

## **Ruptured hydatid cyst of lung.**

**Mandeep Singh Khurana, Gursharan Singh Narang, Kulwant Singh Ded, Loveleen Kaur**

Department of Paediatrics. Department of Surgery, Sri Guru Ram Das Institute of Medical Sciences and Research, Vallah, Amitsar, India.

### **Abstract**

**A 14yr old boy presented to us with complaints of cough associated with expectoration since 15 days and fever since 10 days. Chest X-ray and CT scan was done which showed ruptured hydatid cyst in right lung. Rupture, with an incidence of 49%, is the most frequent complication of pulmonary hydatid cyst.**

**Keywords:** Hydatid cyst., lung, X-ray, CT Scan

*Accepted May 23 2012*

### **Introduction**

This is a case of 14yr old male who presented with fever, cough, vomiting and respiratory distress. After investigating it was diagnosed as a case of ruptured hydatid cyst of lung. Patient was treated with albendazole and surgical resection was done uneventfully.

### **Case report**

A 14yr old boy presented to us with complaints of cough with expectoration since 15 days, fever since 10 days which was high grade associated with chills. Fever was intermittent, recurrent in nature. There was history of vomiting since 10 days which was non projectile. Child also had complaints of difficulty in breathing in form of increased rate of breathing and also complaints of pain in right lower zone of chest.

On examination child was febrile, respiratory rate was increased. On chest examination bilateral air entry was present but decreased on right lower zone and bronchial breathing was present in right lower zone. On abdomen examination liver was just palpable 2cm below costal margin. Rest systemic examination was normal. On routine investigations child was found to have low haemoglobin, counts were mildly raised and ESR was raised to 80mm/hr. Chest X-ray done showed hydropneumothorax with underlying collapse seen in right hemithorax. Patchy consolidation seen in left lung parenchyma. Next we went for CT-abdomen which showed large right intraparenchymal cavity communicating with the right upper lobe bronchus ruptured into the pleural cavity, resulting in gross pleural

effusion with floating membranes and air fluid levels s/o pulmonary hydatid cyst ruptured into the pleural cavity.

Child was started on albendazole therapy pre operatively, and then was taken up for surgical removal of cyst. Thoracotomy was done and cyst was removed and child was given full course of albendazole. The chest tube was kept insitu for about 15 days and removed after the lung expanded well.

### **Discussion**

Hydatid disease due to *Echinococcus granulosus* endemic in cattle-and sheep-raising regions of the world such as Central Europe, the Mediterranean countries, the Middle East, South America, Australia, New Zealand, and South Africa.<sup>(1-3)</sup> The incidence of cystic echinococcosis in endemic areas ranges from 1-220 cases per 100,000 inhabitants, while the incidence of alveolar echinococcosis ranges from 0.03-1.2 cases per 100,000 inhabitants, making it a much more rare form of echinococcosis. Although hydatid cysts are known commonly to affect the liver and lung, our experience with this series shows that it can also affect the brain, heart, kidney, ureter, spleen, uterus, fallopian tube, mesentery, pancreas, diaphragm, and muscles. Brain involvement, which is more commonly seen in children, is encountered in 1-2% of the patients and the cysts are usually solitary and have an intraparenchymal localization.<sup>(2)</sup> Cardiac involvement with echinococcosis is uncommon (0.02%-2%); the left ventricular wall is the most frequent site, but the interventricular septum, right ventricle and left or right atrium may also be involved with varying degrees of complications. Major complications of cardiac hydatid disease result from

rupture of the cyst either into the heart or pericardium and death may occur subsequent to anaphylactic shock, cardiac tamponade and systemic or pulmonary hypertension<sup>(4,5)</sup> Contrary to adults, incidence of involvement is equal in lung and liver (41% and 43%). Combined lung and liver involvement is more frequent in children than adults(16% vs. 4%).<sup>(6,7)</sup> Pancreatic involvement has been reported in 0.25—0.75% of adult cases and the mode of infestation is presumed to be haematogenous, although local spread via the pancreatic or bile ducts has been suggested, as well as peripancreatic lymphatic invasion.<sup>(3)</sup> Pre-operative diagnosis of hydatid cysts of the pancreas may be difficult, because it may be confused with pseudopancreatic cyst adenocarcinoma and true congenital and post-traumatic pancreatic cysts.<sup>(8)</sup>

