TREATMENT OF HYDATID CYST – INDICATIONS, RULES OR INDIVIDUAL DECISIONS

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(abstract): Hydatid cyst is a parasitosis caused by Taenia Echinococcus. In the last years, new methods of treatment of the hydatid cyst have been proposed only that it has received very little attention, if any. Despite the fact that a number of scolicidal agents have been developed against liver hepatic disease, the cornerstone of the definitive treatment remains surgery. Both the classic surgery techniques and the recent minimally invasive and laparoscopic methods target the eradication of the disease by simultaneously avoiding perioperative spillage and dissemination or recurrence of echinococcosis. The present article constitutes a review of the therapeutic options of the liver hydatid disease.

Key words: HEPATIC HYDATID CYST, LAPAROSCOPY, MINIMALLY INVASIVE TRATMENT, ALBENDAZOLE

The aim of the hydatid cyst treatment is the death of the parasite and consequently the cure of the disease [2, 3]. It has to be done with a minimal risk and maximum comfort for the patient, and always paying attention to avoid complications, secondary hydatidosis, and relapses. The methods to achieve the death of the parasite are both the sterilization of the cyst content, using scolicidal agents, or the parasite direct removal, through aspiration or the surgical excision of the entire cyst [2-6].

Sterilization of the cyst is based on the degradation of the germinal hydatid membrane and destruction of the viable elements of the hydatid fluid, due to the scolicidal drugs effect, whatever injected into the cyst or orally taken, or by thermal ablation (radiofrequency).

Injection of a scolicidal solution into the cyst cavity is the most ancient method of treatment for HHC [7]. It was considered the best method for treatment of simple cysts, the univescicular cysts, types I and III in the actual Gharbi ultrasound classification [8]. This method consists in puncture of the cyst and aspiration of part of the content to allow the introduction of a scolicidal solution.
of the scolicidal solution. This solution must stay in the cystic cavity during, at least, 10 minutes. After that, the cystic cavity is totally aspirated. In the past, this approach was only done by laparotomy, but nowadays we have two more approaches: laparoscopy and percutaneous puncture.

Percutaneous puncture is known as PAIR (Puncture, Aspiration, Injection (of the scolicide solution) and Reaspiration) and it is considered the Gold Standard [4, 5, 9-11]; since it is a minimal invasive technique, it is less painful to the patient as well as it has an inferior complication rate; it is less expensive with earlier discharge and activity resumption [4, 5, 10, 11]. From a diagnostic standpoint, PAIR is the only method that helps provide a direct diagnosis of the parasitic nature of the cysts. Neither imaging modalities nor serology is sufficient to exclude the diagnosis. PAIR is also an effective alternative to chemotherapy alone, because it has a higher efficacy and avoids the problem of drug resistance. It also shortens the time of treatment and final recovery. PAIR is a valuable alternative to surgery in terms of cost containment and hospitalization time. In types I and II (Gharbi classification), CE1 and CE3a (WHO-IWGE classification) echinococcal cysts with no or incomplete response to therapy, PAIR is an effective therapeutic tool in the management of human cystic echinococcosis.

Increasing evidence shows that CE2 cysts (multivesiculated, type 1 in Gharbi classification) tend to relapse after PAIR, so adopt other percutaneous treatments for this type of cyst.

Another therapeutic procedure is radiofrequency thermal ablation. This has proved to be a safe method to destroy the germinal layer. For the percutaneous approach, we can use the same kind of needle electrode employed in the ablation of liver tumors. Because the contents of the cyst are destroyed by heat rather than a chemical agent, the procedure is simpler than the PAIR treatment [14, 16]. However, further investigations are needed to be carried out before it can be recommended as an effective percutaneous treatment.

