

Pulmonary and Liver Hydatid Cyst - Exploration of a rare surgical entity in single stage surgery

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Case Report

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Abstract: Hydatid disease is known to occur in many parts of world with pulmonary disease accounting for 5 % to 44% of it. Hydatid cyst has also been described in many unusual locations however; it is unusual to find huge cysts at multiple locations and organs. From this case report we conclude that a combination of laparoscopic and thoracoscopy followed by conventional deroofing of the hydatid cyst in a single sitting achieved complete removal of cyst and early mobilization in the management of pulmonary and liver hydatid cyst and is safe, prevents the need of repeated surgeries, and lessens the financial burden, hospital stay, days of absence from work and mental stress on the family members of the patients. These simple procedures are safe, reliable and successful. We also take a look at the clinical presentation, management of pulmonary as well as liver hydatid cyst in the same patient and postoperative complications.

Keywords: Hydatid cyst, scolical agent, deroofing

INTRODUCTION

Hydatidosis is an endemic zoonosis in Middle Eastern countries, the Mediterranean coast and South Africa caused by *Echinococcus granulosus* commonly. Hydatid disease is known to occur in many parts of world including India. Dogs are the definitive host and sheep are the intermediate hosts with man being an accidental intermediate one. Humans are an end stage to the parasite. After being transmitted from the faeco - oral route, the ova develop in the intestines, gain access to the blood stream and reach the sites of deposition wherein they develop into their larval form - hydatid cyst comprising of the daughter cysts. Liver (75%) remains the commonest site and lung involvement ranges from 5% to 44% [1, 2].

Hydatid cyst has also been described in many unusual locations however; it is unusual to find huge cysts at multiple locations and organs [3, 4]. Preventive measures include observance of strict hygienic standards, exercising of utmost caution in feeding dogs with meat and systemic medication of dogs with arecoline hydrobromide, the antihelminthic of choice. A hepatic hydatid may produce symptoms of vague abdominal pain, vomiting with hepatomegaly on examination. Jaundice and fever are present in 8% of patients [5, 6]. Rupture of the cyst into the biliary tree or free rupture into peritoneal cavity can lead to disseminated echinococcosis and /or a potentially fatal anaphylactic reaction [6].

Simple thoracic hydatid cysts may remain asymptomatic for a long time. As they enlarge, some may show symptoms such as slight chest pain, nonproductive cough and dyspnoea resulting from compression of adjacent organs. Rupture of the hydatid

cyst into an adjacent bronchus may occur because of vigorous coughing, hemoptysis and expectoration of a large amount of salty sputum consisting of mucus, hydatid fluid and occasionally fragments of the cystic membrane. The scolices can be found by microscopy in the sputum. When rupture of the hydatid cyst occurs into the pleural space, hydro-pneumothorax develops, followed by empyema.

The diagnosis of simple thoracic hydatid cyst is not difficult. Since no effective treatment is available, once the diagnosis of hydatid cyst is made or even suspected, operation becomes mandatory in order to avoid the complications such as anaphylaxis, infection of cyst, pressure symptoms and dissemination due to leak or rupture. A gradual reduction in the antibody reaction after 1-4 years of surgery indicates a complete cure. The definitive cure for hydatidosis is still surgical [7-9]. Several surgical procedures were described for the treatment of hydatid cysts with successful use of

thoracoscopic/laparoscopic procedures has been reported but feasibility is still questioned. It follows the same principles of the open technique, which include sterilization of the cyst with scolicedal agents (e.g., hypertonic saline, savlon) and complete excision of cyst. Thus, the purpose of this case report is to look at the features at clinical presentation, deroofting of pulmonary and liver hydatid cyst and postoperative complications with laparoscopic modality for liver hydatid and thoracoscopy converted to thoracotomy for pulmonary hydatid cyst.

