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Research Article

# IMPROVING THE METHODS OF TREATMENT AND ELIMINATION OF THE RESIDUAL CAVITY AFTER ECHINOCOCCECTOMY IN RECURRENT LIVER ECHINOCOCCOSIS

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## ABSTRACT

Various methods of surgical treatment of recurrent liver EC are described in domestic and foreign literature. The choice of surgical approach, the nature and volume of the operation, the method of treating the cyst, the need for drainage or elimination of the residual cavity are still subjects of discussion. In this regard, this chapter is devoted to our developments on key issues that affect the results of surgical treatment, complications and its nature in the immediate postoperative period, quality of life, rehabilitation and work capacity in the long term.

## KEYWORDS

Echinococcosis, intraoperative antiparasitic, protoscolexes , National Cancer Institute (NCIC-CTC).

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## INTRODUCTION

According to various authors, a feature of echinococcosis as a parasitic disease is the possibility of repeated recurrence, including after surgical treatment, while the disease is increasingly being recorded outside endemic foci, which is associated with an increase in the level of population migration [6]. If in the 90s of the last century, 1-1.5 thousand operations were performed annually with a mortality rate of 2.5-7% or more, then in 2000 this figure increased to 4.5 thousand per year [11]. It should be noted that 2/3 of patients operate on the background of chronic complications of echinococcosis, the most common of which are: suppuration of the cyst - 18.4-49.0%, calcification of the fibrous capsule - 4.8-18.1% and a dead maternal echinococcal cyst in the stage of early post-mortem changes - 5.6-9.9%. [3,4]. At the same time, it should be noted that the recurrence of echinococcosis after echinococcectomy is also one of the most severe complications of the disease, reaching, according to various authors, from 3 to 54%; on average 10-12% and depending both on the biological characteristics of the parasite, the nature of the complications of the disease, and on the methods and qualifications of the previously performed surgical treatment [7,8].

The analysis of literature data indicates that echinococcosis continues to be one of the most dangerous human parasitic diseases, while the main topical and defining problems remain the choice of tactics for the treatment of recurrent forms of the disease, depending on the nature of the lesion and other factors affecting the outcome of treatment, the development of new methods processing and elimination of the cavity of the fibrous capsule, postoperative rehabilitation and prevention of complications.

## MATERIALS AND METHODS

Clinical studies aimed at finding effective and safe ways to prevent infectious and inflammatory complications after echinococcectomy have led to the fact that at different times a variety of chemical, physical and biological antiparasitic agents were used to treat residual cavity after echinococcectomy of the liver.

Thus, the aim of our invention was to develop a method for antiseptic treatment of RC after EE

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from the liver, which would be simple and affordable, and also have an increased antiseptic effect and the least traumatic and hepatotoxic effect. Experimental studies of the toxic effect of the solutions used for multicomponent intraoperative antiparasitic residual cavity in echinococcectomy from the liver.

To achieve this goal, a simple and affordable method of intraoperative antiparasitic treatment of liver residual cavity after echinococcectomy using a combination of antiseptic agents known in pharmacology and approved for use by the Ministry of Health of the Republic of Uzbekistan (Patent No. IAP 2014 0498) has been developed and implemented in the practice of our clinic and State Medical Institute.

## RESULTS AND DISCUSSIONS

The method developed in our clinic is carried out as follows. Laparotomy, cyst puncture, aspiration of the contents, dissection of the fibrous capsule with an electrocoagulator, removal of the chitinous membrane are performed. The inner surface of the fibrous capsule is treated sequentially with 20% sodium chloride solution, furacillin solution heated to a temperature of 70-750 C, 96% alcohol and 5% iodine tincture, with an exposure of 2, 3, 3, 3 minutes, respectively. After that, the anterior semicircle of the fibrous capsule is excised, the edge of the fibrous capsule is electrocoagulated, and the inner surface of the fibrous capsule is electrocoagulated. A drainage tube is placed in the cavity and fixed for control.

When using these agents in the proposed combination, a pronounced clinical effect was obtained, which is explained by the synergism of their action, and the reduction in the time of their exposure to a safe one in terms of toxicity causes the absence of a damaging effect on the liver tissue. The separate use of the components of the agent for the treatment of residual cavity after echinococcectomy of the liver is ineffective.

For the purpose of a comparative analysis of the effectiveness of the ongoing antiparasitic treatment of EC, intraoperative express diagnostics was performed (UZ 05334). After treatment with residual cavity, echinococcal fluid in an amount of 5-10 ml is placed in a nutrient medium, for example, in glycocholate (this can be distilled water, tea soda) and incubated in a thermostat at a temperature of 37°C for 10 minutes.

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Then a drop of a suspension of incubated protoscolexes is placed on a glass slide and subjected to microscopy at low magnification of the microscope. The indicators of the death of scolexes were the lack of motor activity and the release of the contents of the scolexes to the outside after microscopy of the centrifugate of echinococcal fluid in warm saline at 37-39°C. Before antiparasitic treatment, scolexes are mobile, have an oval shape, two rows of hooks are determined in the parenchyma. After the treatment in the fluid released from the cavity of the cyst, destroyed shells of scolexes were revealed, the presence of a structure less mass.

To assess toxicity, the general criteria proposed by the National Cancer Institute (NCIC-CTC) were used, which, in general, consist of both instrumental diagnostics (ultrasound) and laboratory - taking blood for markers of liver damage.

As examples, we present the following clinical observation:

Case #1.

