


# БИОМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ ЖУРНАЛ БИОМЕДИЦИНЫ И ПРАКТИКИ JOURNAL OF BIOMEDICINE AND PRACTICE

UDC 616.36-002.951.21-089(045)

**RAKHMANOV Qosim Erdanovich**  
**KURBANIAZOV Zafar Babajanovich**  
**ABDURAKHMANOV Diyor Shukurullaevich**  
Samarkand State Medical Institute, Uzbekistan.  
**DAVLATOV Salim Sulaymonovich**  
Bukhara State Medical Institute, Uzbekistan

## SURGICAL TACTICS IN PATIENTS WITH LIVER ECHINOCOCCOSIS

**For citation:** Rakhmanov Qosim, Kurbaniazov Zafar, Abdurakhmanov Diyor, Davlatov Salim. SURGICAL TACTICS IN PATIENTS WITH LIVER ECHINOCOCCOSIS Journal of Biomedicine and Practice. 2021, vol. 6, issue 4, pp. 130-136

 <http://dx.doi.org/10.26739/2181-9300-2021-4-19>

### ANNOTATION

Based on the analysis of the case histories of 327 patients with liver echinococcosis (LE), surgical treatment tactics were developed taking into account optimal access depending on the location of the cyst; indications for biliary tract decompression, including using endoscopic techniques, were determined.

**Key words:** echinococcosis, echinococcectomy, ERPH, papillosphincterotomy.

**РАХМАНОВ Косим Эрданович**  
**КУРБАНИЯЗОВ Зафар Бабаджанович**  
**АБДУРАХМАНОВ Диёр Шукуруллаевич**  
Самаркандский Государственный медицинский институт, Узбекистан.  
**ДАВЛАТОВ Салим Сулаймонович**  
Бухарский Государственный медицинский институт. Бухара, Узбекистан

## ХИРУРГИЧЕСКАЯ ТАКТИКА У БОЛЬНЫХ ЭХИНОКОККОЗОМ ПЕЧЕНИ

### АННОТАЦИЯ

На основании анализа историй болезни 327 пациентов с эхинококкозом печени (ЭП) разработана тактика хирургического лечения с учетом оптимального доступа в зависимости от локализации кисты; определены показания для декомпрессии желчных путей, в том числе и с применением эндоскопической техники.

**Ключевые слова:** эхинококкоз, эхинококкэктомия, ЭРПХГ, папиллосфинктеротомия.

**РАХМАНОВ Косим Ерданович**  
**КУРБАНИЯЗОВ Зафар Бабажанович**  
**АБДУРАХМАНОВ Диёр Шукуруллаевич**  
Самарқанд Давлат тиббиёт институти. Ўзбекистон  
**ДАВЛАТОВ Салим Сулаймонович**  
Бухоро Давлат тиббиёт институти. Ўзбекистон

## **ЖИГАР ЭХИНОКОККОЗИ БИЛАН КАСАЛЛАНГАН БЕМОРЛАРДА ЖАРРОХЛИК ТАКТИКАСИ**

### **АННОТАЦИЯ**

Жигар эхинококкози (ЖЭ) билан касалланган 327 беморда касаллик анамнезини таҳлил қилиш асосида кистанинг локализациясига боғлиқликка оптимал кириш имкониятини ҳисобга олган ҳолда жаррохлик даволаш тактикаси ишлаб чиқилди; эндоскопик усуллардан фойдаланган ҳолда, ўт йўллари декомпрессиялаш кўрсаткичлари аниқланди.

**Калит сўзлар:** эхинококкоз, эхинококектомия, ЭРПХГ, папиллосфинктеротомия.

**Introduction.** Echinococcosis is a dangerous natural focal parasitic disease of domestic animals and humans, occurring sporadically and endemically. Areas that are endemic for echinococcosis include Mountainous areas, echinococcosis is included in the who list of diseases requiring radical eradication. The problem of echinococcosis remains relevant, since the disease is quite common, and treatment issues are becoming debatable. Among the lesions of various organs and tissues with echinococcosis, the frequency of liver damage is 44-84 % [1,2,3,4,5].

