

MODERN ASPECTS OF DIAGNOSIS OF CHOLANGITIS (LITERATURE REVIEW)

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Abstract: according to the literature, modern data on the etiology, pathogenesis, clinic, diagnosis, treatment and prevention of acute cholangitis and biliary sepsis are analyzed in the complication of cholelithiasis. Acute purulent cholangitis and biliary sepsis are different manifestations of the infectious and inflammatory process that occurs locally and systemically. Postoperative lethality ranges from 13 to 60%. Many issues of pathogenesis, treatment and prevention of these pathological processes are not completely resolved and need further study.

Keywords: gallstone disease, choledocholithiasis, acute cholangitis, mortality.

СОВРЕМЕННЫЕ АСПЕКТЫ ДИАГНОСТИКИ ХОЛАНГИТА (ОБЗОР ЛИТЕРАТУРЫ)

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Аннотация: согласно литературным данным, современные данные об этиологии, патогенезе, клинике, диагностике, лечении и профилактике острого холангита и билиарного сепсиса анализируются как осложнение желчнокаменной болезни. Острый гнойный холангит и билиарный сепсис

являются различными проявлениями инфекционно-воспалительного процесса, который протекает локально и системно. Послеоперационная летальность составляет от 13 до 60%. Многие вопросы патогенеза, лечения и профилактики этих патологических процессов не полностью решены и требуют дальнейшего изучения.

Ключевые слова: *желчекаменная болезнь, холедохолитиаз, острый холангит, летальность.*

The frequency of purulent complications of inflammatory diseases of the biliary tract, despite the close attention of researchers to this problem, remains highly relevant. The inflammatory process in this localization is characterized not only by the local purulent-destructive process, but also by systemic disorders that quickly lead to severe endogenous intoxication and severe organ dysfunction. Such a condition is most often considered as a cholangitis, the severity of its morphological and clinical manifestations is very diverse [9, 20].

Mortality, according to various authors, is still high, reaching up to 30%. In the elderly, burdened with severe concomitant diseases, acute cholecystitis, complicated purulent cholangitis, represents the most difficult problem diagnosis and treatment [12, 18]. In this case, choledocholithiasis in combination with stenosis of the terminal section of choledoch causes the most severe violation of bile passage and is the most common cause of purulent cholangitis [3, 17].

Often, the cause of obstruction can also be benign stricture of the bile duct and stricture of the biliodigestive anastomosis [4, 18]. Cholangitis can act as a complication of reconstructive operations on the bile ducts, for example, when applying an anastomosis of choledochus or a common hepatic duct with a small intestine with an insufficiently wide opening or with the development of cicatricial stenosis of the anastomosis [7, 9, 23]. The cause of cholangitis can also be internal biliary fistula - in most patients with Mirizzi syndrome, cholangitis is detected [5, 19].

After analyzing the results of surgical treatment of 56 patients with chronic obstructive pulmonary disease, complicated Mirizzi syndrome, Z.B. Kurbaniyazov et al. (2011) offer a differentiated treatment approach depending on the type of this pathology and the nature of the inflammatory process of the bile duct [6, 12].

According to the ideas of other authors, the other way getting bacteria in the bile - it is their arrival is, in the portal circulation from the small intestine. Normally, these bacteria maintain a certain tone of the body's immune system due to the reaction of intestinal lymph nodes and fixed liver macrophages to them [2, 8, 18].

When the pressure is raised to 300 - 450 mm. water. art. there is cholangiogenic and cholangiolymphatic reflux, as a result of which bacteria and endotoxin from the infected bile enters the systemic circulation. Also, with cholestasis, the function of Kupffer cells is disrupted and their phagocytic activity decreases. Against this background, when the syndrome of acholia develops, the permeability of the intestinal wall increases for bacteria and endotoxin, and their concentration increases in the blood of the portal vein [7, 9, 18].