The percutaneous hydatidectomy is called PEvac (Puncture and Evacuation) try to solve one of the two objectives of the treatment – the evacuation of the cyst. The difference form PAIR concerns the last step (total aspiration), which is done under high pressure, in order to remove the hydatid membranes and all the remaining contents [4, 7]. This method (conservative procedure) can be performed under laparotomic, laparoscopic approach. The percutaneous approach is preferred because it is less painful for the patient, as well as it has less complication rate and less expensive, with earlier discharge and activity resumption.

When discussing surgery, regard should be given to cyst location in the liver and other organs, number of cysts anatomical and clinical complications, but also the surgical facilitation and the expertise of the surgical team. Surgery was the only treatment available before the introduction of anthelmintic drugs. It is considered the first choice of treatment for echinococcosis but is associated with considerable mortality (up to 2% in some series, increasing with second and further operations), morbidity, and recurrence rates (2-25%). Given the more frequent detection of early and asymptomatic E gransulosus liver lesions, a widened indication for chemotherapy exists.

Usually, radical surgery (total pericystectomy or partial heptectomy) is indicated for liver cysts. Conservative surgery (open endocystectomy with or without omentoplasty) or palliative surgery (simple tube drainage of infected cysts or communicating cysts) is also an option. More radical interventions have higher intraoperative risks but less numerous relapses.

Cystectomy consists of the excision of the cyst, which ideally should be total, in order to diminish relapses and complications [2, 4-7]. It can be performed through laparotomy or laparoscopy, both by open or closed methods. In both options, the dissection is made on the outside of the adventitia. The open method is performed by opening the cyst, then its aspiration and finally the removal of its content. Only after this step we proceed to the entire cyst “wall” removal [4, 5, 7, 15,16]. The closed method, known as Napalkoff’s procedure, consists of the entire removal of the cyst without opening it. Cysto-pericystectomy can be performed by a video-assisted surgery on selected cases [4, 17, 18], namely, small cysts ($)5 cm in diameter) with peripheral localization.

Another option is the hepatic resection (segmentectomy or lobectomy), in case of great size cysts in which there is a high risk of ischemia for the remained hepatic tissue [4, 12-14].
Compared to the conservative techniques, the radical procedures have higher risks perioperatively but fewer rates of complications and relapses after surgery. On the other side, conservative methods have less intraoperatively risks but higher rate of long outcome complications and relapses. The prevention of complications starts with an accurate surgical technique and the necessary caution in the removal of the cysts, which are very close to the biliary and vascular intrahepatic structures. To prevent the relapses, it is very important to protect the surgical field with pads soaked with scolicidal solution [2-5, 7, 14-19].

A recent meta-analysis aimed at finding evidence-based answers to the main questions about treatment strategy in HHC [2]. The main results were: 1) the level of evidence is too low to help decide between radical and conservative treatment; 2) chemotherapy is not the ideal treatment for uncomplicated hydatid cysts of the liver when used alone; 3) drug treatment associated with surgery requires further studies; 4) the laparoscopic approach is safe; 5) omentoplasty associated with radical or conservative treatment is efficient in preventing deep abscesses; 6) percutaneous drainage associated with albendazole therapy is safe and efficient in selected patients.

The question remains: which techniques are better to be used, the percutaneous drainage or the "radical" techniques? There are studies that show that percutaneous drainage is effective for both univesicular and multivesicular cysts (20, 21).

The complication are similar for radical or conservator techniques, a significative higher percentage for fever after surgery is presumably due to systemic absorption of a larger quantities of scolicidal agent during the procedure. The accesses are caused by ineffective cyst drainage after "open" techniques or delayed resolution of cyst cavity after percutaneous procedures.

Assessment of treatment efficacy relies mainly on the morphology and size of cysts, appreciated by repeated ultrasound examination.

The search for new drugs is ongoing. Attempts at increasing serum concentration of albendazole have given promising results. However, new therapeutic approaches are needed in order to make progress in the treatment of this disease, which still occur frequently worldwide.

**BIBLIOGRAPHY**


