

DIAGNOSTIC AND TREATMENT METHODS

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	MODERN SURGICAL TREATMENT			
	OF ELDERLY PATIENTS WITH			
DOI 10.25789/YMJ.2022.77.09	CHOLEDOCHOLITHIASIS AND			
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A prospective analysis of diagnosis and treatment of the elderly and senile patients with acute cholecystitis complicated by choledocholithiasis and mechanical jaundice is carried out. Ultrasound scan, multispiral computed tomography, MRI and endoscopic retrograde cholangiopancreaography were used in complex diagnosis. The tactics of a double step-by-step approach in surgical treatment of these patients was performed, the first stage required minimally invasive methods of decompression of bile ducts, including endoscopic. The second stage was preferably carried out by minimally invasive surgical operation. The duration of pre-operative preparation and choice of the method of the operation depended on the morphology of acute cholecystitis and degree of the patient's physical condition. Due to the double step-by-step stage approach of the surgical tactics in such patients the level of postoperative complications decreased up to 9.1% and postoperative lethality reduced up to 6.8%.

Keywords: acute cholecystitis, choledocholithiasis, elderly and senile age, risk factors, level of the severity of the physical condition, mechanical jaundice, cholecystectomy, microcholecystostomy, magnetic resonance (MR) cholangiography, endoscopic retrograde cholangiopancreaography, lythoextraction, laparoscopy, laparoscopic cholecystectomy, cholecystectomy.

Introduction. Cholelithiasis is one of the prevalent diseases, from 10% to 40% of the total world population suffer from it depending on the age and sex, the total numbers showed 23 million

people in 2016. The cases of cholelithiasis in the Russian Federation are similar to the numbers worldwide [13]. The surgical practice most commonly, as a rule, deals with the complicated forms of cholelithiasis, which refers to 40% of all the cases. Most common complication is choledocholithiasis, which is caused by concrement migration into the bile duct lumen resulting in mechanical jaundice in 25% of the cholelithiasis cases. The concurrent pathologies like obesity, ischemic heart disease, arterial hypertension and chronic pathologies of the respiratory system inevitably result in outcomes of the surgical treatment [7,8,14].

Most prevalent non-invasive methods of diagnosis are ultrasound scan (US) and magnetic resonance imaging (MRI) of the bile ducts. Sensitivity of the ultrasound scan in the diagnosis of the mechanical jaundice is 87-90%, in cholelithiasis - 98.3-99%. tumors of the bile ducts - 63.9-70%, total specificity - 85.4-90% [12,15,16,20]. Magnetic resonance imaging (MRI) is still the most informative and non-invasive method of choledocholithiasis diagnosis. This method reveals the bile duct stones of the size up to 2 mm in diameter, the sensitivity is 100% and specificity is 96-98.5% [1,11].

The main cause of mortality in the elderly patients with acute cholecystitis complicated by acute cholecystitis and mechanical jaundice is progression of the hepatic failure after the surgical intervention. The elderly patients suffering from different concomitant diseases, as we have described above, are at a high risk in a case of urgent surgery [9,10,17].

A variety of therapeutic and diagnostic measures, which include consequent approach and total volume of the medical intervention are realized in two step-by-step stages for such patients [2,3,4,16,18,19]. The first stage is realized by conservative elimination of the source of the cholestasis by means of endoscopic or X-ray endobiliary interventions. Non-surgical removal of the cholestasis in the bile ducts and bile intoxication with the following hepatic failure helps restore the functions of such vital organs as the liver and the pancreas. The delayed operation is performed with a minor risk for the patient and in most cases it requires lesser scope of work [6].

Objectives of the work are to analyze the results of the double step-by-step approach surgical treatment in the elderly and senile patients with acute cholecystitis complicated by choledocholythiasis and mechanical jaundice.

Methods and materials. The controlled cohort analysis of the results of the surgical treatment of 87 (100%) elderly and senile patients, with complicated forms of the cholelithiasis at its different degrees, is represented. The patients were admitted to the surgical department of the Republican hospital #2, the Center for urgent care in Yakutsk within the period of 2016-2020 (table 1).