Thus, in two ways - through the biliary system and through the portal vein - endotoxin and bacteria enter the central vein of the sinusoid, from where they enter the central bloodstream. This causes the development of an immune reaction, accompanied by the release of cytokines, prostaglandins, peptides with vasoactive properties and causing a characteristic vascular and general reaction.

There is no single generally accepted classification of cholangitis to date [2, 4, 18]. However, most authors adhere to the following division of purulent cholangitis: three forms of purulent cholangitis - acute, acute recurrent and chronic [10]. Since most often the course of the disease is caused by purulent complications, they distinguish purulent cholangitis without purulent complications with septicemia and septicopyemia. The following forms of purulent cholangitis are distinguished from the degree of lesion of the liver parenchyma: with lesion of the liver parenchyma, with pericholangitis, with lesion of portal tracts, biliary cirrhosis of the liver. By the nature of inflammation, catarrhal, purulent, fibrotic, fibro-purulent, fibro-ulcerative, gangrenous cholangitis is isolated. By type of causative agent, cholangitis can be aerobic, anaerobic and mixed. According to the clinical course, the following forms of cholangitis are suggested: 1. acute cholangitis with a favorable course; 2. Acute purulent cholangitis; 3. septic form of acute cholangitis; 4. chronic cholangitis with subclinical course; 5. chronic cholangitis with septic course [2, 11].

The results of treatment of diseases complicated by the onset of purulent cholangitis primarily depend on the timely and accurate diagnosis of the nature of jaundice, the level and cause of obstruction of the bile duct [22]. So y a number of patients with purulent cholangitis initially develop severe CNS disorders, and the classical triad Charcot manifested itself in later terms of the disease. Sometimes there is no pronounced temperature reaction, no leukocytosis, and the operation is difficult cholangitis with multiple liver abscesses. There are cases when acute purulent cholangitis stimulated such diseases of the abdominal cavity organs as acute cholecystitis, acute pancreatitis, perforated ulcer of the stomach and duodenum. The diagnosis does not cause doubt only in those cases when its clinical manifestations are objectively confirmed by complete obstruction of the bile ducts [5, 13, 20].

Along with the characteristic clinical picture of the disease, an important role in the diagnosis of acute cholangitis belongs to a number of biochemical parameters of blood serum (total bilirubin and its fractions, ALAT, ASAT, alkaline phosphatase, gamma-glutamyltranspeptidase, etc.) [3, 15]. In the laboratory study of peripheral blood, pronounced leukocytosis with a leftward shift, thrombocytopenia, a high degree of ESR increase, anemia increases. Bilirubin in acute purulent cholangitis is usually in the range of 85 - 120 $\mu\text{mol} / \text{L}$, but occasionally there is hyperbilirubinemia up to 300 $\mu\text{mol} / \text{L}$, which usually indicates the severity of purulent cholangitis. There is always an increase in the activity of alkaline phosphatase [17].

The frequency of bacteremia is 40 - 60%. With a positive result of blood culture, the isolated flora coincides with strains obtained from bile. Bacteriology occurs in 85 - 100% of cases, with more often (60-70%) in the association of microorganisms, less often (15-25%) in the form of monoculture [2, 12, 16].

The introduction of fistuloholangioscopy (FHS) into surgical practice significantly expanded the understanding of the incidence, severity and prevalence of cholangitis.

FHS allowed to diagnose cholangitis in 74.1%. FHS has shown that it is the most effective way to determine the nature and extent of the pathological process in the biliary tract with cholangitis. This technique in patients with cholangitis in addition to clarifying the cause of mechanical jaundice allows you to visually assess the contents of choledoch and take the material for examination. In addition, its carrying out is very effective means of sanitizing the bile ducts by washing them with solutions containing antibiotics, which provided a mechanical removal of pus and the delivery of antibiotics to the focus of inflammation. [8, 10, 19].

