

**LAPAROSCOPIC LIVER HYDATID ENDOCYST-ECTOMY (INITIAL EXPERIENCE OF FOURTEEN CASES)****Abdulhadi M Mohamad<sup>\*</sup>, Salim M AL-Bassam<sup>@</sup> & Hamed Boserwel<sup>#</sup>.**

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**Abstract**

This study demonstrates the effectiveness and safe outcome of the treatment of hydatid disease by laparoscopic approach in selected cases. This is an experimental prospective study. Fourteen cases of liver hydatid (11 men & 3 women), properly selected were subjected to laparoscopic hydatid endocystectomy in the period from February to September 2004 at the endosurgery Center. Sirte County.

**Introduction**

Hydatid disease is a parasitic infestation, usually of the liver or the lung, caused by the larva of the tape worm of the genus *Echinococcus* and is characterized by the development of expanding cyst. It occurs in human, cattle, sheep, horses and other mammals. The two types are alveolar and unilocular. The unilocular is infestation with the larva of *Echinococcus granulosus*. It is characterized by the formation of unilocular cyst (single or multiple). As the cyst expands it may give rise to symptoms of space-occupying lesion in the organ affected<sup>1</sup>.

Diagnosis is suggested by the finding of the cyst by ultrasound and is further supported by the finding of floating layers of the germinal membrane on CT scan<sup>2</sup>.

In the treatment of the liver hydatid cyst, many surgical techniques have been used from aspiration, drainage, marsupulization to the complete

excision of the cyst with segmentary liver resection<sup>3</sup>. The laparoscopic approach for management of liver echinococcosis is a controversial issue because of scarce experience world wide<sup>4</sup>.

Complete evacuation of the cyst contents, including all daughter cysts and laminated membrane, with or without partial excision of the extra hepatic part of the cyst wall by the laparoscope was recorded in few articles<sup>5</sup>.

**Patients & Methods**

Fourteen patients, 11 men and 3 women, 37-52 years old with hepatic hydatid cyst were selected for laparoscopic hydatid endocystectomy. The disease was identified by history, physical examination, ultrasound and computed tomogram. Serology was omitted for the wide margin of false results.

Our selective criteria were:

1. Accuracy of the diagnosis.

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2. Unilocular solitary or two cysts in close proximity (Gharbi type I and II)<sup>6</sup>.
3. Size classified by ultrasound between 5-10 cm in diameters<sup>4,7</sup>.
4. Cyst location limited to anterior, lateral, anterosuperior and posterosuperior<sup>7</sup>.
5. Non complicated cyst (not infected or calcified).
6. Negative history of jaundice (obstructed type).
7. Free other vulnerable organs from the hydatid.

All patients were informed about possible conversion to open intervention.

No therapy (antihelminthic or antibiotic) was given prior to surgery.

Surgery was carried out with the patient in dorsal decubitus, with ports: umbilical 10mm for angled lens (30 degree), epigastric 10mm right sub-costal in the mid collar bone level, 5mm for aspiration, right sub costal in anterior axillary line. Gauze swabs soaked with 97.5% ethyl alcohol were introduced surrounding the cyst especially in the more protruded area to isolate the cyst from other viscera. Afterward, the cyst punctured by a long wide bore aspiration needle (long transparent cannula also used)<sup>8</sup>. The fluid is partially aspirated searching for the scolices in direct examination, then the ethyl alcohol injected inside the cyst. We wait 5 minutes then part of the wall of the pericyst excised by the scissor, then the germinative layer (laminated layer), scolices, daughter cysts and hydatid fluid taken out by applying fenestrated suction tube. The germinative part strongly stuck to the suction tube and transferred with care to the extracting bag<sup>7</sup>. (We used the surgical glove as an extracting bag in 5 cases). The remaining fluid sucked, the soaked gauze retrieved and suction drain inserted into the cavity of the cyst, another tube inserted through

lateral port to drain the sub hepatic or sub phrenic space depending on the location of the cyst. The technique of omentoplasty was not used in any of our patients. The management after surgery is the same as the inpatient laparoscopic cholecystectomy: oral intake begins when the postoperative ileus is over (usually within 24 hours), relieve pain and early ambulation. Patient discharged on average after 3-4 days depending on amount of external drainage.

Patients were instructed to take albendazole 400 mg once a day for three successive months with regular reporting to the outpatient department for regular follow up by ultrasound.

## Results

The fourteen cases were hemodynamically stable during the intervention with no significant spillage of hydatid fluid or scolices. Limited connection of the cyst with the bile tree was noted in two cases, no further action taken. All patients enjoyed uneventful postoperative periods.

Infection was not encountered and residual cavity effusion was checked by ultrasound and collection was not recorded. Cases were followed regularly during the next three months while patients on albendazole treatment.

## Discussion

Fear of anaphylaxis or dissemination discouraging surgeons from adopting laparoscopic technique to deal with liver hydatid<sup>9,10</sup>. Most of the surgeons practicing laparoscopic hydatid endocystectomy selecting their patients before intervention to obtain satisfactory results with minimum morbidity<sup>6</sup>. They regard the procedure convenient when proper selective protocol is fixed, for this reason they focus on surgical strategy and issue relevant guide lines for surgeons. These include: The précised diagnosis,

medical treatment, indications for surgery, scolical materials, morbidity, mortality and rate of recurrence. All surgical procedures aim at the complete removal of the parasite and preserving the pericyst, this method is easy and fulfill the strategy<sup>11</sup>. However random selection also reported<sup>11</sup>. The standard laparoscopic trocar insertion can be used in the procedure for evacuation of the content of the hydatid liver cyst<sup>6,10</sup>. Some convenient modification was created on the instrument aspirating the cystic content like using the thoracostomy tube and the liposuction tube<sup>12-15</sup>. The scolical agents that eradicate the parasite are many, among them are: alcohol 97.5%, hypertonic sodium chloride 21%, povidon iodine 10%<sup>3,13,14</sup>. We prefer alcohol because the drawback effect of the others<sup>14</sup>. The

current management of the residual cavity is either by drainage or omentoplasty, other sophisticated techniques are not recommended<sup>3,5,16-19</sup>.

The benefit of albendazol in therapeutic dose before and after surgery is controversial and a critical review of the literature discloses a lack of scientific confirmation<sup>3,11</sup>.

## Conclusion

In selected patients laparoscopic hydatid endocystectomy is safe, effective and convenient with early recovery and short stay in hospital. Instruments used for standard laparoscopic procedures are sufficient for performing therapeutic laparoscopy for hydatid liver. Intraoperative morbidity can be avoided.

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