

## Post operative follow up of hydatid cyst in liver

**ABSTRACT:** **Background:** Hydatid Disease (HD) still remains an important health problem in developing countries. In this study we evaluated the clinical features, management and outcome of patients with complicated liver (HD) & follow up. **Methods:** In a retrospective study, we reviewed the records of patients with liver (HD) Number of cysts, location, signs and symptoms, operative procedures, postoperative complications, and hospital stay were collected. **Results:** A total of 40 patients were operated for liver (HD). Patients 6 were males and 34 were females. The most common presentations were abdominal pain, fever. During the period, the most affected population was predominantly young and adult age group 41-50 & 51-60 years old. More affected in low socioeconomic status, in rural area 30 cases, in urban area 10 cases, where the possibilities of contamination in this area is & development of this pathology is higher. Females more affected more than male also more affected in vegetarian diet (65%), mixed diet (35%). **Conclusion:** post-operative liver hydatid cysts show different manifestations and surgical management is difficult. Although postoperative complications are high, they can be managed successfully with favorable results

**Keywords:** Hydatid disease, Echinococcus granulosus, liver

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### INTRODUCTION

Echinococcus granulosus was first documented in Alaska but is distributed world-wide. It is especially prevalent in parts of Eurasia, north and east Africa, Australia, South America. [1]. Hydatid disease (Cystic echinococcosis) is a parasitic disease that affects both humans and mammals more commonly dogs, horse, sheep and rodents. Cystic echinococcosis develops when human ingest egg of echinococcus granulosus which are shed in the faeces of dogs harboring adult stages of this tapeworm. Several strains of Echinococcus granulosus have been identified and all but two are noted to be infective in humans. The infection is transmitted to dogs when they are fed on infected viscera of sheep or other ruminant during the home slaughter of animals. In its domestic transmission cycle, E. granulosus requires two host types, a definitive host and an intermediate host. Dogs are definitive hosts of the adult tapeworm and ruminants (Particularly sheep and goats) are intermediate hosts. Human are accidental intermediate hosts and are not able to transmit the disease. Human ingest egg through direct contact with definitive hosts or indirectly through food, water or soil contaminated with egg. The larval stage that emerges from the egg gives rise to a hydatid cyst. The larval stage results in the formation of

echinococcal cysts in intermediate hosts. A cyst slowly enlarges, and signs and symptoms of disease vary according to its location and size in the body, duration of the development of the cyst and the cyst type. Cyst are found mostly in the liver and lung, although other organs may be unaffected [1]. A cyst can be diagnosed on the basis of clinical, ultrasound (US), Contrast enhanced computed tomography (CECT), Magnetic resonance imaging (MRI), immunoelectrophoresis (IE), and histopathology.

### Life cycle of *Echinococcus granulosus*

The life cycle of *E. granulosus* requires both an intermediate host usually (a sheep, a cattle, or a swine), and a primary canine host. A man becomes both an accidental and an intermediate host through contact with infected dogs or by ingesting food or water contaminated with eggs of the parasite. One can never be surprised to find out that this disease is most commonly found in the temperate and sheep-raising areas of the world [3] once the eggs are ingested, they release larvae into the duodenum. The larvae migrate through the intestinal mucosa and gain access to mesenteric vessels which carry them to the liver. The liver is the site of up to 70% of echinococcal lesions. Larvae that escape hepatic filtering are carried to the lung, the site of an additional 15-30% of lesions. From the lungs, larvae may be disseminated to any part of the body. (Figure 1). Larvae that escape the host's defenses and persist in a host organ develop into small cysts surrounded by a fibrous capsule. These cysts grow at a rate of 1-3 cm/year and may remain undetected for years. Thus; they can reach very large sizes before they become clinically evident. The cyst wall contains an outer gelatinous layer and an inner germinal layer. The germinal layer may develop internal protrusions and eventually form daughter cysts within the original cyst.