Instrumental methods of investigation (ultrasound, endoscopic ultrasound, ERCPG, computed tomography, magnetic resonance cholangiography, intraoperative cholangiography, etc.) are the final stage in the diagnosis of pathological changes in hepaticocoledoch and allow the detection of concretions of the common bile duct with sufficient accuracy [10, 20]. Ultrasound examination in patients with cholangitis is aimed at identifying signs of bile hypertension, determining the level of the cause of obstruction of the billiard tree, diagnosis of concomitant pathology of the liver and gallbladder. Informativeness of ultrasound in identifying the form of cholecystitis, cholecystolithiasis and signs of bile hypertension is close to 100%. The ability of the method to determine the level and cause of obstruction of the biliary tract is from 22 to 88% [2, 21]. Ultrasound as non-invasive, fast-performing and easily tolerated by patients is suggested to be used in all patients with suspected purulent cholangitis. Signs of cholangitis in ultrasound - a thickening of the wall of choledoch, the presence in its lumen of a parietal sediment and echopositive inclusions ranging in size from 2 to 5 mm without acoustic shade (flakes of pus, fibrin films, putty) are determined in no more than 18% of cases. Together with the stress tests, it is possible to determine the functional state of the hepatic tissue and its reserve capabilities in combination with the test samples [22].

Computer tomography is a highly informative noninvasive method for diagnosing liver, bile duct and pancreas pathology. With its help, you can determine the biliary hypertension and clarify the cause of obstruction of the biliary tract. Unexpanded intrahepatic bile ducts with computed tomography on "native scans" are not normally visible. However, CT has a number of drawbacks. These include: the need for X-ray exposure, invasiveness due to the need for intravenous or intra-arterial administration of contrast agents; limited use in patients with allergic reactions to iodine (use of iodine-containing contrast agents); the presence of a "step" of the tomograph makes the procedure dependent on the choice of the program; the impossibility of characterizing the motion and pulsation of structures. This method is of special value in the detection of cholangiogenic liver abscesses [18]. Available single reports on the use of spiral computed tomography in the diagnosis of extrahepatic biliary tracts special advantages of this method over the conventional CT technique have not been revealed [23].

Magnetic resonance imaging (MRI) is a new technique for visualization of bile and pancreatic ducts. MRI provides a high degree of reliability in the diagnosis of surgical diseases of the liver, biliary tract and pancreas, it makes it possible to determine the level of the extent, the cause of obstruction, and to assess the nature of the contents of the intrahepatic bile ducts (sludge wall mass, flakes). The possibility

of constructing a three-dimensional image of the bile ducts and ascertaining their relationship to the portal system, makes it possible to determine the safe access and the type of decompression of the biliary tract [4, 20]. The informativeness of this method is comparable to computed tomography, but it has several advantages over it: noninvasiveness, harmlessness (no radiation load), three-dimensional image acquisition, natural contrast from moving blood, lack of artifacts from bone tissue, high soft tissue differentiation, possibility performance of MP-spectroscopy for in vivo intravital study of tissue metabolism. With choledocholithiasis, as the main cause of purulent cholangitis, the sensitivity and specificity of MRI is 81-98%. Its use is limited by the impossibility, the reliable detection of calcite stones, the relatively high cost of equipment, the impossibility of examining patients with artificial pacemakers, large metal implants [20].

The leading role in establishing the flow of bile causes disturbances in patients with obstructive jaundice and cholangitis attached methods direct contrast biliary tract, such as percutaneous transhepatic cholangiography, endoscopic retrograde cholangiography-pancreatic [11]. Endoscopic retrograde pancreatocholangiography (ERPHG) was most prevalent in choledocholithiasis, which is primarily due to the possibility of completing the study with therapeutic manipulations of endoscopic papillosphincterotomy, nasobiliary drainage, and biliary endoprosthetics. With a visual examination of the duodenal mucosa and the falcon nipple, a characteristic feature of acute cholangitis is an increase in the size of the large duodenal nipple, hyperemia of the mouth, a thickening of the villi surrounding it, and pus or turbid bile with an admixture of fibrin and detritus entering the duodenum. Various water-soluble X-ray contrast preparations are used for ERPHG: verographene, urographine, angiography, trazograph, etc. [14]. The main indicators for conducting ERPHG are the presence of pancreatic and bile duct diseases and their complications in the patient. X-ray signs of acute cholangitis have been identified. These include: erasure, blurring and the usurpation of the contours of the bile ducts and filling defects. The most convincing are when using highly concentrated solutions of contrast media. With the help of ERPHG it is possible to establish the etiology of purulent cholangitis and the level of the choledoch block. The informative value of ERPHG in diagnosing "benign" diseases of extrahepatic biliary tracts is from 80 to 95% [21].