A great prevalence of the patients are the women - 55 (63.2%), the men - 32(36.8%). Concomitant diseases of the patients are represented in the table 2. The most common pathologies were disorders of the cardiovascular, respiratory, urinary systems and diabetes which was

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closely associated with a high rate of the postoperative mortality [5,6]. Nonetheless, the objective picture of the severity of the case can be represented only together with the factors of the operative and anesthetic risks taking into account somatic pathologies (table 2).

Postoperative lethality is associated with these diseases [5,6]. However it should be underlined again that age and concomitant diseases do not fully reflect the severity of the physical condition of the patient [4].

Magnetic resonance cholangiography (MR cholangiography) was preferable in diagnosing choledocholithiasis. MR cholangiography is a highly informative method to diagnose the location of the concrement in the bile ducts, and it is associated with the total volume of the intervention, outcome and prognosis of the disease. The sensitivity and specificity of MR angiography method is estimated by 94.3% and 100% respectively [1,11]. Thus, the morphologic forms of acute cholecystitis were revealed according to the results of clinical examination and the results of the ultrasound scan and MR cholangiography: catarrhal form in 25 (28.7%), destructive (phlegmonous) in 62 (71.3%) (table 3).

There are 4 (I,II,III and IV) categories of the severity of the patient's physical condition. It is determined that the prolonged cases of the jaundice could precisely determine the severity of the condition out of all the clinical signs of cholelithiasis complications. Thus, almost all the cases lasting for more than 2 weeks are included into the III and IV categories of the severity.

Results and discussion: The choice of the therapeutic tactics in a case of acute cholecystitis is performed with the help of the scored rating of the surgical risks depending on the severity of the patient's condition [4]. The score rating helped diagnose and treat complicated cases of cholelithiasis. Such tactics allowed optimum volume of minimally invasive surgical operations by means of endoscopic retrograde cholangiopancreaography (ERCP), endoscopic papillosphincterotomy (EPST) with lythoextraction, ultrasound guided microcholecystostomy, laparoscopic cholecystectomy, cholecystectomy by a mini approach [5,6].

Endoscopic retrograde cholangiopancreaography (ERCP) was performed in 47 (54%) cases, 17 (46%) patients suffered from multiple choledocholithiasis, 5 (10.4%) cases were complicated by acute suppurative cholangitis, 11 (23.1%) had peripappilary diverticulum in the area Table 1

Age and severity distribution of the patients

Age, years	Patients, total	Including: category of the condition severity n(M±m%)				
	n(M±m%)	Ι	II	III	IV	
60-69	41(47.2)	3(25.0)	23(56.1)	11(22.0)	4(28.5)	
70-79	37(42.5)	9(75.0)	14(34.1)	7(14.0)	7(50.0)	
80 and older	9(10.3)	-	4(9.8)	2(10.0)	3(21.5)	
Total	87(100.0)	12(100.0)	41(100.0)	20(100.0)	14(100.0)	

Table 2

Concomitant diseases in (87) patients with acute cholecystitis, complicated by the mechanical jaundice

Concomitant diseases	The number of the patients
Coronary heart disease with changes in ECG	27
Myocardial infarction, dated back from 9 to 17 days	3
Postinfarction aterosclerotic cardiosclerosis with the disturbance in the rhythm and conduction	29
Morbus hypertonicus, I-II degree	32
Cardiovascular collapse, II-III degree	5
Bronchial asthma	16
Diabetes mellitus	13
Chronic kidney disorders	6
Acute stroke dated back 3-5 days	1
Residual effects after stroke	4
Chronic and non-specific pulmonary disorders	10
Others	4

Table 3

Prevalence of the cases according to morphological form of gallbladder inflammation and the level of its severity

Type of gallbladder inflammation	Patients, total n (M±m%)	Including: category of the condition severity n (M±m%)				
			II	III	IV	
Catharal	25(28.7)	7(38.8)	13(33.3)	3(14.2)	2(22.3)	
Phlegmonous gangrenous	62(71.3)	11(61.2)	26(64.9)	18(85.8)	7(77.7)	
Total	87(100.0)	18(100.0)	39(100.0)	21(100.0)	9(100.0)	

of major duodenal papilla, and 7 (16.1%) patients had adenoma of the papilla. The size of the gallstones varied from 1.0 to 2.2 cm.