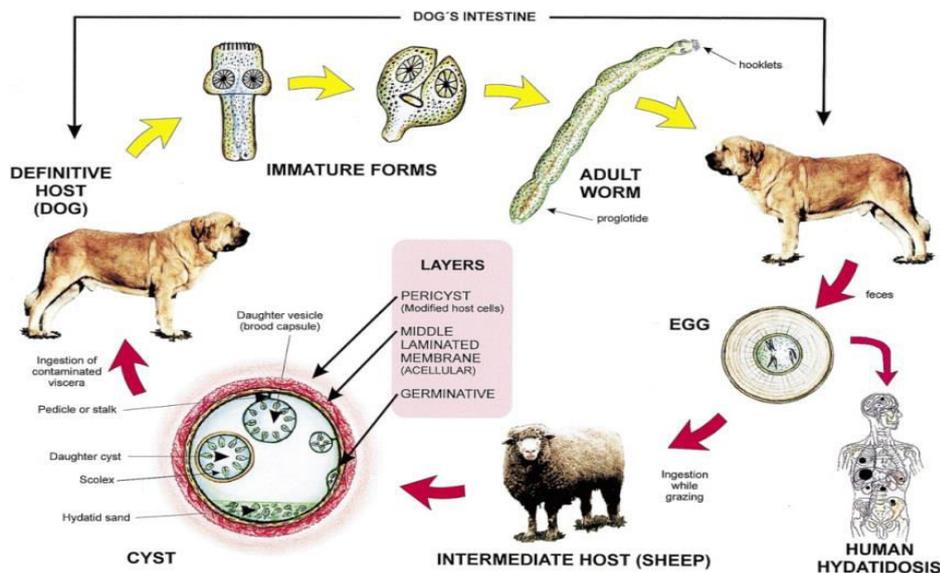


Figure 1. The Life cycle of *Echinococcus granulosus*.

## METHOD

In this study we evaluated retrospectively all Patients with post op. hepatic hydatid cysts who were treated surgical. Preoperative diagnosis was based on history, clinical examination, abdominal Ultra Sound (US) and Computerized Tomography (CT). Liver function tests, immunologic, serologic tests and blood eosinophils have very low sensitivity and therefore were not used in routine practice . The definition of Complicated Liver Cyst patients are, if presented with the following symptoms: (a) preoperative diagnosis of intrabiliary rupture with jaundice and possibly Cholangitis , (b) preoperative diagnosis of intrabronchial rupture, (c) intraoperative diagnosis of peritoneal perforation and (d) intraoperative cyst aspiration demonstrating bile-stained or purulent content, (e) liver abscess , intrapleural rupture (pleural effusion or empyema, (f) bile-stained sputum and daughter cysts in the sputum content (g) Partially or complete calcified priciest layer of cysts , (h) Compression on extra biliary duct and jaundice . All Patients with liver hydatid disease with jaundice and biliary tree obstruction were subjected to Endoscopic Retrograde Cholangio Pancreatography (ERCP) for identification of the cystobiliary tree communication and bile duct drainage or even sphencterectomy. Magnetic Resonance Cholangio Pancreatography (MRCP), another diagnostic tool which is available during the resent years, was not used in our patients. In cases with acute abdomen, at first laparotomy was performed and during exploration definitive diagnosis was identified.

## Results

40patients were include in this study >>at table 1 cases according age range 41-50 more no.10 cases.

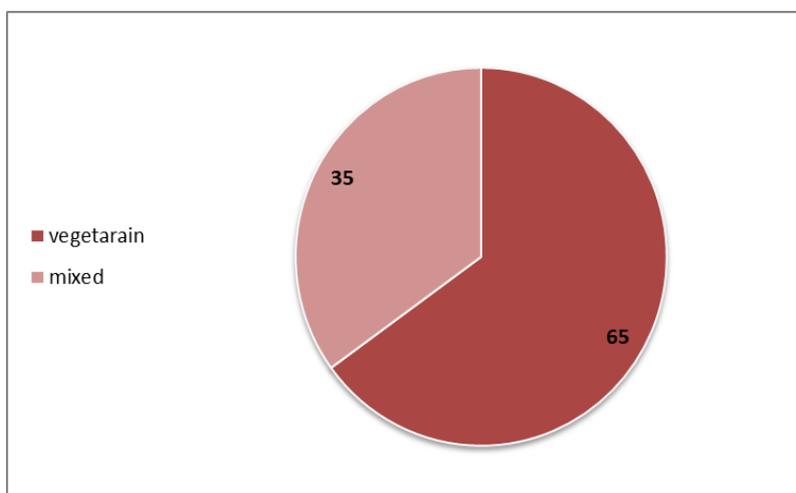


Figure 1: 65% vegetarian diet, 35% mixed diet.