Prevalence of echinococcosis in about all of them the incidence of echinococcosis in the region is 1 per 10,000 inhabitants, in the Republic of Uzbekistan 0.39 per 1000 inhabitants (2017). the Incidence of echinococcosis in the region is 4 times higher than the incidence in the Republic of Uzbekistan [7,8,9,10]. The problem of surgical treatment of liver echinococcosis still remains relevant in many regions of Uzbekistan [8,9,10,11,12,13,14]. 483 patients with echinococcosis were operated on in the 1st clinic of SamSMI from 2005 to 2018, 327 of them were diagnosed with LE. the difficulties of effective surgical treatment are due to the lack of a generally recognized optimal treatment option, depending on the location of the cyst, the condition of the cyst. fibrotic capsule and the lack of a single view on the methods of treatment of the fibrotic bed after removal of the cyst [16,17,18,19,20,21,22]. Improvement of modern diagnostic methods and introduction of new high-tech methods of surgical treatment did not give the expected results [24,25,26,27]. There is no consensus among surgeons about the scope of operations for liver echinococcosis complicated by bile duct damage. Postoperative complications in the form of retention of residual cavities, their suppuration, development of cholangitis, prolonged bile flow, often with the formation of an external biliary fistula, are still frequent and relapse of the disease [26,28,30]. The main reason for the development of these complications is inadequate treatment of the fibrous cyst capsule and its capitonage. to increase the effectiveness of these key stages of surgery, pre- and intraoperative detection of bile ducts opening into the cyst cavity is very important [28,29,30,31].

**The aim of the study** was to determine a method for improving the immediate results of surgical treatment of liver echinococcosis, and to develop the most rational tactics of surgical treatment.

**Materials and methods.** The work is based on the analysis of medical records of 327 patients. The main group included 152 patients. There are 85 women and 67 men among them. Damage to the right lobe was detected in 102 patients, the left lobe in 14, damage to both lobes in 11 patients, and 24 patients had combined liver and other organ damage. Indications for surgery and the choice of optimal access for them were made considering the location of the cyst and the nature of complications. The choice of access depended on the topical location of the cyst. When cysts were localized in the second and third segments, echinococcectomy was performed from the upper end of the spine. – median access [28], if the first, fourth, fifth, and sixth segments were affected – from the subcostal segment [24], if they were located in the seventh and eighth segments, thoracotomy with

diaphragmotomy was performed [23]. one patient had a combined access (thoracotomy, laparotomy), considering echinococcal lesion of the left lung and right lobe of the liver. Giant cysts, multiple cysts of both lobes of the liver in 9 cases required transverse laparotomy or total median laparotomy. laparoscopic surgery was performed in five patients. One patient underwent videothoracoscopic surgery. Operation for echinococcosis of the right lung and right lobe of the liver. The diagnostic algorithm included clinical and laboratory studies, ultrasound of the liver, computed tomography, chest X-ray, ERPHG. Several patients (10) underwent MRI of the liver. This set of examinations made it possible to obtain an accurate segmental localization of cysts, their size, number and signs of a complicated course of the disease, such as obstructive jaundice, suppuration of the cyst, the connection of the cyst with the biliary tract, and other breakthrough of the cyst into the biliary system. In difficult diagnostic cases, angiographic examination was carried out in 3 patients for the purpose of differential diagnosis of echinococcosis and liver cancer. Only the information received in full made it possible to resolve the tactical issues of the upcoming surgical intervention. The comparison group consisted of 175 patients. Of these, 103 are women, 72 are men. In this group, the right lobe was affected in 126 patients, the left lobe in 22, both lobes in 12 patients, and combined liver and other organ damage in 15 cases. The main operative approach in this group of patients was the right subcostal one, and ERCP was performed for the purpose of follow-up examination. only in the presence of jaundice.

