

## Lesser Sac and the Giant Hydatid - Does Laparoscopic Surgery a Preferable Option?

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### Abstract

### Case Report

Cystic echinococcosis, commonly known as hydatid cyst, is a parasitic infection caused by *Echinococcus granulosus* in its larval stage. Humans, as intermediate hosts, are infected accidentally. Almost any part of the body is affected; however, the liver and lungs are the most common sites. The least affected and reported location in the literature is the lesser sac. Techniques: such as medical, surgical, and radiological, depending on the cyst size and location, each with pros and cons, have been used for hydatid cyst management. Laparoscopic surgery and puncture-aspiration-injection-reaspiration (PAIR) are known options of open surgery for hydatid cyst removal but; are rarely used in the treatment of; hydatid cyst in the lesser sac. Herein we report a case of giant hydatid in the lesser sac that; was managed successfully by the laparoscopic procedure.

**Keywords:** Hydatid Cyst, Lesser sac, Laparoscopic, *Echinococcus granulosus*.

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## INTRODUCTION

Cystic echinococcosis, commonly known as hydatid cyst, is a parasitic infection caused by *Echinococcus granulosus* in its larval stage. Humans, as intermediate hosts, are infected accidentally. Almost any part of the body is affected; however, the liver and lungs are the most common. The least affected and reported site in literature is the lesser sac. Different techniques: such as medical, surgical, and radiological, depending on cyst size and site, each with its pros and cons, have been used in hydatid cysts management. Medical management with Albendazole is opted in uncomplicated cysts as first-in-line [1], followed by surgical. The percutaneous procedure called puncture-aspiration-injection-reaspiration (PAIR) technique [2] and laparoscopic surgery [3], alternatives of open surgery has been reported: in the literature with a good outcome. Herein; we report a young rural woman, where hydatid in the lesser sac has been managed safely with laparoscopic surgery with no untoward effects and recurrence after follow-up for six months.

## CASE PRESENTATION

A 26year young female from the high mountainous rural area presented to our surgical OPD with a history of ON and OFF dull aching pain in her upper abdomen and early satiety for the last eight months with no history of fever or weight loss. On detailed questioning, the dogs are the pet animals in their homes. Clinical evaluation of the patient revealed a pale-looking otherwise, healthy patient and an immobile cystic mass in the upper left quadrant of the abdomen; on clinical evaluation. Laboratory workup was unremarkable except for Hb.9.0gm/dl. CT abdomen requested that showed a large lobulated solitary cystic mass lesion in the lesser sac (Figure-1) with a heavily calcified wall consistent with the hydatid cyst that was confirmed; by a positive enzyme-linked immunosorbent assay (ELISA) test for echinococcal antigen. The same large cyst at a slightly lower level (figure-2) shows low attenuation round areas consistent with daughter cysts. Fluid density adjacent to the cyst denotes ascites possibly reactionary. Before the surgical

intervention, the patient was managed: with a standard regimen of 200mg of Albendazole using three cycles of one-month therapy with a pause of 14 days between the cycles.

After medical preparation, the patient booked for elective surgery. All pre-operative and intraoperative precautions; were taken to prevent and manage any untoward situation that arises. Under general anesthesia; and laparoscopic approach, the lesser sac was freed from the stomach, followed by aspiration under negative pressure to avoid spillage. Hypertonic saline (scolicidal agent) was injected: into the sac, followed by re-aspiration after 20 minutes. The anterior wall of the sac was incised later with the removal of remaining scolices under direct vision. The omentum was placed and sutured to the sac cavity. An Abdominal drain was put in place. No complication; was observed intra-operatively. The patient had an uneventful recovery and was discharged on the fifth postoperative day. The patient was followed in the surgical out-patient department (OPD) at two weeks, three, and six-month intervals and remained asymptomatic.



**Fig-1: A large solitary hydatid in lesser sac with a heavily calcified cystic wall**



## **Fig-2: Hydatid with small low attenuation areas consistent with daughter cysts**

### **DISCUSSION**

Human *echinococcosis (sensu lato)* is a zoonotic disease: caused by tapeworms of the genus *Echinococcus*. In humans, the two forms are cystic *echinococcosis* (also called hydatidosis) and alveolar echinococcosis [4]. The underlying pathology of the human cystic *echinococcosis (CE), sensu stricto*, is the infection by the larval form of *Echinococcus granulosus*, endemic in pastoral areas globally [5-7]. The lesion may be found, in any organ of the body, with the most common site being the liver and lungs, which constitute 70% and 20% respectively [7], whereas the other organs are the least affected ones. CE of the lesser sac is the least reported hydatid in the medical literature. Our case is unique in the sense that a solitary hydatid was there in the lesser sac, that was managed successfully by laparoscopic procedure.

The clinical features depend on the site and size of the cyst: and commonly remain asymptomatic for long periods. The cyst may be found accidentally, or the patient may present with a mass abdomen with or without dull aching pain, as seen in our case. The diagnosis is based; on clinical findings of the cyst coupled with radiological findings. Adjunct to medical management, minimally invasive procedure, an alternative of the open surgery, had been reported in the literature with a good outcome.

To the best of our knowledge, two patients with lesser sac hydatid have been reported: in the literature, where one patient has been managed successfully with percutaneous drainage (PAIR-puncture, aspiration, injection, re-aspiration) [2] and the other with laparoscopic procedure [3]. Our case is the second; that was managed successfully with a laparoscopic procedure with no recurrence in the six-months follow-up period.

### **Ethical approval**

As it is a case study, thus no prior ethical approval was obtained.

### **Consent**

Written informed consent was obtained from the patient for publication of the case with accompanying images.

### **Declaration of Competing Interest**

The authors declare that they have no conflict of interest.

### **CONCLUSION**

The report of this case highlights the notion that laparoscopic surgery of the lesser sac hydatid, a minimal invasive procedure may be an option to open surgery as it achieves the objectives of both open and minimal access surgery.

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