

## RECURRENT LIVER ECHINOCOCCOSIS AS AN INDICATOR OF THE QUALITY OF PRIMARY SURGICAL TREATMENT AND PREVENTION IN AN ENDEMIC REGION

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**The relevance of the problem.** Recurrent liver echinococcosis remains one of the most difficult problems in abdominal surgery in endemic regions. Re-identification of echinococcal cysts after a previously performed operation may be associated with different mechanisms: residual lesion, implantation relapse, or true re-invasion. However, in clinical practice, these variants are often combined under the general term "recurrent", which makes it difficult to objectively assess the quality of initial treatment, choose a repeat surgical approach, and determine preventive priorities. In this regard, it is an urgent task to develop a tool that allows for the differentiation of repeated forms of liver echinococcosis based on available clinical and anatomical criteria.

**The purpose of the study.** To evaluate the clinical applicability of the Preinv index for the differentiation of repeated forms of liver echinococcosis and the allocation of probable true reinfection.

**Material and methods.** A multicenter retrospective analysis of 273 patients with confirmed recurrent liver echinococcosis, who underwent repeated operations in 2015-2025 in 16 different medical institutions, was conducted. The study examined the timing of the primary surgery, the location of the primary and recurrent lesions, the size of the recurrent cyst, the results of radiological diagnostics, and intraoperative findings. The Preinv index was calculated based on an integrated assessment of the time interval after the primary surgery, the size of the recurrent cyst, the estimated growth rate of the parasitic formation, and the topographic relationship with the previously performed intervention.

**Results.** It was found that most of the recurrent lesions had a topographic relationship with the primary surgical site or were located in the same liver lobe, indicating the prevalence of residual and implantation mechanisms. According to Preinv-stratification, about 84.6% of cases corresponded to potentially preventable forms of recurrent lesions, including residual and implantational variants. Probable true re-invasion was determined in 15.4% of patients. This category was characterized by longer periods after the primary surgery, the size of the repeated cyst corresponding to

the estimated rate of natural growth, and the absence of a direct anatomical connection with the primary intervention area.

The use of the index has shown that recurrent liver echinococcosis should not be considered as a single clinical category. Residual forms are more likely to reflect the shortcomings of primary diagnosis or incomplete treatment of the parasitic focus, while implanted forms reflect a violation of the principles of a parasitism, while true reinfection requires strengthening of sanitary and epidemiological measures.

**Conclusion.** The Preinv index is a clinically applicable tool for the differentiation of repeated forms of liver echinococcosis. Its use allows for the objectification of the interpretation of the recurrent process, the allocation of residual, implantation and re-invasion variants of the lesion, the assessment of the quality of primary surgical treatment and the substantiation of the choice of a preventive strategy in endemic regions.