**Research results.** We believe that determining the most rational surgical approach and timely detection of cystobiliary fistulas (CBF) is a key factor in reducing the likelihood of postoperative complications. One of the most severe complications of EP is the rupture of cyst contents into the bile ducts, which occurs in 6-63% of cases [2,8,9,10]. According to our study, this complication occurred in 73 people, which was 22.3%. The clinical picture of getting the contents of an echinococcal cyst into the bile ducts is due to the diameter of the CBS and its level a breakthrough in the biliary tract. Depending on the severity of the clinical picture, we distinguish three degrees of manifestation of CBF. The first degree was diagnosed in 22 patients (6.7%) with severe obstructive jaundice and cholangitis resulting from the breakthrough of the cyst contents into the large lobar ducts of the liver. All patients in this group showed signs of liver failure with severe intoxication, pain, chills and hyperthermia. The second degree was detected in 23 patients (7%). in this group of patients, symptoms of inflammation prevailed due to the formation of CBF with a segmental duct, suppuration of an echinococcal cyst, and the development of cholangiogenic abscesses. We attributed 28 patients (8.6%) to the third degree, who did not have clinical manifestations of communication of the echinococcal cyst with the bile ducts, which was explained by the small size of the perforation hole (no more than 1.5 mm) and the integrity of the chitinous membranes was preserved. The main group included 29 patients with varying degrees of cyst breakthrough manifestations (8 patients with severe mechanical jaundice and cholangitis, 11 patients with inflammatory manifestations of CBF, and 10 patients with a mild clinical course of this complication). The diagnostic algorithm in patients of this group included clinical and laboratory, ultrasound, x-ray, and endoscopic examination methods. Special attention was paid to ultrasound and computed tomography, which specified the location, size, nature of the cyst contents, its relation to the surrounding organs, large vessels and liver ducts. ERPHG was used in all patients, with 25 patients diagnosed with CBS before surgery. in patients of the main group, the tactics and scope of treatment measures depended on the degree of damage to the bile ducts. for the treatment of patients with the first degree of communication with the bile ducts we apply a three-stage tactic of conducting therapeutic measures. The first (preoperative) stage includes methods aimed at decompression of the biliary tract and treatment of acute cholangitis. All patients underwent endoscopic papillosphincterotomy (EPST) after EPCG, and 7 of them managed to extract fragments of the chitinous membrane from the common bile duct. six patients underwent nasobiliary drainage of the biliary tract with rehabilitation of the bile ducts and administration of antibiotics after EPST and removal of chitinous membranes. The second stage of treatment is open surgery with the definition of the most rational access, ensuring optimal treatment of the cyst cavity. Argon-enhanced electrocoagulation was used at the main stages of the operation (thoraco-phrenolaparotomy, laparotomy, cystotomy, excision of the fibrous capsule, hemo- and cholestasis). all 22 patients

underwent echinococcectomy. For antiparasitic and antibacterial treatment of the cyst cavity, 80-100% glycerin or 3% hydrogen peroxide solution was used. Our experience, as well as literature data, show that glycerol or a solution of hydrogen peroxide have a rapid destructive effect not only on protoscolexes, but also on acephalocysts of hydatid Echinococcus, while the shells of live echinococcal cysts are impermeable to these substances, which eliminates their toxic effect on the body. The fistula opening was sutured from the side of the fibrous capsule with atraumatic suture material. In order to maximize the reduction of the residual cavity, the fibrous capsule was excised along the border with unchanged liver tissue, followed by its capitonage or suturing with turning the cyst wall into its cavity. Capitonage of the residual cavity was carried out mainly by vertical pouch seams, which allowed evenly bring together the walls of the fibrous capsule, without interfering with the separation of exudate. Sutures were applied in several rows, along the liver ducts along the wall of the fibrous capsule to the bottom and on the opposite side in the opposite direction until the residual cavity was closed. Open echinococcectomy was performed in 2 patients with signs of suppuration of the cyst cavity, semi-closed echinococcectomy with capitonage of the residual cavity on thin drainage was performed in 2 patients, and closed echinococcectomy with drainage of the abdominal cavity was performed in the remaining patients. In 8 patients, echinococcectomy was supplemented with biliary drainage. of the Central nervous system, considering the pronounced phenomena of cholangitis. drainage of the choledochus according to Vishnevsky was performed in 4 patients, according to Ker – in 2 patients, separate drainage of the right and left hepatic ducts was performed in 2 patients. the third stage of treatment was drug correction in the postoperative period, aimed at correcting hyperbilirubinemia and bacterial complications. Patients with second-degree cystobiliary fistulas in the presence of cholangiogenic abscesses and suppuration of the echinococcal cyst underwent open (16) and semi-closed (7) echinococcectomy with opening and drainage of cholangiogenic cysts. abscesses (2), treatment was performed in one stage, as in patients with the third degree of manifestation of CBF. In recent years, in addition to the listed methods for diagnosing bile duct lesions in EP, the method of chromatic intraoperative visualization of cystobiliary fistulas has been used by puncturing an aqueous solution of methylene blue into the biliary tract, which allowed 5 patients to detect small (up to 1.5 mm in diameter) cystobiliary fistulas during surgery.