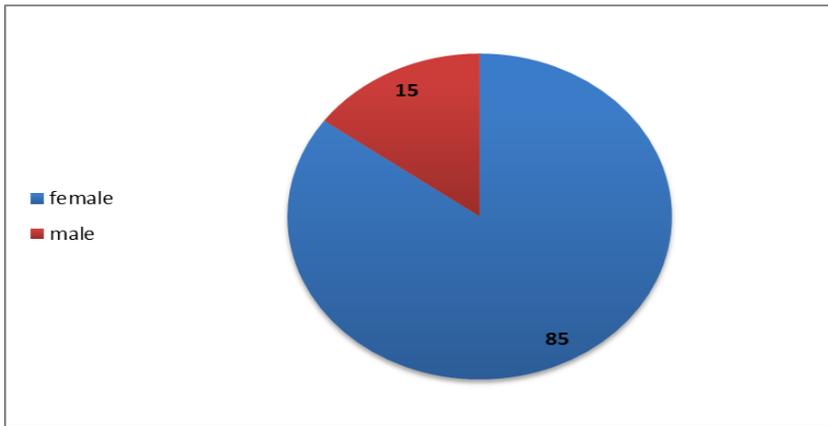


Figure 2: Female patients 85% of total patients but male patients 15%.

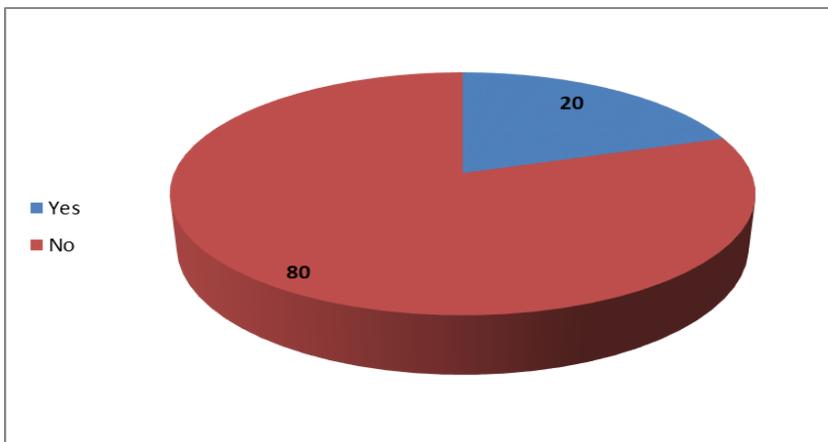


Figure 3: Have domestic animals not to be affected according our study 85% no have animals.

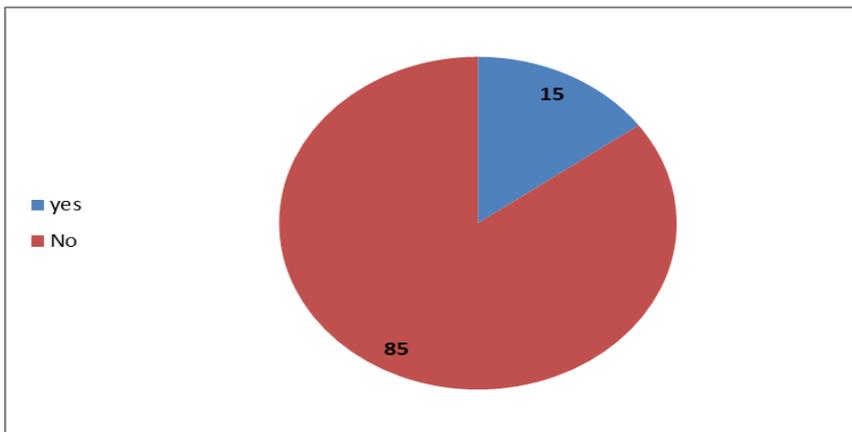


Figure 4: Complication of h cyst like intrabiliary rupture from 40 cases 6 cases (ratio 15%).

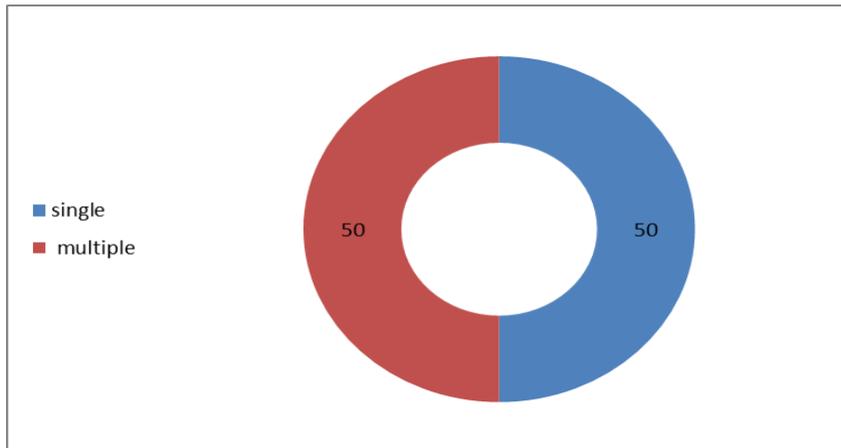


Figure 5: No. of cyst almost equal in proportion 50% single, 50%multiple.

