Parenchyma Preserving Surgery in Giant Hydatid Cyst of Lung: A Case Report

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ABSTRACT

Cystic echinococcosis (CE) is parasitic infestation characterized by the development of cyst as a consequence of the parasitization of humans by the larval stages of cestode Echinococcus granulosus. We present a case of 66 years old man who presented with a history of dry cough, mild fever and occasional shortness of breath for 1 year, which was gradually progressive with no history of chest pain or weight loss. Chest x-ray revealed a well-circumscribed homogenous opacity in the right hemithorax. Computed tomography (CT) of the chest revealed a large cystic lesion 18x15x14 cm in the right hemithorax involving the whole of the right lower lobe and causing compression atelectasis of the middle lobe. The patient underwent lung preserving surgery with cystectomy and capotionnage. The patient was discharged on the 6th postoperative with a good clinical and radiological outcome. This case report highlights that lung-preserving surgery can be performed in giant hydatid cysts with a good outcome.

INTRODUCTION

Human echinococcosis, also called hydatid cyst, is a zoonotic disease caused by a parasitic infestation of Echinococcus Granulosus more commonly occurring in the liver in adults followed by the lungs, but in children, the lung is the predominant site.1 Giant hydatid cysts of the lung are defined as cysts measuring 10 cm or more, though there is no universally accepted definition of a giant hydatid cyst.2 It is more common in adolescents and children above 10 years as the immature immune system and higher elasticity of the lung tissues allow more rapid growth of the cyst unlike in our case. Giant hydatid cysts develop more grave symptoms so surgical intervention should be sought as early as possible.3 Here, we present the successful management of a huge pulmonary hydatid cyst with lung-preserving surgery.

CASE PRESENTATION

A 66-year-old man was referred to our center with complaints of dry cough, mild fever and occasional shortness of breath for one year, which was gradual, with no history of chest pain or weight loss. Previously he was being treated in another hospital, for a case of pneumonia/respiratory tract infection. After the initial chest X-ray and CT chest, it revealed a large homogenous opacity in the right hemithorax, measuring 18x15x14 cm, and suspected to be an encysted empyema.
thoracic or hydatid cyst of the right lung. Later, the patient was admitted to our CTVS department. Additional clinical examination showed an impaired percussion note and diminished air entry over the right hemithorax. The chest X-ray was repeated and showed a very large, dense homogenous opacity occupying the right hemithorax. The case was reviewed with the radiology department with chest x-ray and CT and further with ultrasound of the right chest and we concluded it to be a giant hydatid cyst. The patient underwent parenchyma-preserving surgery, without intraoperative spillage.

Figure 1: Chest X-ray showing opacification in the right hemithorax.

Approached through standard right posterolateral thoracotomy, cystotomy and capitonnage were done, and approximately 2 liters of fluid was aspirated. Prevention of intraoperative spillage was achieved by placing a gauze soaked with a povidone-iodine solution. The postoperative recovery was uneventful and was discharged on the 6th postoperative day with a 4-week course of albendazole for 3 months with 14 days intervals in between.

DISCUSSION

CE is a zoonotic parasitic disease caused by Echinococcus Granulosus with a global existence. The lungs are the second most common site for hydatid cysts after the liver. Patients with hydatid cysts are usually asymptomatic for longer as the cyst grows slowly. Non-complicated hydatid cysts are usually discovered incidentally during routine chest x-rays for complaints other than chest diseases whereas giant hydatid cysts and complicated cysts are usually symptomatic. The patient commonly presents with compression symptoms such as shortness of breath, cough, fever, chest pain, hemoptysis and anaphylactic shock though rare presentation (seen in cases of rupture to the pleural cavity). Diagnosis is common and easy in endemic areas suspected with the presence of a cystic lesion in the lung with a history of exposure to sheep and dogs. Conventional X-ray, computed tomography (CT), and magnetic resonance imaging (MRI) of the lungs are the various modalities useful in the diagnosis of thoracic hydatid cysts. Though the role of ultrasound in thoracic hydatid cyst is limited, unless the cyst is close to the chest wall, but in our case, it was helpful as the thick wall with hydatid sand was seen which drew us close to the diagnosis. CT scan not being mandatory for diagnosis, but in the case of a giant cyst, it allows to specify the size and extent of the cyst in the lung parenchyma. However, complicated hydatid cysts constitute diagnostic challenges in imaging, and the per-operative exploration is the only one that provides a final diagnosis. In the aspect of treatment, surgery provides the best option for the treatment of pulmonary hydatid cysts. The most common procedure for the
management of lung hydatid cysts is cystotomy with capitonnage, in addition to meticulous suturing of the communicating bronchioles.\textsuperscript{13}

**Figure 3:** Chest X-ray on day of discharge, 5th POD

Administration of albendazole with a dose of 10 mg per kg of body weight for three courses of 28 days each, with a rest of 2 weeks in between is also recommended.\textsuperscript{14} Although it is well accepted in the literature that parenchymal resections should be reserved as the last resort options, sometimes segmentectomy and even lobectomy may be inevitable.\textsuperscript{15}

**Figure 4:** Follow up Chest X-ray, 1 week after discharge

In cases of giant hydatid cysts, postoperative complications are frequently seen such as prolonged air leak and atelectasis, but no such event occurred in our case. Parenchyma-preserving procedures should be preferred in favorable cases, believing that underlying lung parenchyma beneath the cyst is healthy and might expand postoperatively.\textsuperscript{16,17} Though there may not be a fair expansion of the remaining lobe at the time of surgery if there is no air leak then gradual expansion is expected later on.\textsuperscript{17}

**CONCLUSIONS**

Surgical management with parenchyma-preserving surgery is always preferable in lung hydatidosis regardless of the size.

**REFERENCES**


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