unexpanded common bile duct; lack of location of the wall of the gallbladder in the area of adhesion to hepaticoholedochus. At the preoperative stage, CM was established in 106 (76.2%) patients. We believe that a detailed analysis of the clinical manifestations of cholelithiasis and its complications (a long history of calculous cholecystitis, frequent attacks of biliary colic, biliary hypertension with a transient tendency, high levels of bilirubin and transaminase fractions) in combination with the above sonographic criteria can quite reliably indicate on the presence of CM in each specific case. lack of location of the wall of the gallbladder in the area of adhesion to hepaticoholedochus. At the preoperative stage, CM was established in 106 (76.2%) patients. We believe that a detailed analysis of the clinical manifestations of cholelithiasis and its complications (a long history of calculous cholecystitis, frequent attacks of biliary colic, biliary hypertension with a transient tendency, high levels of bilirubin and transaminase fractions) in combination with the above sonographic criteria can quite reliably indicate on the presence of CM in each specific case. lack of location of the wall of the gallbladder in the area of adhesion to hepaticoholedochus. At the preoperative stage, CM was established in 106 (76.2%) patients. We believe that a detailed analysis of the clinical manifestations of cholelithiasis and its complications (a long history of calculous cholecystitis, frequent attacks of biliary colic, biliary hypertension with a transient tendency, high levels of bilirubin and transaminase fractions) in combination with the above sonographic criteria can quite reliably indicate on the presence of CM in each specific case.

We are supporters of open surgical interventions. Since 1998, in the surgical treatment of SM, we have used various options for the surgical correction of this pathology, and in recent years we have worked out a clear treatment tactics depending on the type of syndrome. In the process of standardization of surgical tactics in SM,

it became necessary to revise the existing classifications, taking into account the level of localization of the cholecystobiliary fistula, because in the classifications of A. Csendes, CK McSherry, T. Nagakawa and their various modifications, the level localization of the fistula and its location in the confluence area are not presented. In our practice, in 4 cases, we encountered complex forms of type II SM, when the cholecystobiliary fistula was localized in the confluence area with complete destruction of its anterior wall. In the available literature, we have not come across a description of such complex cases of SM. In this regard, we have developed and proposed a classification of SM, based on the localization of the cholecystobiliary fistula at different levels of the extrahepatic bile ducts:

Type 1 - compression of the common bile or hepatic duct by a calculus fixed in the neck of the gallbladder or cystic duct (65 patients, 46.7%); Type 2 - cholecysto-cholechoal: localization of cholecysto-biliary fistula distal to the confluence of the cystic duct into the common bile duct (24 patients, 17.2%);

Type 3 - ductal: localization of the cholecysto-biliary fistula at the level of the cystic duct by this destruction, wide communication of the gallbladder with the common bile duct (38 patients, 27.3%);

Type 4 - confluence: localization of the cholecystobiliary fistula at the level of hepatic choledochus and confluence (12 patients, 8.6%).

The presented classification, in our opinion, is structurally simple and practical in the choice of tactical and technical solutions for SM. Accordingly, the surgical treatment of CM is presented in Table 1.

Table 1. Options for surgical operations depending on the type of CM

№	Types of operations	CM types, (according to the proposed classification)			
		I	II	III	IV
1	Laparoscopic cholecystectomy	3			
2	Subtotal cholecystectomy with stitching of the gallbladder neck	2			
3	Cholecystectomy without duct drainage	19			
4	Cholecystectomy, external drainage of the common bile duct	12	3	6	1
5	Cholecystectomy, choledocholithotomy, external drainage of the common bile duct	19	3	14	1
6	Cholecystectomy, choledocholithotomy, choledochoduodenostomy according to Yurash-Vinogradov	6	6	14	
7	Cholecystectomy, choledochoduodenostomy according to Yurash-Vinogradov	4		2	
8	Subtotal cholecystectomy, choledocholithotomy, plasty of the choledochus defect by the wall of the gallbladder without drainage of the ducts			1	
9	Cholecystectomy, choledochoduodenostomy according to Yurash-Vinogradov, external drainage of the common bile duct			1	
10	Subtotal cholecystectomy, plasty of the common bile duct defect by the wall of the gallbladder, external drainage of the common bile duct		6		
11	Subtotal cholecystectomy, choledocholithotomy, plasty of the choledochus defect by the wall of the gallbladder, external drainage of the choledoch		3		1
12	Subtotal cholecystectomy, choledocholithotomy, plasty of the choledochus defect by the wall of the gallbladder, choledochoduodenostomy according to Yurash-Vinogradov		2		
13	Cholecystectomy, external drainage of the common bile duct, choledochoduodenostomy according to Yurash-Vinogradov		1		
14	Cholecystectomy, Ru hepaticojejunostomy				1
15	Cholecystectomy, choledocholithotomy, Roux hepaticojejunostomy				2
16	Subtotal cholecystectomy, Roux cholecystobihepaticojejunostomy				2
17	Cholecystectomy, external drainage of hepaticocholedochus / lobar hepatic ducts				3
18	Cholecystectomy, choledocholithotomy, Roux hepaticojejunostomy, external drainage of the common bile duct				1
Total (n = 139)		65	24	38	12

