

Case Report

Left lung and liver hydatid cyst: managed in single surgery

Krishnanand Anand, Vishal Bansal*

Department of General Surgery, L. N. Medical College and J. K. Hospital, Bhopal, M. P., India

Received: 30 April 2020

Revised: 16 June 2020

Accepted: 18 June 2020

*Correspondence:

Dr. Vishal Bansal,

E-mail: drbansal.vb@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

A 35 years male presented with history of pain left chest wall associated with cough, fever and blood in sputum on and off, complaint of pain in abdomen which was dull aching gradually progressive in nature since, 2 months. Radiologically diagnosed to have huge hydatid cysts both in left lung and liver. It is unusual to find such large cysts at multiple sites and organs as in this case. There are reports in the literature of staged management as well as simultaneous management of lung and liver hydatid cysts. Though concomitant cysts in lung and liver may be treated comfortably by one stage surgery. Here both cysts were enucleated in the same sitting by a combined thoracic and abdominal approach (left thoracotomy followed by laparotomy through right subcoastal incision). The technique is safe and results were comparable to two stage surgery. Albendazole treatment in post-operative period helps to prevent recurrence. This report emphasizes that surgical intervention for hydatid cysts at multiple sites done in a single stage is safe, lessens the financial burden and hospital stay by avoiding multiple surgeries and anaesthesia.

Keywords: Lung and liver hydatid cysts, Laparotomy, Thoracotomy, Enucleation

INTRODUCTION

Hydatid disease is a parasitic infestation caused by *Echinococcus granulosus*. It is known to occur in many parts of world, but is relatively rare in India. Liver remains the commonest site and lung involvement ranges from 5-44%.^{1,2} Normal method of transmission is by ingestion of eggs, cyst can also develop in the lung if eggs are inhaled. The lung hydatid cyst develops slowly. The laminated membrane in lung hydatid cyst is very thin, so it ruptures before reaching an enormous size. Morphologically, cyst consists of 3 layers and hydatid fluid. The first layer is the peri cyst which is the host tissue formed by the lung. Other two layers, the laminated membrane and the germinative layer, belong to the parasite. The cyst fluid contains daughter vesicles. Diagnosis of hydatid cysts made ultrasonically and confirmed by a computed tomography (CT) scan. Once the diagnosis of hydatid cyst is confirmed, operation

becomes mandatory to avoid the complications like anaphylaxis, cyst infection, pressure symptoms and dissemination due to leak or rupture.

The definitive cure for pulmonary hydatidosis is still surgical.³ Surgical procedures were described using Barrett technique in 1952 (intact endocystectomy without preliminary aspiration), peri cystectomy (i.e. Perez-Fontana operation) and lobectomy as described by different authors.^{4,5} Bronchial communication should be closed by purse string sutures. These simple procedures are safe, reliable and successful.

CASE REPORT

A 35 years male presented with history of pain in left chest wall which was associated with cough, fever and blood in sputum on and off and he also complained of pain in abdomen and distension for 2 months with no

other systemic complaints. Ultrasonography of abdomen revealed a large cyst in the right lobe of liver. Chest X-ray raised the suspicion of another cystic mass in the left lung also (Figure 1). CT of the chest and abdomen was done thereafter, which revealed the presence of large cysts both in the left lung and liver (Figure 2).



Figure 1: Chest X-ray shows left lung cyst.

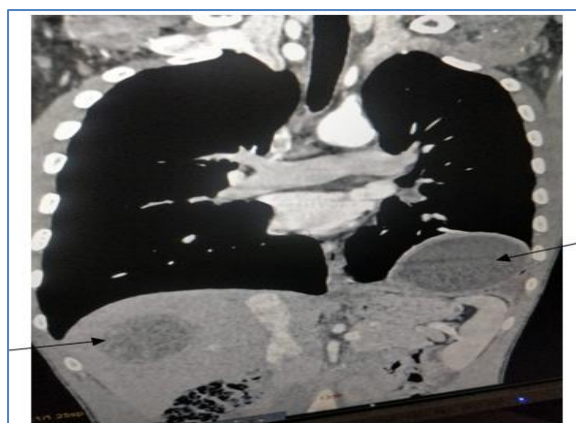


Figure 2: CECT showing hydatid cyst in left lung and right lobe of liver.



Figure 3: Hydatid cyst in left lower lobe lung through left thoracotomy.