**Discussion.** Thus, patients with the second and third degrees of CBF underwent one-stage treatment, which included opening, rehabilitation and antiparasitic treatment of the residual cavity, removal of the bile fistula from the fibrous capsule by electrocoagulation or suturing with atraumatic suture material, and elimination of the residual cavity. With prolonged excretion of bile in the postoperative period (more than 5 days), noted in 6 patients of the main group, PST was performed, against which the excretion of bile stopped on 6-7 days. In the main group, 107 patients had uncomplicated echinococcosis, they underwent closed echinococcectomy (89), of which 5 - laparoscopic, liver resection (1) and perfect echinococcectomy (8), 14 - semi-closed echinococcectomy. Postoperative complications were registered in 27 patients (17.76%). Among the patients of the main group, 29 patients (23.01%) were hospitalized and treated with recurrent cysts. In 10 patients, rare CAP complications were diagnosed in the form of cyst breakthrough into the abdominal and pleural cavities, diaphragm necrosis, etc. (Table 1). The lethal outcome was recorded in three patients of the main group, which amounted to 1.97%. Of the 175 patients with EP in the comparison group, 64 cases of complicated course were noted (36.6%). 87 of them underwent closed echinococcectomy, 17-semi-closed and 71 patients underwent open echinococcectomy.

**Table 1**
**The nature of identified complications in patients with liver echinococcosis**

Complications	Main group		Comparison group	
	n = 152	%	n = 175	%
Breakthrough of an echinococcal cyst into the pleural cavity	2	1,3	1	0,57
Necrosis of the diaphragm	1	0,66	-	-
Cystobiliary fistulas of the first degree	8	5,3	14	8
Second-degree cystobiliary fistulas	11	7,2	12	8

Third-degree cystobiliary fistulas	10	6,6	18	10,3
Cyst breakthrough into the abdominal cavity	4	2,6	5	2,8
Exudative pleurisy	2	1,3	1	0,57
Suppuration of an echinococcal cyst	6	4	11	6,3
Breakthrough in the tracheobroncheal tree	1	2,8	-	-
Total	45	29,6	64	36,6

46 patients (26.28%) were admitted with recurrent cysts. the mortality rate in the comparison group was 4 people, which was 2.28%. In the postoperative period, EP patients developed complications (table 2).

**Table 2**

### Complications in the early postoperative period in patients of both groups with liver echinococcosis

Complications	Main group		Comparison group	
	n = 152	%	n = 175	%
Bile discharge	6	3,95	16	9,14
Residual cavity	9	5,92	17	9,71
Subhepatic abscess	1	0,66	3	1,72
Intraoperative anaphylactic reaction	1	0,66	-	-
Hepatopleural and peritonopleural fistulas	1	0,66	-	-
Pleural empyema	2	1,32	3	1,72
Postoperative wound suppuration	7	4,6	10	5,71
Total	27	17,76	49	28

The analysis showed that the development of complications in the form of postoperative residual cavities was associated with prolonged bile leakage, primarily with insufficient surgical intervention, ineffective capitization, and complete revision of the cyst cavity. liq. Improvements in diagnostic methods and surgical tactics have made it possible to reduce the number of complications in the form of postoperative residual cavities by 10.24%.