Patient M., 30 years old, case history No. 8837/438.

Admitted to the 3rd surgical department of the clinic ASMI April 26, 2009 with a diagnosis of recurrent echinococcosis of the right lobe of the liver.

Complaints at admission to the presence of pain and a feeling of heaviness in the right hypochondrium, periodic nausea and general weakness.

He considers himself ill since January 2009, when he began to notice general weakness and the above complaints joined.

From the anamnesis it turned out that the patient was operated on for echinococcosis of the liver 3 years ago.

The general condition of the patient upon admission is severe, conscious, answers questions adequately. Skin and visible mucous membranes of normal color. The chest is conical, without deformities. Percussion on symmetrical areas of pulmonary sound. Auscultation on the right shows vesicular breathing on both sides. Respiratory rate 16–18/min. Heart: muffled, rhythmic tones, BP 110/70 mm Hg. Art. Pulse 88bpm. The belly of the correct form, evenly participates in the act of breathing. There is an old postoperative scar in the area of the right

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hypochondrium. On palpation, there is pain in the right hypochondrium.

Complete blood count: hemoglobin-106 g/l; erythrocytes - 3.40x1012; CPU-0.9; leukocytes - 7.3x109; Eosinophils-4; ESR-15 mm/h.

Biochemical analysis: total bilirubin-3.4; conjugated bilirubin; unconjugated bilirubin.-3.4; total protein-63.2; calcium-1.09; amylase-13.3.

Urinalysis: color-light yellow; slightly cloudy; trace protein; epithelium-0-0-1; leukocytes-6-4-5.

X-ray of the chest: the borders of the lungs are clean, the sinuses are free, the right dome of the diaphragm is tuberous, elevated. The left dome of the diaphragm is clear, movable, the heart and aorta are within normal limits. The heart and aorta are unchanged.

ECG: Sinus rhythm is correct. Normal position of the electrical axis of the heart.

Ultrasound: Liver contours are even and clear. In the right lobe, on the projections of segments VII, VIII, a cavity formation 90x67x59 mm in size is determined, rounded in shape, the contours are even, clear, it has a calcified capsule up to 5 mm thick, the internal echostructure is heterogeneous, against the background of slightly increased echogenicity it contains a cavity 13x13 mm with liquid and partitions.

Report: Echinococcal cyst of the right lobe of the liver.

Final Diagnosis: Recurrent liver echinococcosis.

After preoperative preparation 29.04.2009, the patient was operated under endotracheal anesthesia. Produced excision of the postoperative scar in the right hypochondrium. Laparotomy in the right hypochondrium according to Fedorov. Pronounced adhesive process, adhesions are separated by a sharp and blunt way. During the revision, it was found that in the right lobe of the liver (VII-VIII segment) EC was 8x10 cm in size. To prevent recurrence, reliable isolation of surrounding tissues and organs was performed with a gauze cloth soaked in 20% sodium chloride solution. The cyst was punctured, the contents of the cyst were aspirated, after which the fibrous capsule of the EC was opened and the daughter cysts and the chitinous membrane of the parasite were removed. OP was sequentially treated with solutions of 20% sodium chloride for 2 minutes, hot furacillin (700-750C), 96% alcohol, 5% iodine

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tincture for 3 minutes. The fibrous capsule was excised as far as possible. The edges of the excised fibrous capsule are coagulated. Two drainage tubes were inserted into the cavity and fixed for control. The surgical wound was sutured tightly in layers.

The patient was discharged from the hospital with recovery. After 3 months, performs the previous work of the driver. Gained 8 kg in weight, no complaints. At the control ultrasound examination, there is no residual cavity. The long-term result (in 1,2,5 years) is regarded as excellent.

The proposed method of multicomponent intraoperative antiparasitic treatment in the conditions of surgical treatment of complicated forms of recurrent liver echinococcosis made it possible to achieve adequate rehabilitation of the OP in the early postoperative period, to reduce the proportion of patients with the development of various complications from 46.2% to 10.7%. In fact, for all these parameters, a significant ($P<0.05$) difference in indicators in the main group from the control was obtained (Table 1).

**Table 1**

Results of EE with RC treatment in complicated forms

| Index | Main group (n=28) | | Control group (n=26) | |
|---|---|---|---|---|
| | abs. | % | abs. | % |
| Suppuration of the RC or accumulation of fluid | 1 | 3,6% | 8 | 30,8% |
| Development of general complications after surgery | 1 | 3,6% | 4 | 15,4% |
| Bleeding from the liver parenchyma | 0 | 0,0% | 0 | 0,0% |
| Biliary fistula with development of peritonitis | 0 | 0,0% | 0 | 0,0% |
| Long functioning biliary fistula | 1 | 3,6% | 2 | 7,7% |
| Patients with complications | 3 | 10,7% | 12 | 46,2% |
| Reoperation or puncture drainage for complications | 1 | 3,6% | 6 | 23,1% |
| Loss of drainage from the RC or inadequate drainage | 2 | 7,1% | 6 | 23,1% |
| Long-term drainage of RC (more than 1 month) | 4 | 14,3% | 12 | 46,2% |
| Reliability of differences (criterion $\chi 2$) | 9.853; Df=4; P=0.043 | | | |

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## CONCLUSION

Thus, our experience and our studies have proved that the proposed method of complex intraoperative antiparasitic treatment of residual cavity after echinococcectomy of the liver has an increased antiseptic effect, the least traumatic and hepatotoxic effect, and is also affordable and easy to use.

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