

Modern Clinical Course of Cholelithiasis in the Far North

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ABSTRACT

The analysis of patients with cholelithiasis for the period from 21.12.2017 to 20.12.2018 was carried out. The increased number of patients with complicated cholecystitis was 49.59 %, mechanical jaundice – 35.9 % and gallstone pancreatitis – 20 %. Moreover, destructive forms are more often present in young patients. Ultrasound diagnosis was performed in 100 % of cases. The use of modern diagnostic methods allows choose the most appropriate tactics for the patient to manage and choose effective treatment, reducing the risks of postoperative complications. The main danger is the movement of concrement into the region of bladder neck and choledochous duct, when jaundice and bile colic attacks are formed making a vivid clinical picture of this pathology. Due to the fact that the severity of symptoms is quite rare, and the disease can begin subtly, this topic is of interest in modern medicine. Due to the chololithiasis increase, the variety of clinical manifestations, the presence of atypical forms of the disease, the percentage of lethality remains high. The study of the issues of symptoms, diagnosis and treatment of calculouscholecystitis in patients living and working in the adverse environmental conditions of the Far North become relevant and acquire important practical importance.

Keywords: Cholelithiasis, instrumental diagnostics, ultrasound examination, clinical course.

1. INTRODUCTION

Cholecystitis is a chronic disease with a genetic predisposition, in which the formation of stones in the bile tract is observed [5–12]. Cholecystitis is one of the most common diseases of the digestive system. According to 24 World Congress of Gastroenterologists (2014), it is diagnosed in more than 10 % of the world's population. Gender and age characteristics play an important role in this pathology [13–16]. In Russia, the prevalence of the disease reaches 12 %. The highest incidence of 71.1 % comes from the age of 40–59 years old. There is a "rejuvenescence" of bile stone disease, an increase in the incidence of childhood and among the male population. Women suffer from this disease 3–4 times more often than men [1–4]. After 70 years, gender differences in incidence disappear, the incidence gradually increases and reaches 30–40 %. Publications of clinical observations of foreign and domestic literature indicate that in the last 45–50 years the

incidence of cholecystitis doubles every 10 years, and the clinic is characterized by diversity and atypical course [17–23]. Ultrasound showed a fairly high diagnostic capability in the diagnosis of cholecystitis. It occupies the leading place at the stage of primary diagnostics both in evaluation of bile duct structure variants and in recognition of calculus lesion of extra and intrahepatic bile ducts [24]. Understanding of cholecystitis risk factors and timely diagnostic methods is useful not only for prevention, but also for prevention of complications [25–28]. The frequency of daignostic of pancreatitis in patients with cholecystitis, according to various values, is 25–90 % or more [29]. Every year, more than one million operative interventions for cholecystitis are performed in the world, and cholecystectomy is the most frequent abdominal surgery in general surgical practice. According to various authors, the incidence of biliary pancreatitis after operations on the abdominal organs reaches 20–25 %, and after interventions on the bile tract – 30–55 % [30].

At the same time, the differentiation of the diagnosis of toxicoses from infectious, invasive and alimentary diseases that accompany bile disease is of great importance. It is also necessary to note changes in the nature of human nutrition depending on the geographical region. In the diet of the main food of residents of Yakutia, the consumption of fish products is in fourth place after meat and dairy products, bread and bakery products. Technogenic load of reservoirs of the republic of the last years affects animal and flora of all northern region of Yakutia and also as a result of a set of unauthorized, aero technogenic emissions in the atmosphere as inside, and out of the republic that couldn't have influence on health of the population. The tasks of assessing the state of the natural environment, determining its ecological reserve and critical load become priority. Environment affects the growth of a variety of diseases of the population.

2. METHODS AND MATERIALS

2.1 First clinical group

The basis of the work was the research materials collected by the author for 1987-1996, the first group – the medical history of 624 patients and the statistical data of the "Republic Hospital No. 2 – Emergency Center" A total of 624 patients with various forms of cholecystitis were: 444 women and 180 men aged from 16 to 82 years old. Indigenous patients – Yakuts, Chukchi; Evens, Evenks, Yukagirs, Dolgans. They amounted to 351 patients (90 men and 261 women).