CASE REPORT

A 28 year old female patient presented to our OPD with complain of left sided chest pain, occasional episodes of hemoptysis and vague on and off abdominal pain. USG abdomen was s/o right hepatic lobe cystic lesion p/o hydatid cyst. Chest Xray s/o left lower lobe retrocardiac shadow. CECT THORAX AND ABDOMEN was then done and it was s/o well defined rounded hypo density of approx. 5.7 x 4.6 cm in left lower lobe with multiple daughter cysts with it. The lesion shows lobulated and spiculated outline communicating with bronchioles. Peripheral enhancement is seen after contrast administration. No evidence of calcification within it. The lung adjacent to the cyst shows fibro atelectic changes. (Figure A) Liver shows large well defined focal hypodensity is seen in right lobe measuring approx. 7.9 x 8.0 cm (segment VIII & V) with peripheral enhancement. (Figure B) p/o

hydatid cyst Patients blood investigations (CBC, LFT, RFT) were normal and preanaesthetic check up done. She was then posted for single staged thoracoscopic and laparoscopic excision of the pulmonary and liver hydatid cyst. The patient was taken under general anaesthesia with a double lumen endotracheal tube. First laparoscopic packing of surrounding area with 10% betadine soaked mops was done, then cyst aspiration followed by instillation of scolicedal agent (20% NaCl) and re-aspiration of the liver hydatid cyst was done followed by de-roofting with removal of the daughter cyst, leaving the pericyst open with omental patch over it. With one lung ventilation, thoracoscopy was done; but was converted to a lateral thoracotomy due to dense adhesions around the hydatid cyst present over left lower lobe. Again the same procedure was repeated with laying the cyst open. However communications with two bronchioles was found with endocysts present inside the bronchioles, which were removed and patency confirmed by bronchoscopy. The communicating bronchioles were closed with polypropylene suture. Left lung showed adequate expansion with two chest tubes placed at the apex and base. Post operative period was uneventful with removal of both the chest tubes within 6 days, with adequate chest physiotherapy. Patient was discharged on 7th post operative day on Tablet Albendazole and was followed up for 3 months without any complain. Histopathology report was s/o hydatid cyst.

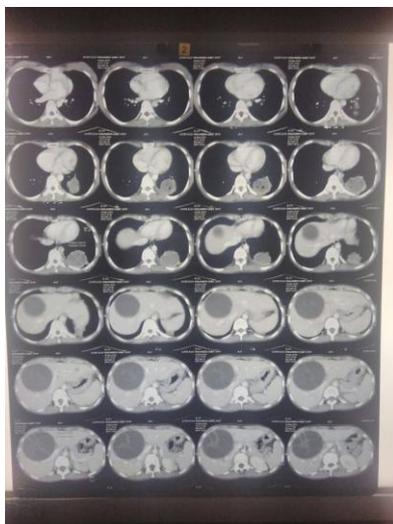


Fig-A: Cect chest and upper abdomen plate 1

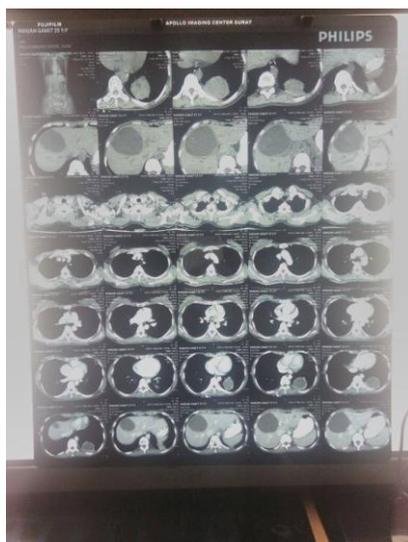


Fig-B: Cect chest and upper abdomen plate 2

DISCUSSION

Treatment of hydatid cyst has not changed much over the years, with surgery remaining the mainstay of therapy. It is unusual to find such large cysts at multiple sites and organs there are chances of spontaneous rupture in large cysts which can sometimes be fatal or lead to serious morbidity. There are reports in the literature of staged management [8, 9] as well as simultaneous management of pulmonary and hepatic hydatid cysts [10]. In our experience, simultaneous management is a safe option. Spontaneous cyst rupture can lead to bronchial and biliary fistula for pulmonary and hepatic cysts, respectively. Computed tomogram is the investigation of choice, and presence of hydatid cyst at one site should lead to search at other common sites of its occurrence. Treatment at an early stage can prevent the complete destruction of a lobe requiring lobectomy or major resection.

CONCLUSION

Surgical intervention done in a single stage for hydatid cysts at multiple sites is safe, prevents the need of repeated surgeries, and lessens the financial burden, hospital stay, days of absence from work and mental stress on the family members of the patients.

Separate incisions for pulmonary and hepatic cysts can be more beneficial than the transdiaphragmatic approach, as they preserve the diaphragmatic function and prevent the transdiaphragmatic spread of infection, bile leakage and cross contamination.

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