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Research Article

**EXPERIENCE OF 58 LIVER HYDATID CASES
SURGICALLY MANAGED AT NISHTER HOSPITAL
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Abstract:

Target: Hydatid disease is very common in the Pakistan. The aim of this study is to assess the results of various open surgical procedures for hydatid liver disease.

Project: Retrospective study.

Place and Duration: In the Surgical Unit II of Nishter Hospital Multan for one year duration from January 2019 to January 2020.

Methodology: 58 cases of liver aqueous cysts treated during this period were selected for this study. The results data was entered in SPSS version 18.0.

Results: Partial excision with residual cavity treatment in 33 cases, complete excision in 10 cases (cystoperistectomy), enucleation and drainage of the tube in 12 cases and examination of the CBD + "T" tube with cavity drainage of 2 cases and jejunostomy for 1 case of cyst.

Conclusion: We conclude that in the present era of laparoscopic surgery and with the availability of apparatus for aspiration and grinding with laparoscopic surgeons, although they give similar results in selected cases, but open surgery remains the main stay of it, because it also provides the ability to search the table for leakage while fighting with a watery cyst.

Key words: Cystopericystectomy, Hydatid cyst disease, minimally invasive PAIR technique (percutaneous aspiration under radiology).

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INTRODUCTION:

Hydatid cyst is now a common problem worldwide due to globalization, but it dominates in regions such as the Mediterranean, Middle East and South America. Hydatid cyst is a difficult problem in these endemic regions and is often reviewed to minimize recurrences. The cycle of this disease is well defined. *Echinococcus Granulosus* (most often) is a zoonotic problem caused by *Echinococcus multilocularis*, *Echinococcus oligaratus* and *Echinococcus volgarus*. Hydatid cyst has an outer fibrous coating, practically called an ectocyst; it is a layer of host tissue around the real parasite, i.e. the inner germ layer. Among the various presentations of hydatid cyst disease; the liver is the most common organ (60-70%), then the lungs (20-30%) and the involvement of other organs. Watery cyst treatment is complex, many options are available, and recurrence is common. It should be noted that improving basic hygiene concepts can reduce the burden of disease in endemic regions. Although this is the basis of surgical treatment, there is no consensus on the best treatment for hydatid disease. Generally, teams involved in the treatment of hydatid cysts are considering mebendazole or albendazole treatment with open surgery, minimally invasive PAIR, or laparoscopy. Laparoscopic therapy and PAIR discussions should be used in selected patients. On the other hand, open surgical treatment can be applied to all types and complications of liver hydatid disease with a relapse rate of 10-15%.

MATERIALS AND METHODS:

Fifty-eight cases of hydatid liver cysts were treated at the Surgical Unit II of Nishter Hospital Multan for one year duration from January 2019 to January 2020. All patients were assessed by baseline ultrasound followed by abdominal CT. Few cases were also subjected to ERCP and MRCP if justified by the presence of jaundice, gallbladder, intrahepatic bile duct enlargement or increased levels of alkaline phosphates. Watery liver cysts were assessed according to the Gharbis classification. All patients underwent a hemogram, liver function test, chest x-ray and hydrocele serology. The Ellis test was an immunoassay carried out to diagnose hydatid.

Patients were planned based on CT appearance, clinical picture and cyst location.

Patients with infected cysts were best emptied only externally after membrane removal.

A smaller cyst <6 cm that was peripherally located was considered for resection. The authors are convinced that they perform a non-anatomical and less sacrificed liver procedure due to the benign nature of the disease, so they did not do a right or left hepatectomy for it. So deeply embedded (thick liver parenchyma around the cyst) smaller cysts were excluded from the excision. Bigger non infected cyst with liver thinned pericyclic protruding out one of the surfaces was considered for drainage followed by complete membrane removal and then the cavity was either obliterated by captonage or omental packing. Part of pericyclic thinned out on liver surface appearing redundant was partially excised so that the cavity left for obliteration was smaller. In addition, CBD exploration was studied in patients with greater communication associated with bile dilation. In these patients, the cavity was emptied or had a cystojejunostomy. We have an observation protocol for all patients with an ultrasound scan every six months for the first three years and then every year. All patients were treated after surgery with Albendazole at a dose of 10 mg / kg. In two divided doses for 3 months, with a protocol every month, 3 weeks for the drug and one week break. During the period when the patient was turned off, a liver function test was performed and drug therapy was continued only when the liver function test was normal.

Some selected patients with multiple cysts also received albendazole treatment for two months before surgery.

Type 1 cyst with serology suggestive of hydatid disease was explained preoperatively that there is still the possibility that the cyst is simple and not hydatid.

All patients diagnosed with the disease were also referred to the team involved in PAIRS for wet cyst liver at our institute, and those who were not operated by them were operated on (58 patients) by our team.