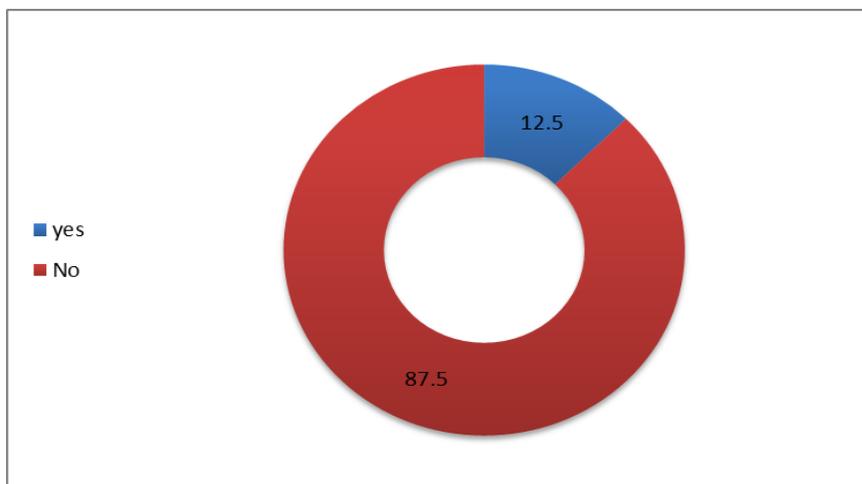


Figure 6: Recurrent h cyst 35 patients on recurrence (87.5%) only 5 patients (12.5%).

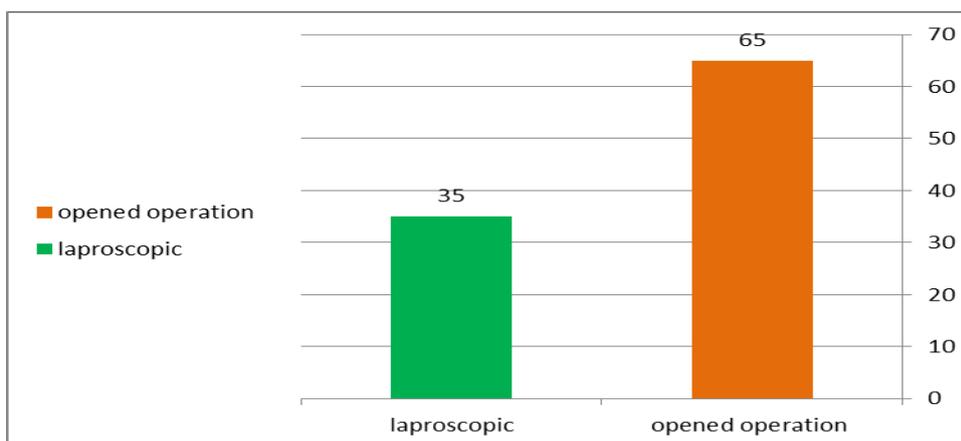
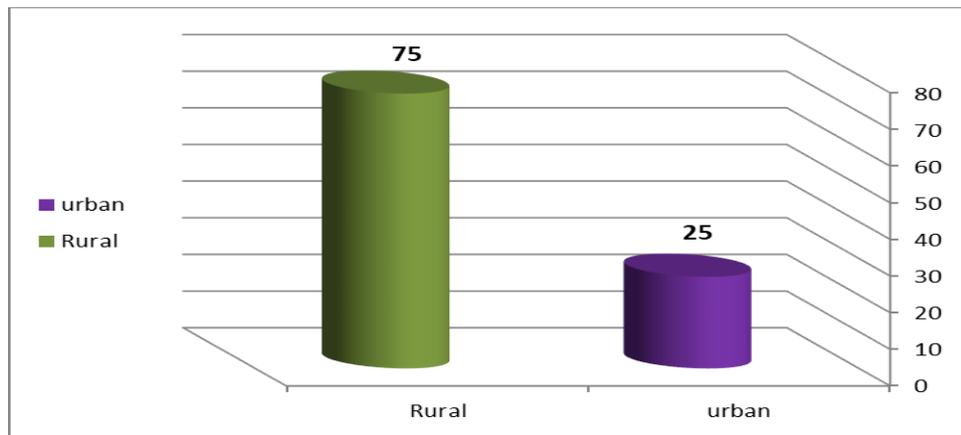


Figure 7: Type of surgery 26 cases (65%) open operation, 14 cases (35%) laparoscopic surgery.