The diagnostic stage was followed by an attempt of endoscopic papillosphincterotomy or balloon dilatation of major duodenal papilla, after which they underwent lithotripsy and removal of the concrements which was successful in 40 (85%) cases. 5 (11%) patients underwent secondary bile stone removal (lithoextraction), 2 (4%) patients had very large concrements in the hepatocholedoch, endoscopic manipulations for them were ineffective. They had laparoscopic choledocholithotomy to extract the stones.

Volume of the endoscopic interventions directly depended on the clinical and anatomical conditions of each patients, size and amount of the concrements, their localization and concomitant pathology of the gallbladder, major duodenal papilla and pancreas. In "standard" cases endoscopy included endoscopic papillosphincterotomy (EPST) and lythoextraction, in non-standard (complex) anatomical conditions a balloon dilatation,



lithotripsy, nasobiliary drainage and hepatocholedoch stenting were engaged.

If there is a destructive cholecystitis complicated by choledocholithiasis and mechanical jaundice the surgical operation can cope inflammatory process in the gallbladder, thus preventing urgent laparotomy to decompress the gallbladder. Ultrasound guided cholecystostomy is a less traumatic operation, it is characterized by lesser rate of the following complications [4].

Double step-by-step stage surgical interventions were performed only in the cases of catarrhal form of acute cholecystitis complicated by choledocholithiasis and mechanical jaundice in 25 (28.7%) patients. After endoscopic corrections of choledocholithiasis 11 of these patients were diagnosed with I-II categories of the severity, they underwent laparoscopic cholecystectomy afterwards. A single-stage laparoscopic cholecystectomy and choledocholythotomy with lythoextraction was performed in 6 patients. Out of the total 25 cases that underwent step-by-step surgical interventions in its total volume, only 1 case required a wide laparotomy. 4 patients had postoperative complications. No lethal cases were registered

The vast majority of the elderly and senile patients 62 (71.3%) suffering from acute cholecystitis and mechanical jaundice was diagnosed with destructive (phlegmonous) cholecystitis morphologically. Out of these cases 37 patients with the categories I and II underwent laparoscopic cholecystectomy with choledocholithiasis which resulted successfully.

18 cases (29.03%) of destructive cholecystitis were diagnosed with the III category of the severity. The patients of this group had ultrasound-guided microcholecystomy a day or two before the radical surgical intervention in order to decompress the gallbladder and prevent mechanical jaundice. As a result, endoscopic cholecystectomy was performed after 24-48-hour of previous endoscopic papillotomy and lythoextraction. There were 2 cases of the wide laparotomy. Acute cardiovascular insufficiency caused a lethal case of 1 patient.

There were 8 cases (12.9%) with the IV category of the severity of condition. The total volume of the surgical intervention was similar to the III category: all the patients underwent initial decompression of the gallbladder to prevent mechanical jaundice and cholemia by means of microcholecystostomy with the following endoscopic pappilothomy and lythoextraction of choledocholithiasis by the end of the second day. 3 lethal cases out

of 8 were registered, they were mostly caused by acute hepatorenal insufficiency in 2 cases; and 1 died of sepsis effects and pulmonary embolism.

Conclusion. Thus, geriatric patients with acute cholecystitis complicated by choledocholithiasis and mechanical jaundice compose a particular group of the patients which requires specific diagnostic and therapeutic approaches. Their treatment is characterized by a double step-by-step approach, where the first stage is performed by ultrasound quided microcholecystostomy of the gallbladder to prevent mechanical jaundice, cholemia and hepatic failure which is followed by the second stage, i.e. the radical operation as endoscopic cholecystoctomy.

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A.M. Kononov, O.G. Sidorova, S.K. Kononova, T.K. Davydova APPROACHES TO PHYSICAL REHABILITATION OF PATIENTS WITH SPINOCEREBELLAR ATAXIA TYPE 1 IN THE CLINIC OF YSC CMP

The aim of the study was to search for approaches to physical rehabilitation of patients with spinocerebellar ataxia type 1 (SCA1) using kinesitherapy. Gradual activation of motor activity is the main condition for improving the psychological and physical health of patients with SCA1. In our article, physical rehabilitation is specially directed use of physical exercise as a means of treating a disease and improving body functions that are disrupted or lost due to SCA1's neurodegenerative processes.