However, the use of ERPHG with purulent cholangitis is dangerous if, before or after it, the decompression of the biliary tract is not performed (endoscopic papillosphincterotomy or nasobiliary drainage). Without decompression after ERCP, the inflammatory process in the biliary tract becomes aggravated, becoming unmanageable. In addition, each ERPHG, in order to prevent ascending cholangitis and sepsis, should be accompanied by antibiotic prophylaxis, with most authors giving antibiotics to the fluoroquinolone groups [8].

Percutaneous transhepatic cholangiography (CGI) was first proposed in 1952 by Carter R.F. and Saypol G.M. by percutaneous transhepatic puncture of the bile ducts. There are different opinions about the expediency of its appointment. Some authors believe that this method is difficult to perform in patients with sepsis and even contraindicated, since an increase in pressure in the bile ducts contributes to the dissemination of bacteria, the development of septicemia, and sometimes provokes a

septic shock; others associate a successful application with the possibility of achieving maximum aspiration of the purulent contents of the bile ducts, before and after contrasting, performing decompression of the biliary tract [2, 8].

Currently, the unsatisfactory results of surgical treatment of purulent cholangitis are due to the complexity of determining therapeutic tactics, which includes two main factors: on the one hand, progressive liver failure and endotoxemia require immediate surgery to decompress the biliary tract, on the other, pronounced multiple organ failure significantly increases the degree of operational risk when performing radical interventions, which makes it necessary to conduct an intensive correction of functional and metabolic disorders and targeted antibiotic therapy [4].

Thus, summarizing the foregoing, the specific tasks of treating acute cholangitis and biliary sepsis are: emergency minimally invasive decompression of the bile ducts, which eliminates the source of infection, adequate antibacterial therapy, hemodynamic and respiratory support, immunocorrection and nutritional support.

References / Список литературы

1. *Alastal Y. et al.* Acute cholangitis following biliary obstruction after duodenal OTSC placement in a case of large chronic duodenocutaneous fistula //Case reports in gastrointestinal medicine, 2015. T. 2015.
2. *Davlatov S.S. et al.* Plasmapheresis in the treatment of cholemic endotoxemia // Akademicheskij jurnal Zapadnoy Sibiri, 2013. T. 9. № 1. C. 30-31.
3. *Davlatov S.S. et al.* A New method of detoxification plasma by plasmapheresis in the treatment of endotoxemia with purulent cholangitis // Akademicheskij jurnal Zapadnoy Sibiri, 2013. T. 9. № 2. C. 19-20.
4. *Davlatov S.S., Kasimov S.Z.* Extracorporeal technologies in the treatment of cholemic intoxication in patients with suppurative cholangitis // The First European Conference on Biology and Medical Sciences, 2014. C. 175-179.
5. *Davlatov S.S.* Noviy metod detoksikatsii organizma v lechenii bol'nix gnoynim xolangitom // Jurnal MediAl', 2013. № 3 (8).
6. *Davlatov S.S.* Noviy metod detoksikatsii plazmi putem plazmaferaza v lechenii xolemicheskogo endotoksikoza //Byulleten' Severnogo Gosudarstvennogo meditsinskogo universiteta, 2013. T. 1. S. 6-7.
7. *Davlatov S.S.* Differentsirovanniy podxod k lecheniyu bol'nix s xolangitom //SHpital'na xirurgiya. Jurnal imeni LYa Koval'chuka, 2015. T. 68. № 4.
8. *Kasimov S. et al.* Haemosorption In Complex Management Of Hepatargia //The International Journal of Artificial Organs., 2013. T. 36. № 8. C. 548.
9. *Kasymov S.Z. et al.* Hemoperfusion as a method of homeostasis protection in multiple organ failure syndrome // ББК 51.1+ 74.58 К 22, 2013. C. 85.
10. *Kasimov S.Z. et al.* Efficacy of modified hemosorbents user for treatment of patients with multi-organ insufficiency // Akademicheskij jurnal Zapadnoy Sibiri, 2013. T. 9. № 3. C. 44-46.
11. *Kurbaniyazov Z.B., Davlatov S.S.* Sposob detoksikatsii organizma pri xolemicheskom endotoksikoze // UZ Ofitsial'niy byulleten', 2011. T. 5. S. 10-11.

