



Thoracoscopic treatment of pulmonary hydatid cyst in a child

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Abstract Hydatid disease has a wide geographic distribution around the world. In human, the lungs are the second most commonly affected sites. Pulmonary hydatidosis is much more frequently encountered in children than in adults. Surgical treatment has remained the standard option in the management of hydatid disease. However, surgeons were able to replicate the principles of conventional surgery using minimally invasive techniques. Herein, we report a case of pulmonary hydatid cyst in a 9-year-old girl treated successfully using the thoracoscopic approach.

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Hydatid disease is endemic in several Mediterranean countries [1]. It can involve any organ with the liver being the common site, followed by the lungs [2]. In children, small hydatid cysts of the lungs respond favorably to the medical treatment with oral administration of certain antihelminthic agents. Surgery either by thoracoscopy or thoracotomy is the standard option for the treatment of large cysts that cannot be evacuated by expectoration after medical treatment. All stages of the surgical treatment of hydatid cyst of the lung can be easily accomplished by thoracoscopy, with less morbidity and early recovery. This report describes our successful thoracoscopic approach in treating a 9-year-old girl with pulmonary hydatid cyst.

1. Case report

A 9-year-old girl with a 5-day history of cough, shortness of breath, and chest pain was referred to our pediatric surgery team. On clinical examination, there was a decreased air entry on the left side of the chest, with dullness and crepitations. Investigations revealed a normal complete blood count, an elevated erythrocyte sedimentation rate, and a negative indirect hemagglutination test. A chest radiograph showed an oval cystic lesion with air fluid level along the oblique fissure (Fig. 1). Computed tomography scan confirmed the cystic nature of this lesion, though it was not clear if it is parenchymal or pleural in origin; therefore, encysted empyema was suggested (Fig. 2).

2. Technique

The patient was put in a full right lateral decubitus position with a double lumen intubation. Three 5-mm

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Fig. 1 Chest postero-anterior. Oval homogenous soft tissue with well-defined outline and air-fluid level. No other satellite lesions.

cannulas were placed at the left side of the chest in a triangular fashion anterior to the mid axillary line. A 5-mm 30° telescope was introduced through the middle port. The other ports were used for dissections. The left lung was initially decompressed using insufflation 4 mm Hg but was found unnecessary in the procedure owing to the use of a double lumen endotracheal tube. The exocyst was opened using a ligasure, the hypertonic saline was injected, then the endocyst was excised and extracted using a 10-mm endobag that was introduced through the lower port site. A partial excision of the exocyst was performed using the same ligasure. A small air leak was left without suturing. A chest tube was placed through the lower port site.

She had an uneventful postoperative course. A small air leak was resolved within 2 days, and the chest tube was removed on the fifth day postoperatively. Eight months later, she was free of symptoms with no recurrence on chest

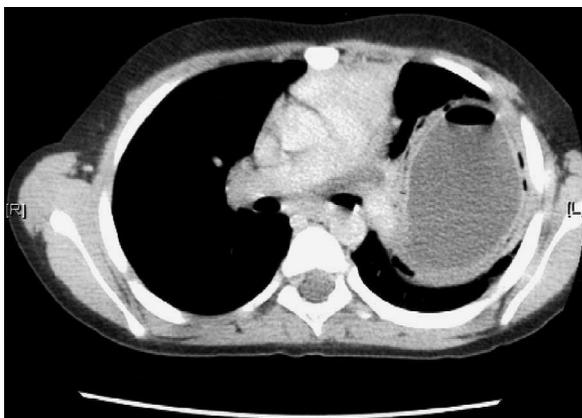


Fig. 2 Enhanced computed tomography chest mediastinal window. Large oval cystic mass lesion with air-fluid level and wall enhancement. Tiny air pockets are seen around it. Intramural.

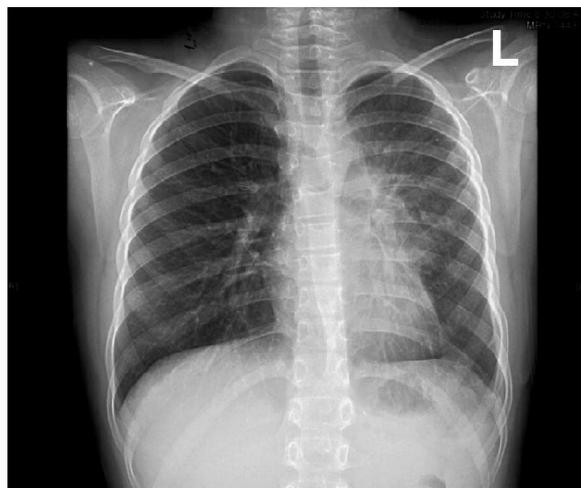


Fig. 3 Chest PA. The lungs are well aerated. Haziness around the left hilum is owing to postoperative changes. No residual lesion is seen.

x-ray (Fig. 3). She received 3 courses of albendazole starting immediately after surgery.

3. Discussion

The conventional treatment of hydatid cysts in all organs is surgical. Medical treatment with benzimidazole compound (albendazole) is also effective in properly selected patients. The response of the therapy differs according to age (children and adults), cyst size, cyst structure (presence of daughter cysts inside the mother cysts and thickness of the pericystic capsule allowing penetration of the drugs), and localization of the cyst. In children, small cysts with thin pericystic capsule localized in the brain and lung respond favorably. Percutaneous therapy in the form of puncture, aspiration, injection, and reaspiration is another option to treat hydatid disease, but the need for prolonged hospital stays or repeated visits and development of complication such as spillage and abscess formation have limited its widespread use [3].

In adult, some authors have reported the successful use of thoracoscopic procedures for the treatment of pulmonary hydatid disease [4-6]. In pediatrics, only 2 similar reports were found: one in the French literature [7] and the other in the English literature [8]. Both have confirmed the feasibility of the thoracoscopic approach in children with pulmonary hydatid cysts. It follows the same principles of the open technique, which include sterilization of the cyst with scolicidal agents (eg, hypertonic saline), complete excision of the endocyst, and closure of bronchial fistula, if present.

In our case, we did not close the fistula because the patient showed a transient degree of increased airway pressure and desaturation, which was found to be owing to increased secretion in the right side of endotracheal tube.

It is our impression that thoracoscopic management of pulmonary hydatid cyst is safe, offers the advantages of less pain, rapid recovery, less short- and long-term morbidity, and good cosmesis.

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