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LAPAROSCOPIC MANAGEMENT OF A LARGE HYDATID CYST OF LIVER (CASE REPORT)

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Background: Hydatid disease in humans is endemic in sheep rearing regions. However, a worldwide distribution is encountered. This is a parasitic disease caused by Echinococcus granulossus, which is a cestode. Liver is the most affected organ. Surgery is the mainstay of treatment in hydatid cyst of liver. Since the popularization of laparoscopic surgery, hydatid cyst of liver is being treated laparoscopically in few of the centers. Spillage and anaphylactic reactions are the main pitfalls of laparoscopic management of the hydatid cyst of the liver. We present a case of hydatid cyst of liver, which was managed laparoscopically using Palanivelu Hydatid System (PHS) without any spillage or anaphylactic reaction.

Key words: Liver hydatid; laparoscopy; Palanivelu hydatid system

INTRODUCTION

Echinococcosis (hydatid disease) is a zoonosis caused by the larval stage of Echinococcus granulossus, where animals are both intermediate and definitive hosts and humans are accidental hosts. The disease is prevalent in countries where sheep rearing is common like Mediterranean countries, North Africa, Turkey, the Middle East countries, Australia, New Zealand, South America, northern China and Indian subcontinent. Sporadic cases are also seen in other countries all over the world due to travel and migration of population.[1] In human beings, liver is the most common organ to be affected by hydatid cyst; the incidence being 50%-93%.[1-3] An early diagnosis and proper management at this stage usually offers a cure. Surgery is the treatment of choice in hydatid cysts of liver. Hydatid cysts of liver till recently have been managed by the conventional open operative procedures that can cause significant morbidity in terms of infection, postoperative pain, and longer hospital stay among others.

Recently successful laparoscopic management of liver hydatid cysts is being reported from a few centers. In properly indicated cases, laparoscopic management of hydatid cysts of liver gives a better result as compared to the open surgical procedures. However, spillage and ensuing anaphylaxis are factors of concern in laparoscopic procedure for liver hydatid cysts.[4] However, specifically designed instruments like Palanivelu Hydatid System (PHS) helps preventing spillage of the cyst content into the peritoneal cavity; thus preventing the anaphylactic reactions.[5] We present a case of a large hydatid cyst of liver that was successfully managed laparoscopically using PHS.

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CASE REPORT

A 50 year old lady, housewife from a rural area presented with vague abdominal pain of one year duration. Her past medical history was unremarkable as was her clinical physical examination. Her hematological and biochemical parameters were within normal limits. Ultra sonogram study (USG) of abdomen showed a large hydatid cyst in the right lobe of the liver bordering on to the left lobe. Contrast enhanced computed tomography (CECT) of the abdomen revealed a 6.6 x 5.2 cm. hydatid cyst in the right. lobe of liver, more towards the anterior surface (Figure 1). She was admitted for a planned laparoscopic management of her hydatid cyst.

Figure 1
CECT liver showing hydatid cyst

A standard laparoscopic procedure was carried out. The optical 10 mm trocar was placed by an open technique in an infra-umbilical position. A 30 degree telescope was used for the procedure. After precisely determining the location of the cyst, a 5 mm trocar was placed slightly left to the midline coming to the right through the falciform ligament, again for better maneuverability. Palanivelu hydatid System (PHS) was used for the laparoscopic removal of hydatid cyst. A point in the right hypochondrium was so chosen as to the shortest from the anterior surface of the cyst for direct entry into it with the Palanivelu cannula (Figure 2) with partial aspiration (suction) of cyst contents and instillation of 30 ml of 10% povidone-iodine as scolicidal which was kept for 15 minutes. The contents were sucked through the canula (Figure 3). Meanwhile an endobag fashioned out of a glove was inserted and kept adjacent to the cyst. Re aspiration was done followed by wide opening of the roof and transfer of the daughter cysts and the germinal membrane to the endobag.The cavity was then inspected by introducing the scope through the Palanivelu system. Rest of the contents was taken out under direct vision with the scope inside the cyst cavity which was then filled with scolicidal agent. After 10 minutes, suction followed by a thorough saline wash and reinspection of the cavity for any biliary communication was done. A wide de-roofing with coagulation of the margins was done. A 28 Fr tube drain was placed into the cavity and brought out through the right port incision. The abdomen was desuffulated under vision and the drain was fixed with closure of the remaining ports. Post operatively, she was treated with Albendazole for 8 weeks. She was discharged on the fifth day with the drain which was removed on the tenth day.

Figure 2
Liver Hydatid.
Right upper trocar being put over the cyst

Figure 3
Daughter cysts being cleared by suction through PHS

DISCUSSION

Hydatid cysts of the liver are characterized by an indolent yet unremitting growth in the majority of infected patients, with the potential for cyst metastasis to peritoneal cavity or lungs. Hydatid cysts show slow growth rates and rarely cause systemic symptoms. Approximately 75% of the cases present as an asymptomatic abdominal mass or picked up on an abdominal sonography ordered for some other complaint. These patients usually present with an abdominal swelling, distention, subcostal heaviness, jaundice, fever etc.

Conventional open surgery of hydatid cyst is still the mainstay of management.[3] Howevr, it entails more morbidity due to a long laparotomy wound and consequently longer hospital stay adding to the expenses and delayed return to work. Laparoscopy definitely does offer a better advantage in this regard. The first laparoscopic management of hydatid cyst of liver was described in 1994 by Bickel A et al.[6] However it should be judiciously used as chances of spillage and dissemination are more. Chances of spillage and ensuing anaphylaxis reaction had discouraged the surgeons to practice laparoscopic surgery in management of liver hydatid cysts.[4] There are so many instruments described for laparoscopic surgery of liver hydatid cysts to evacuate the daughter cysts, laminated membranes and other contents from the cyst cavity; e.g. a perforator–grinder–aspirator apparatus described by Saglam and perforeaspirator designed by Zengin et al.[7,8] But, it is the Palanivelu hydatid system, which has the advantage of removing all the cyst contents without the fear of spillage as it gives a total contamination free field throughout the procedure.[5] It has also the additional advantage of visualizing the cyst cavity in a magnified view to detect any cystobiliary communication. Not all cases of liver hydatid cysts are amenable for laparoscopic procedure. Superficial cysts including Gharby type I and II liver hydatid cysts are ideal for laparoscopic surgery. Hence, ideal case selection and use of proper instruments like Palanivelu Hydatid System are main considerations to the success in laparoscopic hydatid cyst surgery. Post operative administration of Albendazole for eight weeks followed by ultrasonological follow up should be done in every case managed laparoscopically.

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