**Conclusion.** Thus, the problem of preventing the development of complications after echinococectomy can be solved by making a complete preoperative diagnosis, which includes a complete clinical, laboratory and instrumental examination. Choosing the most sensible surgical method for each patient will allow you to perform a complete visual inspection, determine the configuration of the cyst, its relationship to the canals and eliminate them. Reliable capitulation of the residual cavity using vertical sutures and decompression using endoscopic papillosphincterotomy in the preoperative or postoperative period allow patients to achieve complete recovery.

### Literature

1. Rizaev Zh. A., Khazratov AI Carcinogenic effect of 1, 2-dimethylhydrazine on the body as a whole // Biology. - 2020. - No. 1. - P. 116.
2. Rizaev, Zh.A., & Nazarova, N. Sh. (2020). The state of local immunity of the oral cavity in chronic generalized periodontitis. Bulletin of Science and Education, (14-4 (92)).
3. Alimdjaniyovich, RJ, & Isamiddinovich, KA (2020). Cytostructural changes in the oral mucosa in colon cancer. Journal of Biomedicine and Practice, 6 (5).
4. Rizaev J., Usmanbekova G., Nurmamatova K. (2021). Some issues of long-term planning of the activities of nursing staff of the dental service of the Republic of Uzbekistan. Annals of the Romanian Society of Cell Biology, 308-314.
5. Kurbaniyazov, Z., Akbarov, M., Nishanov, M., & Rahmanov, K. (2012). Improvement of surgical treatment of intraoperative injuries of magistral bile ducts. Medical Health and Science Journal, 10 (1), 41-46.