The treatment of hydatid cysts is principally surgical. However, pre- and post-operative 1-month courses of Albendazole and 2 weeks of Praziquantel should be considered in order to sterilize the cyst, decrease the chance of anaphylaxis, decrease the tension in the cyst wall (thus reducing the risk of spillage during surgery) and to reduce the recurrence rate post-operatively [1,9]. Intra-operatively, the use of hypertonic saline or 0.5% silver nitrate solutions before opening the cavities tends to kill the daughter cysts and therefore prevent further spread or anaphylactic reaction<sup>(9)</sup> Even though mortality directly due to echinococcosis is very low, it can produce a very disabling morbidity. A mortality rate between 0.29 and 0.6% has been reported [10]. *Echinococcus granulosus* can affect any organ in the body and a high suspicion of this disease is justified in any cystic neoplasm of any organ, especially in endemic regions

Rupture, with an incidence of 49%, is the most frequent complication of pulmonary hydatid disease. Communicating rupture occurs when the cyst contents escape via bronchial radicles which are incorporated in the pericyst. Rupture of the hydatid cyst into the bronchus occurs due to the degeneration of the membranes and manifests as coughing and expectoration of a large amount of salty sputum containing mucus, hydatid fluid, and rarely fragments of the laminated membrane. Thereby, solid remnants of the collapsed parasitic membrane are left in the cavity.

In pulmonary hydatid disease, the radiological signs are usually precise contrary to the clinical presentation. The appearance of a pulmonary hydatid cyst may change secondary to perforation which necessitates further use of

CT. Endocyst detachment associated with rupture is seen as a floating membrane within the cyst by CT. Characteristically, the crumpled endocyst membranes floating freely on the surface of the remaining cyst fluid after the complete collapse results in a convex serpinginous margin at the air-fluid level, an appearance known as “water lily sign” or “floating lily sign”.



**Figure 1.** Chest X –ray AP view showing cyst in the right lower zone.



**Figure 2.** Chest X ray Rt lateral view showing hydatid cyst

## References

1. Goel MC, Agarwal MR, Misra A. Percutaneous drainage of renal hydatid cyst: early results and follow-up. *Br J Urol* 1995; 75: 724-728.
2. Altinors N, Senveli E, Donmez T, Bavbek M, Kars Z, Sanli M. Management of problematic intracranial hydatid cysts. *Infection* 1995; 23: 28-287.
3. Brown RA, Millar AIW, Steiner Z, Krige JEJ, Burkimsher D, Cywes S. Hydarid cyst of the pancreas: a case report in a child. *Eur J Pediatr Surg* 1995; 5: 121-124.
4. Alehan D, Celiker A, Aydingoz U. Cardiac hydatid cyst in a child:diagnostic value of echocardiography

- and magnetic resonance imaging. *Acta Paediatrica Japonica* 1995; 37: 645-6477.
5. Unal M, Tuncer C, Serce K, Bostan M, Erem C, Gokee M. A cardiac giant hydatid cyst of the intervenmeular septum masquerading as isebemic heart disease: role of MR imaging. *Acta-Cardiol* 1995; 50: 323-326.
  6. Schwartz SI. Liver. In Schwartz SI, Shires GT, Spencer FC, Daly JM, Fischer JE, Avbrey CG. Principles of surgery. 7th ed, New York, McGraw-Hill 1999; p. 1403-1405.
  7. 18. Little JM. Hydatid disease. In: Morris PJ, Malt RA. Oxford textbook of surgery. 1st ed, New York, Oxford University Press 1994; pp: 2507-2511.
  8. Lemmer ER, Krige JE, Price SK, Girdwood All. Hydatid cyst in the head of the pancreas with obstructive jaundice. *J Clin Gastroenterol* 1995; 20: 136-138.
  9. Kune GA, Morris DI. Hydatid disease In: Schwasyz & Ellis, eds. *Maingot's Abdominal Operations*, 9th edn. Appleton & Lange, 1989: 1225-1240.
  10. Chen WQ. Surgical management of complicated pulmonary hydatidosis. *Chung-Hsoa-Wai-Ko-Tsa-Chih* 1992; 30: 216-217.

**Correspondence to:**

Gursharan Singh Narang  
Department of paediatrics  
Sri Guru Ramdas Institute of Medical  
Sciences and Research  
Vallah, Amritsar  
India.