RESULTS:

The series consisted of 58 patients treated at the tertiary care hospital. There were 22 men (37.93%) and 36 women (62.06%) with an average age of 45 years (13-75). Most patients had CT 54 abdominal tomography (93.10%). A preliminary ultrasound examination was performed in all patients (100%), and MRCP was performed in two patients (Table 1).

Table 1: Preoperative Investigations

USG Abdomen	58/58 (100%)
CECT Abdomen	54/58 (93.10%)
MRCP	2/5820 (3.44%)
X-ray Abdomen – Demarked Lesion	12/58 (20.68%)
X-ray Chest + Revealing Pulmonary	4/58 (6.89)

All patients underwent an x-ray of the abdomen and chest. The simple x-ray of the abdomen associated with the aqueous cyst is low and is more pronounced if the cyst is calcified. There were four patients who had a concomitant lung cyst in the lungs on a chest x-ray 4/58 (6.89%). Hydatid B / L was diagnosed in 5/58 patients (8.62%).

Most patients had mild upper right abdominal pain, which led to diagnosis in 36 (62.06%). Accidentally unrelated pain or ultrasound was diagnosed during pregnancy in 12 (20.68%). We treated three (5.71%) in an emergency; this concerned ruptured hydrocele in which one patient had maxillary biliary peritonitis due to a rupture of the main left duct connecting to the cyst. Four patients had an infected hydatid cyst with fever (6.89%). It was 2 patients with obstructive jaundice (3.44%) (Table 2).

Table 2: Symptoms leading to diagnosis:

Symptoms	No. of patients	Percentage
Pain	36/58	62.06%
Incidental	13/58	22.41%
Fever	4/58	6.89%
Rapture	3/58	5.17%
Obstructive Jaundice	2/58	3.44%

Table 3: Gharbi Classification of the Cyst type

Type of Cyst	Gharbi Classification	No. of patients (%)
Type I	Pure Single Walled Cyst	10/58 (17.24%)
Type II	Cyst with a split in the wall (water lily sign)	2/5 (3.44%)
Type III	Cyst with multiple septum (honey comb)	34/58 (58.62%)
Type IV	Heterogeneous echographic pattern (cyst - solid)	11/58 (18.96%)
Type V	Reflecting thick walls	1/58 (1.72%)

These hybrid cysts were classified according to the Gharbi classification. The maximum number of cysts in the series is type III (58.62%), followed by type IV and type I (Table 3). A group of patients was operated on urgently due to cholangitis, peritonitis or infected cysts. The surgical procedure is designed based on the location, size and type of cyst. In most patients, cyst drainage occurred after all membranes had been removed and the unnecessary ectocyst was partially removed, and the remaining cavity was treated with a trap or an omental filling (56%). The smallest peripheral hydatid cyst was treated in 10 patients (17.24%) along the liver border by cystopericystectomy. Patients with an infected aqueous cyst, biliary communication or obstructive jaundice were considered for closure of the visible fistula area in 2 patients and drainage of the tube from the cavity along with drainage of the "T" tube and CBD. The total number of patients with tube drainage is 12 (20.68%). Adapted surgical procedures are shown in Table 4.

Table 4:

Surgery done	No. of patients	Percentage
Partial excision with residual cavity management Residual cavity capitt onage	33/58	56.89 %
Omental or facliform packing	20/58	34.48%
Total excision (Cystopericystectomy)	13/58	22.41%
Enucleation and Tube drainage	10/58	17.24 %
CBD exploration + 'T' tube with cavity drainage	12/58	20.68 %
Cysto jejunostomy	2/58	3.44 %
	1/58	1.72 %

Table 5: Complications

Complications	No. of patients	Percentage
Early Post operative		
Bile leak	2	3.44%
Fistula	1	1.72%
Wound infection	1	1.72%
Pleural effusion	2	5.17%
Atelactasis	1	1.72%
Total Early complications	7/58	12%
Late Post operative Complications		
Residual collection with-out membrane	2/58	3.44%
Actual recurrence	2/58	3.44%

The observation period ranged from 3 months to 58 months. In both groups of tube drainage, two cases of residual cavity were found, in which relapse was suspected in 6-month and 12-month. The other two patients had a real cyst recurrence (3.44%).

**Figure 1& 2: Excision of hydatid liver in total**



Figure 3 & 4: Excision of another, peripheral hydatid with ligation of biliary communication identified and same was confirmed after opening up the cyst

