

**DIAGNOSIS OF ECHINOCOCCOSIS AND POSTOPERATIVE
REHABILITATION LITERATURE REVIEW**

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Abstract: Echinococcosis is a parasitic disease caused by Echinococcus larvae, which can lead to the formation of cysts in various organs, most often in the liver and lungs. Diagnosis of echinococcosis is a complex process involving clinical assessment, laboratory tests, and imaging techniques. Symptoms can range from an asymptomatic course to severe symptoms due to the pressure of cysts on surrounding tissues. The most common diagnostic methods are ultrasound, computed tomography, and magnetic resonance imaging, which can accurately determine the presence and size of cysts. Serological tests such as ELISA play an important role in confirming the diagnosis.

Key words: echinococcosis, enzyme immunoassay, surgery, diagnostics, parasitic disease

**ДИАГНОСТИКА ЭХИНОКОККОЗА И ПОСЛЕОПЕРАЦИОННАЯ
РЕАБИЛИТАЦИЯ ОБЗОР ЛИТЕРАТУРЫ**

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Аннотация: Эхинококкоз - это паразитарное заболевание, вызываемое личинками эхинокока, которое может приводить к образованию кист в различных органах, чаще всего в печени и легких. Диагностика эхинококкоза представляет собой сложный процесс, включающий клиническую оценку, лабораторные исследования и визуализирующие методы. Симптомы могут варьироваться от бессимптомного течения до выраженной симптоматики, обусловленной давлением кист на окружающие ткани. Наиболее распространенными методами диагностики являются ультразвуковое исследование, компьютерная томография и магнитно-резонансная томография, которые позволяют точно определить наличие и размер кист. Серологические тесты, такие как ELISA, играют важную роль в подтверждении диагноза.

Ключевые слова: эхинококкоз, иммуноферментный анализ, хирургия, диагностика, паразитарное заболевание

Echinococcosis is a parasite - induced infectious disease caused by opisthorchis, primarily echinococcus. Echinococcus is a tapeworm from the tapeworm family that spreads through the fecal-oral route. The main hosts of this parasite are carnivorous animals such as dogs and wolves, which actively participate in the circulation of its life cycle. Human infection occurs through the consumption of unfiltered water or contaminated vegetables, fruits and berries, on the surface of which there are eggs of echinococcus. After the eggs enter the human intestine, they release the larvae, which enter the bloodstream and can settle in various organs, most often in the liver and lungs, forming cysts. Echinococcosis is usually asymptomatic in the early stages, which complicates diagnosis. It is important to note that if left untreated, cysts can enlarge, causing serious complications and requiring surgical intervention. Therefore, timely prevention and early diagnosis are of paramount importance for the control of this disease. [1,2,5].

The pathogenesis of echinococcosis involves complex interactions between the Echinococcus parasite and the host. The infection begins when ingesting eggs, which are excreted in the faeces of animals, most often dogs. These eggs enter the human intestine, where they develop into larvae, emerging from the eggs and penetrating the intestinal wall. At this stage, the larvae migrate through the circulatory system to various organs, the liver and lungs being the most susceptible to damage. In the host body, Echinococcus forms an echinococcal cyst containing a liquid containing daughter larvae. This process leads to mechanical compression and destruction of surrounding tissues, which can cause pain and functional disorders of the affected organ. Over time, cysts can increase in size, causing inflammatory reactions and allergic responses, which exacerbates the clinical picture. Cyst rupture can lead to anaphylactic shock or spread of infection. The pathogenesis of echinococcosis is

complex and requires further study to understand the mechanisms of host-parasite interaction, which may contribute to the development of new methods of prevention and treatment. [2, 5, 9,14,16].

Echinococcosis is a parasitic disease caused by infection by the larvae of *Echinococcus*, which belongs to the genus of tapeworms. The main source of infection is dogs and other mammals, which secrete the parasite's eggs with feces. When ingested, the larvae enter the liver, lungs and other organs, forming cysts. The symptoms of echinococcosis can manifest in various ways, depending on the location of the cyst. The liver may experience pain in the right hypochondrium, jaundice, as well as symptoms of exacerbation associated with cyst suppuration. In the lungs, patients may experience difficulty breathing, coughing, and hemoptysis. Diagnosis of the disease includes ultrasound, computed tomography and tests for antibodies to *echinococcus*. Treatment involves surgical removal of the cyst, as well as the use of antiparasitic drugs. It is possible to prevent echinococcosis by following the rules of personal hygiene, especially in those regions where the disease is widespread. It is important to remember that regular routine checkups and timely medical care can significantly reduce the risks. [2, 4, 6,17,17].

Functional diagnosis of echinococcosis is an important aspect of medical research aimed at identifying and evaluating the activity of a parasitic disease caused by *Echinococcus granulosus* infection. This process involves the use of various imaging techniques such as ultrasound, computed tomography and magnetic resonance imaging, which allows you to accurately determine the location and size of echinococcal cysts. At the first stage of diagnosis, it is important to collect an anamnesis and conduct a clinical examination, paying special attention to signs associated with diseases of the abdominal cavity. Laboratory tests, including serological tests, also play a key role in establishing a diagnosis, allowing you to determine the presence of specific antibodies. Functional analysis involves evaluating the functioning of affected organs, such as the liver and lungs, and their ability to perform their functions. An integrated approach, including clinical, instrumental and laboratory studies, contributes not only to the diagnosis of echinococcosis, but also to the development of effective treatment methods, which is the key to a successful recovery of the patient. Ultrasound diagnosis of echinococcosis is an important element in the timely detection and prevention of this disease. Echinococcosis, caused by leptosomes and parasites that have a negative impact on human health, is characterized by the formation of cysts in various organs, most often in the liver and lungs. With the help of ultrasound diagnostics, the doctor gets the opportunity to visualize cystic formations, their size and localization. Ultrasound allows you to quickly and painlessly assess the condition of the organs, as well as exclude or confirm the presence of *echinococcus*. Modern ultrasound technologies, such as elastography, significantly increase the accuracy of

diagnosis, allowing you to assess the structure of the tissue and its stiffness. In addition, ultrasound helps doctors plan further treatment tactics, whether it's surgery or conservative therapy. Timely referral to a specialist and regular examinations can significantly reduce the risk of complications associated with echinococcosis. Thus, ultrasound diagnostics is an essential tool in the fight against this parasitic infection.. [2,14,16].