12. *Kurbaniyazov Z.B. i dr.* Xirurgicheskiy podxod k lecheniyu bol'nix s posttravmaticheskimi rubtsovimi strikturami magistral'nix jelchnix protokov //Akademicheskij jurnal Zapadnoy Sibiri, 2013. T. 9. № 2. S. 14.
13. *Kurbaniyazov Z.B. i dr.* Эffektivnost' ispol'zovaniya miniinvazivnix metodov xirurgicheskogo lecheniya bol'nix s ostrim destruktivnim xoletsistitom //Akademicheskij jurnal Zapadnoy Sibiri, 2013. T. 9. № 4. S. 56-57.
14. *Kurbaniyazov Z.B. i dr.* Xirurgicheskoe lechenie bol'nix s sindromom Mirizzi //Vrach-aspirant, 2012. T. 51. № 2.1. S. 135-138.
15. *Kurbaniyazov Z. et al.* Improvement of surgical treatment of intraoperative injuries of magistral bile ducts //Medical and Health Science Journal, 2012. T. 10. C. 41-47.
16. *Mukhitdinovich S.A., Tashtemirovna R.D.* Comprehensive approach to the problem of rehabilitation of infants submitted sepsis // Voprosi nauki i obrazovaniya, 2017. № 10 (11).
17. *Nazyrov F.G. et al.* Povrezhdeniya magistralnykh zhelchnykh protokov (chastota prichiny povrezhdeniy, klassifikatsiya, diagnostika i lecheniye) [Damage to the main bile ducts (frequency of cause of damage, classification, diagnosis and treatment)] // Khirurgiya Uzbekistana–Surgery of Uzbekistan (4). 2011. C. 66-73.
18. *Rakhmanov K.E. et al.* The treatment of patients with major bile duct injuries // Akademicheskij jurnal Zapadnoy Sibiri, 2013. T. 9. № 1. C. 33-34.
19. *Saidmuradov K.B. i dr.* Xirurgicheskoe lechenie bol'nix s posttravmaticheskimi rubtsovimi strikturami magistral'nix jelchnix protokov //Akademicheskij jurnal Zapadnoy Sibiri, 2013. T. 9. № 1. S. 27-28.
20. *Saydullayev Z.Y. et al.* Evaluating the effectiveness of minimally invasive surgical treatment of patients with acute destructive cholecystitis // The First European Conference on Biology and Medical Sciences, 2014. C. 101-107.
21. *Shamsiyev A.M., Khusinova S.A.* The Influence of Environmental Factors on Human Health in Uzbekistan //The Socio-Economic Causes and Consequences of Desertification in Central Asia. Springer, Dordrecht, 2008. C. 249-252.
22. *Shamsiyev A., Davlatov S.* A differentiated approach to the treatment of patients with acute cholangitis //International Journal of Medical and Health Research, 2017. C. 80-83.