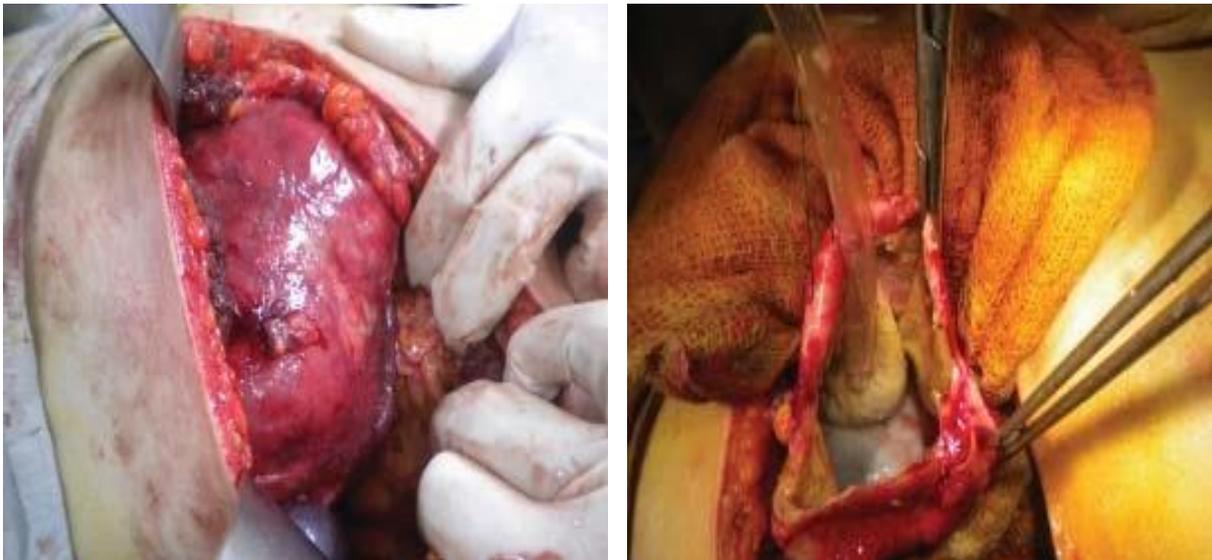


Figure: Big Hydatid managed with partial excision with captorage

DISCUSSION

Hydatid liver disease is a parasitic infection most often caused by the *Echinococcus Granulosus* prototype. Treatment of liver hydatid cysts in endemic areas is a serious problem. Between the two common modes of hydrated cyst disease there is ambiguous pain in the right upper abdomen or an accidental diagnosis when assessing another problem. Ultrasound is a very useful reference test for diagnosing a disease with 100% sensitivity. In general, most centers use the Gharbi classification for hydatid cysts based on ultrasound. Gharbi divided the *Hydatida* cyst into five categories in which types II and III are characteristic of Hydatid cysts, types I and V only show Hydatid cysts, and type IV is difficult to predict and mimics as a false

tumor. Based on their experience, the authors personally believe that CT is key to completing the diagnosis and finding the exact location and size of cystic disease, especially type IV cysts, many cysts; this helps to outline the appropriate procedure for a particular case. It is also useful to document and identify CT, MRI, MRCP, vascular and biliary anatomy. ERCP and MRCP can be a useful tool for patients who recommend bile communication because of the indirect symptoms of dilated bile radicals or girl's vesicles in the ducts. In our series, we used MRCP in 2 cases with suspected bile communication and leakage. In fact, three patients confirmed bile leakage into the cavity during surgery. One of these urgent patients also had bile peritonitis. Basically, we had 5 bile ducts, three of

which were identified and properly managed at the table, two presented as postoperative complications of bile leakage and fistula (one each). According to the literature, postoperative bile leakage reaches 16%. To avoid complications related to bile communication, special attention should be paid to bile communication in the preoperative period and at least on the table. Surgery remains the main form of treatment. The tendency to act is moving towards a more radical procedure to achieve fewer repetitions. The presence of an aspiration grinding apparatus has helped laparoscopic surgeons manage watercysts with similar results in carefully selected patients. We believe that we perform non-atomic pericystectomy in selected cases as much as possible. Even if a radical procedure cannot be recommended, it should try out combinations of procedures, such as partial excision, and then manage the cavity while taking in the remaining cavity, network or sickle. In our ward, we managed to achieve a low relapse rate (4%) in an area where cystic disease is endemic. Most authors report a repeatability rate of 8-20%. The authors recommend, if possible, more radical surgery to achieve a low relapse. In a limited period of five years, relapses occurred in four cases in which two cases were suspected because the membrane was not observed. In recurrent cases, it is also possible that preoperative albendazole treatment may lead to a dead cyst. The authors believe that the recurrent cyst may be the residual cyst of the girl who remained during the previous operation. Real recurrence will become symptomatic 3-4 years after surgery. Ultrasound alone is not enough to detect relapses after surgery, and sometimes even a CT abdomen can no longer distinguish a cavity and collection from a real relapse. The indirect haemagglutination and radioallergosorbent IgE test cannot be relied on because they remained positive for a long time after surgery. The only way to diagnose a relapse is to document skills in the remaining space. Albendazole has been reported to be effective, and preoperative use of this drug aims to reduce cyst viability and may reduce the risk of stroke. After surgery, 3-6 cycles of treatment with albendazole hydrate cysts is now a common practice, and we follow this.

CONCLUSION:

The liver of the liver requires more radical surgery, especially in the right place, in a tertiary care center. A more radical approach as well as meticulous cleaning and management of the cavity can reduce the frequency of relapses.

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