Laboratory diagnosis of echinococcosis is an important step in the detection and treatment of this dangerous parasitic disease. Echinococcosis is caused by tapeworms of the genus *Echinococcus*, which enter the human body through contaminated eggs, entering the intestinal system. A key element of the diagnosis is a serological examination, which makes it possible to identify specific antibodies to *Echinococcus* antigens. Among the methods used are enzyme immunoassay (ELISA), which provides high sensitivity and specificity, as well as PCR diagnostics, which makes it possible to detect the DNA of the parasite in biological materials at an early stage. Ultrasound of the abdominal organs remains an important tool, which helps to visualize cystic formations and assess their size.

Echinococcosis caused by infection with *Echinococcus* cestodes is a serious medical problem that requires an integrated approach to diagnosis and treatment. A general blood test plays a key role in assessing the condition of a patient with this disease. With echinococcosis, leukocytosis is often observed, which indicates the presence of an inflammatory process. The level of eosinophils may be elevated, indicating an allergic reaction to the parasite or its metabolites. Anemia, which is observed in some patients, may be the result of blood loss or disorders in hematopoiesis associated with the presence of a cyst. It is equally important to assess the level of the liver and kidneys, since echinococcal cysts can be localized in these organs, causing their dysfunction. Changes in the biochemical analysis of blood can also indicate hepatitis or disorders of bilirubin metabolism. Thus, a general blood test provides important information about the patient's health status and allows doctors to make differential diagnoses, which is crucial for timely initiation of treatment and prevention of complications. To achieve a more accurate diagnosis, different methods are combined, which minimizes the likelihood of false positive results. An equally important aspect is the regular monitoring and analysis of the results of the dynamics of the patient's condition, which contributes to the formation of a comprehensive treatment regimen and improves the prognosis of the disease. [2, 9, 11,14].

Surgical treatment of echinococcosis is a key element in the complex therapy of this disease caused by the parasite *echinococcus*. The main purpose of the operation is to remove cysts or cysts formed in organs, most often in the liver and lungs, with the subsequent elimination of the risk of recurrence. Prior to surgery, careful preoperative preparation of the patient is necessary, including the use of modern imaging techniques

such as ultrasound, CT or MRI to assess the size and location of parasitic growths. Depending on the patient's condition and the prevalence of the process, the surgeon can choose open or laparoscopic access. After cyst removal, the cavity is drained to prevent fluid accumulation and reduce the likelihood of infectious complications. Anthelmintic therapy is also an important step, which helps to eliminate the residual particles of the parasite and minimize the risk of recurrence. Rehabilitation after surgery requires monitoring the patient's condition and evaluating the function of the affected organs. In general, timely surgical intervention for echinococcosis significantly improves the prognosis and quality of life of patients. [2, 8, 9,15,12].

Laser endoscopic treatment of echinococcosis is an innovative and effective method of combating this dangerous parasitic infection. Echinococcosis caused by *Echinococcus* larvae often affects the liver and lungs, causing serious medical complications. Traditional methods of treatment, such as surgical removal of a cyst, are associated with high risks and a long recovery period. With the use of laser therapy, it is possible to minimize the invasiveness of the intervention. Laser equipment allows you to purposefully affect the affected areas, destroying the cyst wall and destroying the parasite larvae with the help of a highly active light stream. This approach not only reduces the likelihood of relapses, but also speeds up the patient's recovery process. The endoscopic technique provides visual control of the process, which significantly improves the accuracy and safety of the intervention. The possibility of minimal injury and a reduction in the patient's hospital stay make this method increasingly popular in modern medical practice. The systematic use of laser endoscopy in the treatment of echinococcosis opens up new horizons in the field of parasitology and surgery, allowing doctors to achieve high efficiency while reducing risks to the patient's health. [2, 5, 9,14,16].

Echinococcosis is a parasitic disease caused by echinococcal larvae, which can lead to serious health consequences. Prevention of this disease plays a key role in its prevention and requires an integrated approach.

First of all, attention should be paid to controlling the population of domestic animals, especially dogs, which can be carriers of infection. Regular veterinary examinations and deworming of pets will help reduce the risk of infection. In addition, it is necessary to avoid contact with wild animals, especially in those regions where echinococcosis is common. It is also important to observe hygiene standards, especially in rural areas. Washing your hands after working with the soil, caring for animals, and before eating is a simple but effective preventive measure. The consumption of raw or poorly processed foods related to meat and vegetables should be avoided, as this can provoke infection. Educational programs aimed at informing the public about the transmission routes and symptoms of echinococcosis also contribute to raising awareness and effective prevention of this disease. [2, 5, 9,14,16].

Conclusions Surgical treatment remains the main method for echinococcosis, especially in cases where the cysts are large or cause complications. The operation includes the removal of cysts and, if necessary, drainage. Recently, endoscopic techniques and medications such as albendazole have also been used, which can be used in combination with surgery to increase the chances of a full recovery. An integrated approach to the diagnosis and treatment of echinococcosis ensures successful recovery of patients.

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