Analyzing the data presented in the table, it can be stated that in type I CM, cholecystectomy was performed (including laparoscopically in 3 patients). Of these, in 31 (47.7%) cases, it was combined with external drainage of the common bile duct, in 10 (15.4%) - with internal drainage, and in 24 (36.9%) - completed without drainage.

With type II SM, i.e. in the presence of cholecysto-cholechochal fistula, 11 (45.8%) patients underwent plasty of the choledochus defect with a left flap of the gallbladder wall. In other cases, external drainage of the common bile duct through the fistula (6 patients) and choledochoduodenostomy according to Yurash-Vinogradov (7 patients) were performed.

For type III cholecystectomy was accompanied by external drainage in 20 (52.6%) cases, in 17 (44.7%) - the formation of choledochoduodeno-anastomosis according to Yurash-Vinogradov and in 1 (2.6%) a plasty of the common bile duct defect with a gallbladder flap. In type IV SM, cholecystectomy was completed with external drainage of the ducts (41.6%), plasty of the defect with a gallbladder flap with external drainage (8.3%), hepaticojejunostomy according to Roux (33.3%) and cholecystobihepaticojejunostomy according to Roux (16.6%)

In 117 (84.1%) cases, cholecystectomy was performed according to the Pribram method (cholecystectomy by lumping or "on the finger" with mucoclasia of the mucosa). This emphasizes the view that surgery for SM is complex and is referred to as a "bile duct trap" [8]. In this syndrome, the anatomy of the bile ducts is very distorted, the gallbladder is wrinkled, fibrously altered, with a dense infiltrate in the area of the Calot triangle. Pribram's method allows you to avoid damage to the bile ducts and complete the operation with minimal risk. In 71 (51%) cases, operations were combined with choledocholithotomy.

The operated patients had the following complications: wound suppuration [11], the formation of a subhepatic abscess [2]. Subhepatic abscesses were eliminated by ultrasound-guided percutaneous drainage. One patient was re-operated, in which after 2 years developed intrahepatic lithiasis with a stricture of cholecystobihepaticojejunostomy. The operation was performed to uncouple the cholecystobihepaticojejunoanastomosis, dissect the right and left hepatic ducts according to Keru and form a high biliodigestive anastomosis according to Roux. The mortality rate was 2.1% [3]. The causes of death were acute cardiorespiratory failure with pulmonary edema [1], biliary cirrhosis of the liver with hepatic failure [2].

Findings. Thus, SM is a severe complication of gallstone disease with a variety and complexity of the morphological structure. A surgeon operating on the biliary system must know the basic principles of reconstructive surgery on the bile ducts and be ready to detect SM. The proposed classification of SM allows to standardize surgical tactics and is practically in demand. In type I CM, the operation of choice is cholecystectomy, with or without external drainage of the common bile duct. In type II and III, subtotal cholecystectomy with plasty of the common bile duct defect with a gallbladder flap, with choledochoduodenostomy or external drainage of the common bile duct through the fistula is optimal. The differences in operative tactics in these two types consist in the predominant performance in type II plasty of the common bile duct defect, and in type III - external drainage of the common bile duct through the fistula and the formation of choledochoduodenoanastomosis. In type IV SM, operations should be completed with the imposition of high biliodigestive anastomoses according to Roux (cholecystobihepaticojejunostomy and hepaticojejunostomy). The stated standardized surgical tactics according to the types of Mirizzi syndrome provide satisfactory treatment results with minimal values of postoperative complications and mortality.

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