6. Davlatov, SS, Kasymov, SZ, Kurbaniyazov, ZB, Rakhmanov, KE, & Ismailov, AO (2013). Plasmapheresis in the treatment of cholemic endotoxemia. Academic Journal of Western Siberia, 9 (1), 30-31.
7. Shamsiyev, A., Rakhmanov, K., Shamsiyev, J., & Kurbaniyazov, Z. (2016). The role of chemotherapy in prophylaxis of the liver echinococcosis recurrence. European science review, (5-6), 143-144.
8. Kurbaniyazov ZB et al. Surgical treatment of patients with Mirizzi syndrome // Post-graduate doctor. - 2012. - T. 51. - No. 2.1. - S. 135-138.
9. Nazyrov, F.G., Shamsiev, A.M., Eshonkhodzhaev, O.D., Rakhmanov, K.E., & Davlatov, S.S. (2018). Ways to improve the results of surgical treatment of liver echinococcosis. Neonatologist, surgery and perinatal medicine, (8, No. 3), 39-43.
10. Davlatov S.S., Zhuraeva F.F., Abdurakhmanov, D. Sh., Yusupalieva K. B. K. Efficiency of minimally invasive methods of surgical treatment of patients with acute destructive cholecystitis // Academy. - 2017. - No. 7 (22).
11. Erdanovich, R.K., Sulaimonovich, D.S., and Chorievich, M.M. (2020). Modern methods of surgical treatment of varicocele (literature review). bulletin of science and education, (23-2 (101)).
12. Rakhmanov, K.E., & Davlatov, S.S. (2020). Diagnostics and treatment of Mirizzi syndrome. issues of science and education, (13 (97)).
13. Rakhmanov, K.E., Davlatov, S.S., Sherbekov, U.A., & Saidullaev, Z. Ya., Abdurakhmanov, D. Sh. (2020). Causes and ways of preventing early biliary complications after cholecystectomy. bulletin of science and education, (10-4 (88)).
14. Abdurakhmanov D. Sh., Olimdzhonzoda H. L. Evolution of methods of diagnostics and surgical treatment of liver echinococcosis // achievements of science and education. - 2020. - No. 16 (70).
15. Abdurakhmanov D. Sh., Khaidarovoy L. O. (2020) Algorithm for the management of patients with liver echinococcosis // Problems of Science and Education. - S. 92.
16. Zainiev, A.F., Abdurakhmonov, D. Sh., Abrollov, Sh.N., & Kurbaniyazova, A.Z. (2020). Tactics and surgical treatment of nodular goiter in residents living in an iodine-deficient region. Achievements in science and education, (1 (55)).
17. Abdurakhmanov, D. Sh., & Khaidarova, LO Quality of life of patients who underwent echinococcectomy from the liver. Science and education issues, 81.
18. Gozibekov, Zh.I., Zainiev, A.F., & Tilavova, Yu.M. K. (2019). Results of surgical treatment of patients with nodular goiter. Science and education issues, (13 (60)).
19. Rizaev, Zh.A., Khasanova, L.E., & Fattakhov, R.A., Abdurakhmanov, D. Sh. (2020). The impact of burnout syndrome on hygiene habits for oral care.
20. Rizaev J.A., Rizaev E.A., Akhmadaliev N.N., Abdurakhmanov, D. Sh. (2020). Modern perspective on the problem: a new approach to the treatment of Covid-19 Indian Journal of Forensic Medicine and Toxicology, 14 (4).
21. Rizaev, Ya.A., Kuliev, O.A. (2018). Risk factors for anemia in children and its prognosis. Periodical journal of scientific works 2018, 5, 62.
22. Kurbaniyazov, Z.B., Rakhmatova, L.T., Zainiev, A.F., Rakhmanov, K.E., Saidmuradov, K. B., Davlatov, S. S., & Abdurakhmanov, D. Sh. (2013). Surgical approach to the treatment of patients with "fresh" injuries of the main bile ducts. Academic Journal of Western Siberia, 9 (2), 14-15.
23. Davlatov S.S., Rakhmanov K.E., Abdurakhmanov, D. Sh. Management of patients with bile outflow after cholecystectomy // Questions of Science and Education. - 2020. - No. 13 (97).
24. Rakhmanov, K.E., Kurbaniyazov, Z.B., Davlatov, S.S., Saidmuradov, K.B., & Zainiev, A.F., Abdurakhmanov, D. Sh. (2013). Treatment of "fresh" injuries of the main biliary tract.
25. Rahmanov Kosim DS, Laylo R. Improvement of surgical treatment of intraoperative injuries of magistral bile duct // The 17th International medical congress of students and young scientists. Ternopol. - 2013. - S. 22-24.

26. Abdurakhmanov, D. Sh., & Olimdzhonzoda, H. L. (2020). Evolution of diagnostic methods and surgical treatment of liver echinococcosis. achievements of science and education, (16 (70)).
27. Davlatov S.S., Rakhmanov K.E., Abdurakhmanov, D. Sh. Tactics of managing patients with bile leakage after cholecystectomy // Problems of Science and Education. - 2020. - No. 13 (97).
28. Rahmanov K., Davlatov S., Rakhmatova L. Improvement of surgical treatment of intraoperative injuries of magistral bile duct // The 17th International medical congress of students and young scientists. Ternopol. - 2013.- S. 22-24.
29. Kurbaniyazov, Z.B., Rakhmatova, L.T., Zainiev, A.F., Rakhmanov, K.E., Saidmuradov, K. B., Davlatov, S. S., & Abdurakhmanov, D. Sh. (2013). Surgical approach to the treatment of patients with "fresh" injuries of the main bile ducts. Academic Journal of Western Siberia, 9 (2), 14-15.
30. Rizaev J.A., Rizaev E.A., Akhmadaliev N.N., Abdurakhmanov, D. Sh. (2020). Modern perspective on the problem: a new approach to the treatment of Covid-19 Indian Journal of Forensic Medicine and Toxicology, 14 (4).
31. Abdurakhmanov, D. Sh., & Olimdzhonzoda, H. L. (2020). Evolution of diagnostic methods and surgical treatment of liver echinococcosis. achievements of science and education, (16 (70)).