Non-indigenous people lived in the Far North for more than 5 years, do not belong to small nationalities. They amounted to 273 patients (90 men and 183 women). Out of 624 patients, 74 patients received conservative treatment, due to refusal of surgery and a number of other causes. Patients of indigenous nationality make up 56.3 %. A comparison of the frequency of various clinical and morphological forms of cholecystitis among patients treated in the clinic over the past 10 years showed their reliable increase and, in particular, there were "patients of working age – 88.9 % of the total number of patients. The average age is 47.1, which makes the problem socially significant.

2.2. Second Clinical Group

The object of the study was medical histories and statistics of the "Republic Hospital No. 2 – Emergency Center" for the period from 21.12.2017 to 20.12 2018 – the second group. In total, there were 496 patients. Indigenous patients – 248 (50 %), non-indigenous – 248 (50 %). 186 Men (37.5 %), women – 310 (62.5 %), whose age was on average -44 years.

3. RESULTS

3.1 Atypical forms of the clinical course of housing and communal services

A study of the clinical course of cholecystitis in the Far North revealed that the symptoms of the disease in indigenous people are very diverse and have a number of significant differences compared to non-indigenous patients: a short history of the disease (up to 3 years) occurs in indigenous people in 62.8 % of cases (versus 5 % in non-indigenous people) ($P < 0.001$); the latent course of cholecystitis in indigenous people is more common than in non-indigenous people (4.7 % and respectively); typical localization of pain in indigenous individuals occurs only in 29.8 % (versus 47 %) ($P < 0.003$); atypical localization of pain in indigenous individuals was observed 65.5 %. In the non-indigenous group, the atypical form of the clinical course of cholecystitis was revealed in 19 % ($P < 0.003$) of patients. Bile colic pain in indigenous patients is less common than in non-indigenous patients (with responsible 18.7 % and 73 %) ($P < 0.001$). In almost half of the cases (49.2 %) in indigenous patients, pain attacks appeared without visible causes, while in patients of the non-indigenous group the "independent" nature of pain was observed only in 18 %. Pain syndrome in non-indigenous patients in 72 % of cases was provoked by fatty food, in comparison with 33 % in native ones. Various types of dyspepsia during the exacerbation of the disease were more often observed in non-indigenous patients (22.1 %: 1 8.5 %), and in the stage of remission of the disease – more often in individuals of the indigenous group (38.6 % and 9.1 %, respectively). Studies of the incidence of cholecystitis specific symptoms (Grekov, Ortner, Ker, Murphy) showed that they are more common in non-indigenous individuals (71.8 % vs. 21 %). Palpatory changes of the liver are more common in native patients (2.4 % versus 0.5 %). Mechanical jaundice during hospitalization in indigenous people was observed more often (32.4 % versus 8.9 %) than in patients of the non-indigenous group, in general the indicator was equal to 41.3 %. Patients of indigenous and non-indigenous nationality in the conditions of the Far North are conditionally distinguished by a typical, atypical and latent form of the disease course based on the systematization of clinical manifestations of cholecystitis. Atypical forms of cholecystitis according to organ diseases (86 %), intestinal (44 %), cardiac (16.9 %), renal (16.8 %) and rare forms. The operational interventions of cholecystectomy were performed in indigenous people – 43.5 %, in non-indigenous people in 81.1 %, with choledoch drainage in 23.3 % and 7.3 %, respectively. Combined operations were performed in indigenous people – 14.8 %, in non-indigenous people in 6.4 %. Postoperative complications were detected in 19.5 % of cases in native patients, 4.4 cases of which were life-

threatening and required urgent relaparotomy: bed bleeding (1), peritonitis (10), eventeration (1), subhepatic abscess (6), bile leakage (6). Non-indigenous postoperative complications were 8.7 %; relaparotomy was performed in 1.6 % of cases: bile leakage (3), subhepatic abscess (2), peritonitis (4). Postoperative mortality in indigenous patients was 2.2 %, in non-indigenous people – 1.1 %, total mortality – (3.3 %) after 1987-1996.

3.2 Complicated forms of cholecystitis

Compared to previous studies of 1987-1996, the clinical picture of patients for the period from 21.12.2017 to 20.12.2018 was slightly different. Patients with cholelithiasis were distributed across lesion zones (496) and disease-induced forms: patients with gallstones with acute cholecystitis – 246 (49.59 %), with gallstones with another cholecystitis – 31 (6.25 %), with gallstones without cholecystitis – 4 (0.8 %), with bile duct stones with cholangitis – 39 (7.86 %), with bile duct stones with cholecystitis – 97 (19.56 %), with bile duct stones without cholangitis or cholecystitis – 42 (8.47 %), with other forms of cholelithiasis – 37 (7.5 %).