**Figure 8:** address 30 cases (75%) rural area, 10 cases (25%) urban area.

In our data there were included 40 cases of post operative surgical h. cyst Mentioned in a period of time, affected population is predominantly young and adult age group 41-50 & 51-60 years old. More affected in low socioeconomic status , in rural area 30 cases (75%) in urban area 10 cases (25%) , where is the possibilities of contamination in this area & development of this pathology is higher . female more affected than male 85% female & 15% male also more affected in vegetarian diet (65%) , mixed diet (35%). The majority of lesions were equal between single 50% and multiple 50%. Regarding type of surgery there were 65% open operation & 35% laparoscopic approach

## DISCUSSION

Hydatid disease is a zoonotic infection caused by adult or larval stages of the cestode *Echinococcus granulosus*, which is a small, 5-mm-long tapeworm. Human infection by *Echinococcus granulosus* occurs most commonly in sheep- and cattle-raising areas where dogs assist in herding. Human beings are usually infected as intermediate hosts when they ingest egg-contaminated food or water. More than 50% of all human *E. granulosus* infections involve the liver. Additional common sites for hydatid cysts are the lungs, spleen, kidneys, heart, bone and brain. Early diagnosis and proper treatment will help to reduce the complication rate and prevent recurrence... at University of Brasov in NO.2-2011 procedure stud. Included 225 cases. Patients who received surgical treatment during the mentioned period of time. Female patients were more affected-133 (52, 15%), compared to males-122 (47.84%). Area of origin of patients was in most cases rural- 162 (63, 52%), whereas the possibilities of contamination in this area and development of this pathology is higher (professional contact with animals, consumption of food contaminated with eggs of *Taenia Echinococcus*). Affected population is predominantly young, active socio-professional, under 30 years-55 cases and between 30-39 years-54 cases. It can be noticed the location of majority. Lesions in the right lobe hydatid liver -186 (72.94%) and less in the left lobe, 37 (14.50%), or disseminated in both lobes-32 (12.55%). This is understandable given the "flow rolling" of portal blood flow. The majority lesions were single, 207 (81.17%) only 48 cases (18.82%)

In our data confirm hepatic hydatid cysts are more affected in low socioeconomic status , 75% rural area, 65% vegetarian diet , 85% female, house wife , and 41-50 years old & 51-60 years old adult population , hydatid cyst

most commonly affected right lobe of liver, and the number of hydatid cyst most commonly single. In our study that is 50% single & 50% multiple hydatid cyst. The cyst may also rupture into the bile ducts and release daughter cysts, resulting in biliary colic and jaundice; in our study intra biliary rupture in 20% of cases. In theory, there are three treatment options for hepatic cystic echinococcosis: chemotherapy, surgery, and percutaneous drainage or a combination of these therapies. There. However, the use of chemotherapeutic Agents alone, such as mebendazole or albendazole, are controversial because of their limited efficacy. These antiparasitic drugs are often administered as adjuvant therapy during surgery. With the advent of PAIR (Puncture, Aspiration, Injection, Respiration) technique, treatment of hydatid cyst is simplified to a large extent. Although certain types of hydatid cysts are successfully treated by PAIR, surgery remains the treatment of choice. Surgical treatment was used for all cysts that were larger than 15cm total cystectomy was. in our study 26 cases Open operation (65%) & 11 cases laparoscopy (35%). A drain is usually placed to prevent abscess, biloma, or biliary peritonitis. If bile drainage lasts >10 days, few cases it should be considered as a biliary fistula. ERCP may be used successfully to manage these patients with a low output, but in our study no patient need it. Benzimidazole-based chemotherapy is also a new treatment option. Chemotherapy should be the first choice for disseminated disease and for patients who have a prohibitively high risk for surgery, Chemotherapy is contraindicated in pregnancy due to embryotoxicity

#### **CONCLUSION:**

Hydatid disease of the liver though a common parasitic disease, has a considerable morbidity. The precaution that can be taken is that humans should avoid handling fecal matter of canines and avoid consuming infected animals and home slaughtering animals. Treatment comprises mainly surgical intervention or percutaneous treatment and or high dose, long term therapy with chemotherapeutic agents such as mebendazole or albendazole alone or in combination with praziquantel. Benzimidazole is also a new treatment option. Surveillance in animals is difficult because the infection is asymptomatic in livestock and dogs, and not recognized or prioritized by communities or local veterinary services. On the basis of biochemical, radiological and histopathological findings in all cases can suggest that pathological study could be used as more reliable tool than serology test

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