Investigations

Laboratory findings of routine investigation were within the normal range. Radiological investigation on chest X-ray (Figure 1) reveal the cystic lesion (5x5 cm) in left lower lobe. On USG 8.2x8.7x6.7 cm (vol 255 ml) cystic lesion in right lobe of liver with internal septations and moving internal echoes f/s/o hepatic hydatid cyst and also 8.2x7.5 cm cystic lesion in left lower lobe of lung with internal septation and moving internal echoes f/s/o hydatid cyst of left lower lobe of lung. On CECT chest and abdomen (Figure 2 and 3) a thick walled cyst of 10.5x9x7.8 cm in left lung base with no evidence of calcification of cyst and 9.3x8.9x9.9 cm well defined fluid density cystic lesion in segment VIII, VII and V of liver all this feature suggestive of hydatid cyst of liver and left lung.

Surgical intervention

General anesthesia and intubation were done with double lumen ET tube. Left lateral thoracotomy was done through sixth intercostal space and cyst was localized in the inferior segment of the left lower lobe (Figure 3 and 4). Sponges soaked with scolicedal agent were packed around the cyst. Peri cyst was incised and toxic fluid was aspirated and with gentle pressure enucleation of cyst, capitonnage of the cavity was done (Figure 5 and 6). After which lung was fully inflated (Figure 7). Thoracotomy closure was done after inserting an ICD. After which laparotomy with right sub-coastal incision was done. The liver cyst was evacuated using wide bore suction avoiding spillage and babcocks forceps (Figure 8). Liver cyst cavity (Figure 9) was filled with omentum to prevent collection of fluid and abscess formation and abdominal drain was placed. Both the cyst was removed completely (Figure 10). Patient recovered well inspiratory exercise was encouraged from day one following surgery. ICD removed after cessation of drainage, air leak and radiological lung expansion. Drain was removed on 5th day. Oral albendazole was started in the dose of 10-20 mg/kg and was continued for 6 months.

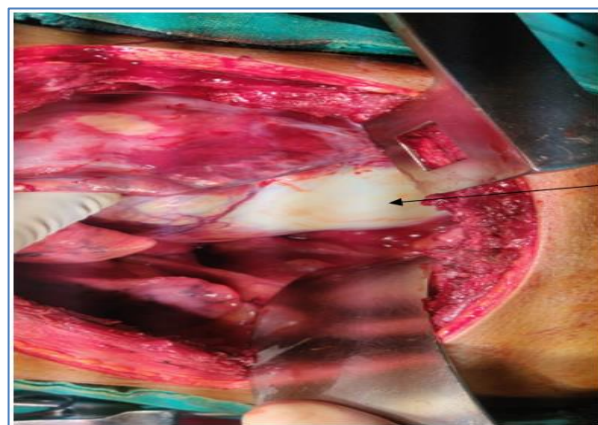


Figure 4: White capsule of left lung hydatid cyst.



Figure 5: Instillation of scolicedal agent into the cavity.

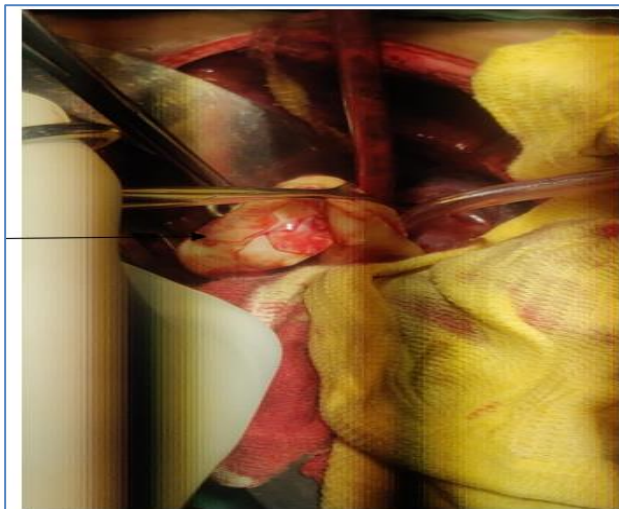


Figure 6: Evacuating left lung hydatid cyst.

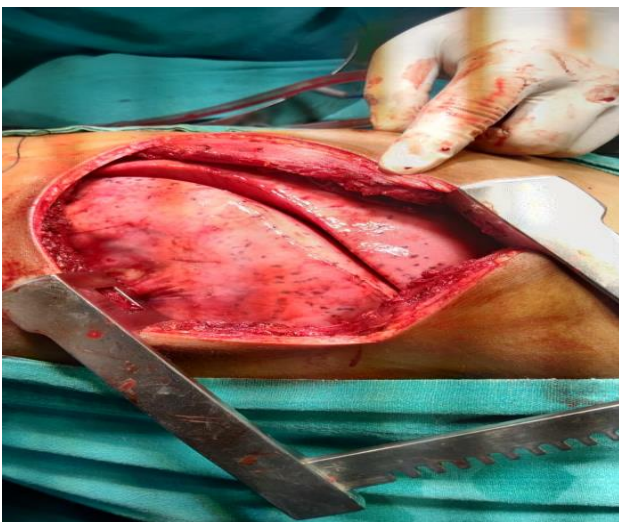


Figure 7: Post-operative fully inflated left lung.