4. DISCUSSION

4.1 Variety of clinical forms

The relevance of the problem of studying calculous cholecystitis is determined by the progressive increase in the incidence rate, especially its complicated forms, in the clinical picture of which the symptoms of mechanical jaundice prevail. People of working age from 25 to 45 years old are more likely to get ill, which are the basis of the socio-economic pool of our country. Among the patients, treated in Republic hospital No. 2 for 2018, complicated forms, in particular choledocholithiasis, occurred in 178 (35.9 %) of 496 patients. The average duration of stay in the hospital depended on the severity of the condition of the patients, with gallbladder stones with acute cholecystitis, it was 9.15 days; with gallbladder stones with another cholecystitis – 6.95 d; with gallbladder stones without cholecystitis – 12 d; with bile duct stones with cholangitis – 19.5 d; with bile duct stones with cholecystitis – 15.78 d; with bile duct stones without cholangitis or cholecystitis – 16.31 d; for other forms of cholelithiasis – 5.17 d. The comorbidity increased the duration of the patient's stay in the hospital. So, when studying patients for 6 months from June to November 2018, 285 patients with acute cholecystitis were hospitalized, 171 (60 %) of which were patients with hyperglycemia (indigenous-111, non-indigenous-60). Type 2 diabetes mellitus (DM) was confirmed in 39 patients (13.7 %): 132 (46.3 %) did not have a history of diabetes mellitus [31,32]. In about 2 % of cases, gallbladder pathology was recorded in patients with a general therapeutic hospital, acute cholecystitis was

central among diseases of the biliary system. The disease can last for years, periodically exacerbating and quieting, but steadily progressing. The duration of the disease of cholecystitis among patients was: from 1–5 years – 18 %, 5–20 years – 297 (42 %), 20–60 years – 198 (40 %).

4.2 Dependence of the clinical course of cholecystitis on adverse environmental conditions

A preliminary diagnosis of cholecystitis is based on data from a survey, history, examination, identification of typical risk factors for this disease. The role of nutritional disorders in the development of liver and bile tract diseases is well known, especially in indigenous people. Alcohol abuse, irregular nutrition, changes in the traditional nature of nutrition (the predominance of carbohydrates in food, a decrease in the consumption of meat and fish products due to the predominance of canned products) leads to an increase in morbidity. In places where the traditional type of nutrition (northern places of residence) is still preserved, the increase in the disease is minimal. In this regard, chemical and toxicological research in the veterinary and sanitary examination of fish products is of particular importance. Fish populations in the North-East of Russia, especially whitefish and salmon, with powerful anthropogenic exposure, go into a state of depression. Fish reduce reproductive ability, which affects their number, as well as various morphological abnormalities. Eating fish becomes dangerous to human health [31]. Instrumental diagnosis in the diagnosis of bile disease plays an important role, it has such advantages as: accessibility, lack of contraindications to research and the possibility of repeated use in the dynamics of the disease. The ultrasound study was conducted in 100 % of cases, and complications such as biliary pancreatitis – 99 (20 %), mechanical jaundice – 198 (40 %) were found. During ultrasound of abdominal organs, patients showed multiple specifics in 297 (60 %) cases, moderate hepatomegaly in 99 (20 %). Therefore, in typical biliary pain, it is necessary to immediately perform ultrasound of the abdominal organs. It was found that women fall ill 1.6 times more often than men. Men – 186 (37.5 %), women – 310 (62.5 %). Instrumental diagnostic methods play a significant role in making the diagnosis. Ultrasound found: diffusely altered liver, moderate hepatomegaly – in 99 (20 %) cases; expansion of intrahepatic ducts – 136 (27 %), specifics in choledoch- 178 (35.9 %) cases. Gallbladder and bile tract stones are defined as dense formations with ultrasonic shadow following them. Stones are usually located on the back wall of the gallbladder and shift when the body position changes. During ultrasound, stones with the smallest size of 12 mm are visible. Often, sediment is determined, that is, sand, multiple specificities were identified in 297 (60 %) cases. The

accuracy of the ultrasound method in diagnosing bile stone disease is up to 98 %.