Keywords: kinesitherapy, physical rehabilitation, spinocerebellar ataxia type 1, Republic of Sakha (Yakutia).

Introduction. Studies of hereditary diseases of the nervous system are becoming more relevant in the world due to severe clinical manifestations, disability and social maladaptation of patients.

In 1991, dynamic mutations, which are the cause of a large group of diseases of the human nervous system, were described, among which polyglutamine diseases with an increase in the number of CAG repeats and various clinical manifestations, such as Kennedy's disease, Huntington's Chorea and spinocerebellar ataxia of types 1, 2, 3, 6, 7 and 17 are distinguished [10].

Spinocerebellar ataxia type 1 (SCA 1) belongs to the group of neurodegenerative diseases with late manifestation. The mutation causing SCA1 is located on the p arm of chromosome 6 and represents a pathological increase in trinucleotide CAG repeats, therefore SCA1 is also classified as a disease with dynamic mutations. The prevalence of SCA1 varies in different populations of the world [5,8].

In the last two decades, scientific and clinical interest in the use of physical exercises for the treatment of mobility problems in persons with neurodegenerative pathology has sharply increased. Advances in basic scientific research suggest neurochemical and neuroplastic changes after physical exertion, an increasing number of high-quality studies document specific aspects of improving mobility after physical exertion [6,7,9,11].

Individuals suffering from type 1 spinocerebellar ataxia are usually demotivated to engage in recreational physical exercise. The most common obstacles are external barriers: the lack of an accessible environment for people with disabilities, feelings of awkwardness and embarrassment in public, anxiety, frustration and anger. Patients with SCA1 are also demotivated by muscle weakness, stiffness, balance disorders, and fear of injury [9].

One of the forms of exercise therapy is kinesitherapy - a new direction in medicine based on the restoration of the human ability to move normally. A person, performing active and passive movements and certain exercises of therapeutic gymnastics, achieves a definitive improvement in his condition. Kinesitherapy as a specialty has a scientific and applied nature, which combines medicine, pedagogy, physiology and biochemistry. It contributes to the psychoemotional and physical comfort of the individual [2].

The aim of the study was to search for approaches to physical rehabilitation of patients with spinocerebellar ataxia type 1 (SCA1) using kinesitherapy.

Materials and methods. The medical examination of patients with SCA1 and the curation of the Republican medical and genetic register of hereditary and congenital pathology has been conducted in the Medical and Genetic Center of the Republican Hospital No. 1 - NMC since 2001, and in 2019, a Center for Neurodegenerative Diseases was organized in the Clinic of the YSC CMP on the order of the Ministry of Health of the Republic No. 01-07/184 dated 02/14/2019. "On the procedure for routing neurological patients suffering from neurodegenerative diseases at the outpatient and hospital stages" [1,3].

The study was conducted within the framework of the research "Exercise therapy in the rehabilitation system of patients with spinocerebellar ataxia type 1 in the Republic of Sakha (Yakutia)", agreed by the local Committee on Biomedical ethics at the YSC CMP (extract from Protocol No. 53 of April 13, 2021)

The study included patients with SCA1 who were treated in the clinic of YSC CMP during 2021. A total of 14 patients were examined, of which 2 were men and 12 were women; 28% of the examined were young people from 20 to 30 years old; 35% were elderly patients from 51 to 75 years old. All patients had gait disorders to varying degrees. We used the Morse Fall Scale assessment, which is used to assess the probability of falling risk due to the presence of hereditary or acquired risk factors.

Results and discussion. One of the main clinical signs of SCA1 are gait disorders of the patient, due to damage to peripheral nerves, spinal cord roots, loss of sensitivity in the legs. In addition, with cerebellar ataxia, disorders of motor coordination are present, and patients are concerned about loss of balance, frequent falls [5,6]. In our study, gait disorders were assessed: the majority of patients (86%) receiving maintenance

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