Figure 8: Evacuating the liver cyst.



Figure 9: Empty liver cavity after enucleation of liver cyst.

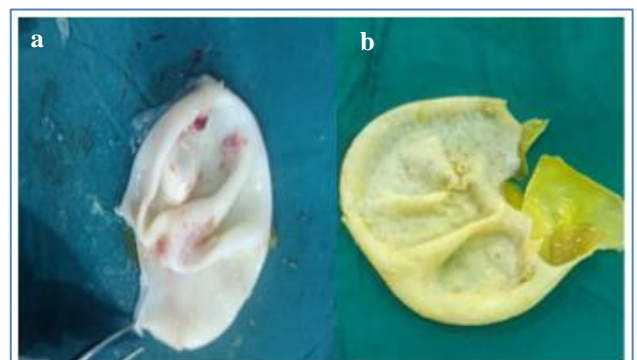


Figure 10: Excised specimen of lung and liver hydatid cyst.

DISCUSSION

Treatment of hydatid cyst has not changed much over the years. Surgical removal is the treatment of choice. The principle of surgical treatment should be evacuation of

the cyst with removal of the endocyst, avoidance of contamination and management of residual cavity.

The most important consideration in hydatid surgery is to preserve native tissue as much as possible. Minimal access techniques (thoracoscopy and laparoscopy) are also being used, but the risk of rupture of the cyst increased. Moreover, packing the surrounding area with scolicedal sponges is also not possible. Small cysts sometimes resolve with medical treatment with albendazole. However, pre- and post-operative 1-month course of Albendazole considered in order to sterilize the cyst, decrease the chance of anaphylaxis, decrease the tension in the cyst wall and to reduce the recurrence rate post operatively.^{6,7} Percutaneous aspiration of the cyst, injection of scolicedal agents under ultrasonographic guidance and re-aspiration (PAIR technique) has been described in the literature, but having risk of anaphylaxis and its complications. Concomitant cysts in left lung and right lobe of liver treated comfortably by one stage surgery to prevent second operation here both cysts were enucleated in the same sitting by a combined thoracic and abdominal approach (thoracotomy followed by laparotomy). Use of double lumen endotracheal tube is advantageous to prevent spillage of contents in the trachea. This report emphasizes that surgical intervention for hydatid cysts at multiple sites done in a single stage is safe, lessens the financial burden and hospital stay by avoiding multiple anaesthesia and surgeries.

CONCLUSION

Single stage surgical management of lung and liver hydatid cysts with a combined thoracic and abdominal approach (thoracotomy followed by laparotomy) is a suitable option. It avoids repeated surgeries and thereby

additional cost and hospital stay. It also preserves the diaphragmatic function and prevent cross contamination. Results are quite satisfactory.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Anantaraman M. Pulmonary hydatidosis in India: An overview. *Lung India*. 1983;1(4):123-7.
2. Shalabi RI, Ayed AK, Amin A. 15 years in surgical management of pulmonary hydatidosis. *Annals Thoracic Cardiovascular Surg*. 2002;8(3):131-4.
3. Erdogan A, Avten A, Kabukch H. One stage transthoracic operation for the treatment of right lung and liver hydatid cysts. *World J Surg*. 2005;29(12):1680-6.
4. Mingbai WU, Liwei Z, Zhongxi Q. Surgical treatment for thoracic hydatidosis: review of 1230 cases. *IOSR*. 2005;118(19):1665-7.
5. Akhtar J, Khan NA, Baneen U. Giant pulmonary hydatid cyst mimicking elevated diaphragm: a diagnostic dilemma. *IOSR*. 2012;11(2):122-3.
6. Goel MC, Agarwal MR, Misra A. Percutaneous drainage of renal hydatid cyst: early results and follow-up. *Br J Urol*. 1995;75:724-8.
7. Kune GA, Morris DI. Hydatid disease in: Schwasyz and Ellis, eds. *Maingot's Abdominal Operations*, 9th edn. Appleton and Lange; 1989:1225-40.

Cite this article as: Anand K, Bansal V. Left lung and liver hydatid cyst: managed in single surgery. *Int Surg J* 2020;7:2785-8.