Laboratory data: cholesterolemia within – 6.8, – in 99 (20 %) patients, total bilirubin increase (from 31 $\mu\text{mol/L}$ to 139) in 178 (36 %) cases, ACT to 392 – 198 (40 %), ALT to 196 in 397 (80 %), amylase to 2398 – 99 (20 %) patients, and with more than 20 years of cholecystitis, especially in indigenous people. Anemia was diagnosed in (60 %); erythropenia (20 %); leukocytosis – (60 %); neutrocytosis – (80 %); hypolymphemia – (60 %); thrombocytosis – (60 %); ESR acceleration (60 %) cases. According to the form of cholecystitis, acute phlegmonous calculus cholecystitis occurred – 128 (25.8 %) of 496 patients, acute gangrenous calculus cholecystitis – 118 (23.8 %) patients. Postoperative complications were detected in 298 (60 %) cases: perivesical abscesses -157 (52.6 %), biliary hypertension, cholangitis – 81 (27.4 %), biliary pancreatitis – 60 (20 %). As a result of the study, it was found: destructive forms of calculouscholecystitis are more common in young. Chronic calculouscholecystitis was 72 patients (14.5 %). The main danger is the movement of concrements into the region of the bladder neck and the common bile duct, when jaundice and bile colic attacks are formed, making a vivid clinical picture of this pathology. Due to the fact that the severity of symptoms is quite rare, and the disease can begin, this topic is relevant in modern medicine in terms of diagnosing its complications [32]. Acute course was observed in 419 (84.5 %) patients with bile colic: in indigenous – 186 (75 %) out of 248, in non-indigenous – 62 (25 %) out of 248; icteric sclerae and urine darkening, dyspeptic disorders (nausea – 62 (25 %) indigenous) and 31 (12.5 %) non-indigenous, multiple vomiting without relief – 31 (12.5 %) indigenous). A connection with the eating habits in indigenous people was found – in 93 (37.5 %) patients, non-indigenous people -155 (62.5 %). Among the studied patients with bile colic: acute pain in the right upper quadrant abdominal pain, bitterness in the mouth, nausea and vomiting, was found in the indigenous – 186 (75 %), in non-indigenous – 62 (25 %). Positive blister symptoms were detected in 186 (75 %) indigenous and 62 (25 %) non-indigenous patients. The total number of deaths in 2018 was 8 cases, as a result of gallbladder stones with acute cholecystitis – 3 (37.5 %), gallbladder stones with another cholecystitis – 2 (25 %), bile duct stones with cholangitis – 2 (25 %), bile duct stones with cholecystitis – 1 (12.5 %). Postoperative mortality was 1.6 %, compared to the previous period, decreased by 2 times (3.3 %). In the second group of patients, complications were observed: mechanical jaundice in 178 (35.9 %), biliary hypertension in 136 (27.4 %), cholestatic hepatitis in 37 (7.5 %), toxic hepatitis in 20 (4 %) and reactive pancreatitis in 99 (20 %), which required preoperative preparation, in the form of minimally invasive percreatitis Ultrasound results allow

determine the tactics of treating patients, choose the method of operative intervention.

5. CONCLUSIONS

1. Atypical forms of cholecystitis in the indigenous population of the Far North prevail in the overall structure of the disease (65.5 %), in the non-indigenous population atypical forms were recorded 3.4 times less often (19 %).

2. The current course of cholecystitis was characterized by the predominance of acute forms of bile disease – 49.6 %, and with an increase in its complicated forms – in 85 % of cases, chronic forms – in 14.5 % of cases.

3. The mechanical jaundice picture was more often observed in the period from 2017-2018-35.9 % -1 years of research than in the period 1987-1996 (41.3 %) – for 10 years of research.

4. There is an increase in postoperative complications: they were revealed in 298 (60 %) cases in 2018: perivesical abscesses – 157 (52.6 %), biliary hypertension, cholangitis – 81 (27.4 %), biliary pancreatitis – 99 (20 %), in comparison to 19.5 % cases in native patients 19.5 % cases, in non-indigenous postoperative complications amounted to 8.7 % according to 1987–1996; which was associated with a long period of stone-bearing – from 5–20 years (42 %) of patients and the presence of comorbidity – type 2 diabetes mellitus (DM) was confirmed in 39 (13.7 %) patients.

5. Postoperative mortality amounted to 1.6 %, compared to the previous period decreased by 2 times (3.3 %).

6. The peculiarities of clinical manifestations of cholecystitis and the socio-economic conditions of the Far North require an integrated differentiated approach in the treatment of bile disease at the stages of surgical treatment, which allows improving treatment results.

7. In the prevention of liver and bile tract diseases, the consideration of social and environmental stressors should be of great importance.

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