Case Report

Necessity of Lung Resection in Neglected Cases of Pulmonary Hydatidosis

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In pulmonary hydatid disease, lung resection is not a desirable treatment. Two young boys, aged 9 and 15, presented at our institution, the 9-year-old with a destroyed lung as the result of a delayed diagnosis of a giant cyst; the second with a massive hemoptysis as the result of preoperative albendazole use. Both children underwent a lobectomy for the treatment of pulmonary hydatidosis. Delayed diagnosis and use of albendazole, respectively, were considered the causes necessitating lung resection in these cases of giant and complicated pulmonary hydatid disease. (Ann Thorac Cardiovasc Surg 2010; 16: 187–189)

Key words: hydatid disease, Echinococcus granulosus, lobectomy, hemoptysis

The standard treatment for pulmonary hydatid disease caused by Echinococcus granulosus is parenchyma-preserving surgery. In the 2 patients with pulmonary hydatid disease described herein, a delay in diagnosis and prior treatment with albendazole led to the need for a lobectomy because of destroyed lung tissue and repetitive hemoptysis. If incorrectly treated or diagnosed, a pulmonary hydatid cyst may be catastrophic in younger patients.

Case 1: A 9-year-old boy was referred to our clinic for evaluation of weakness and coughing. A chest wall deformity was present on the right chest and had been observed to increase during the prior 10 months. A chest radiograph demonstrated a large opacity, and a thoracic computed tomography scan revealed a 16 × 20 cm cystic lesion occupying 90% of the right lung (Fig. 1). The patient underwent a right inferior lobectomy because the lobe had been destroyed. Microscopically; the irregular cysts have laminated membrane and scolexes, and are surrounded by a fibrous granulation wall that contains neutrophils and eosinophils that demonstrated an Echinococcal cyst (Fig. 2). His postoperative course was uneventful. On the sixth postoperative day, he was discharged and instructed to use albendazole (10 mg/kg/day). At a 12-month follow-up, the disease had not recurred, and the patient's chest wall deformity had completely healed.

Case 2: A 15-year-old boy was referred to our clinic for evaluation of a cystic lesion in the upper lobe of the right lung (Fig. 3a). His history was significant for a productive cough, weakness, and fever of 6 months' duration, which, although mild at the outset, had intensified during the prior 3 weeks. His medical history was significant because he had received albendazole treatment lasting 2 months for suspected hydatid disease 8 months earlier. A diagnosis of complicated perforated hydatid cyst was made (Fig. 3b), and an elective operation was planned. However, massive hemoptysis occurred while the child was awaiting surgery; thus the operation became urgent. The patient underwent a right upper lobectomy. His postoperative course was uneventful and no recurrence has been observed during 16 months of follow-up.

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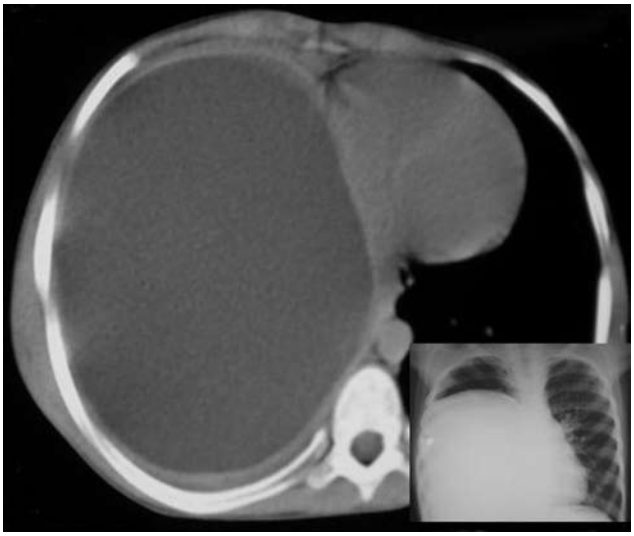

Fig. 1. Thorax CT scan shows a giant cystic lesion (44 HU) in the right lung. The hydatid cyst is not only occupying a great proportion of the right lung; it is also expanding the right chest wall.

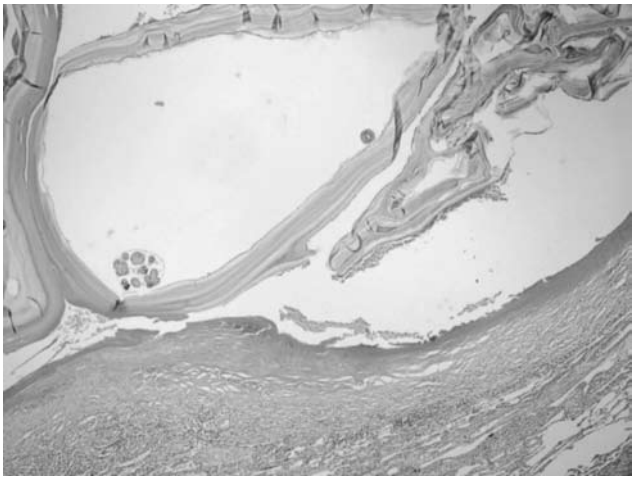

Fig. 2. Echinococal cyst; fibrous wall, laminated membrane, and scolex. (H.E. ×200)

Discussion

Primary treatment of pulmonary hydatid disease is parenchyma-preserving surgery, including cystotomy or cystotomy plus capitonnage. However, because a pulmonary giant hydatid cyst is more common in children, anatomical lung resection is more frequently performed.[1] Delay in diagnosis may result in parenchyma destruction. If there are irreversible changes in the parenchyma, lung resection may be required.[2] In our 2 patients, the parenchyma was unhealthy, and great proportions of the lobes were destroyed. Also, unusual complications of pulmonary hydatidosis, including chest wall deformity and hemoptysis, were manifest. Therefore anatomical resection was the preferred treatment in our patients. The treatments of both complicated and simple hydatid disease have some difference in surgical approach. For example; parenchyma resection may be required, but capitonnage is not recommended in complicated cysts, whereas cystotomy plus capitonnage is favorable in simple (nonruptured) hydatid disease.[3]

If a hydatid cyst is more than 10 cm in diameter, it is termed a giant hydatid cyst, and it must be treated as a clinical entity different from simple hydatid disease because of its frequent operative complications and need for prolonged care with higher costs.[4] Giant hydatid cysts of the thorax are more common in children than they are in adults.[5] In children, lung tissue possesses greater elas-

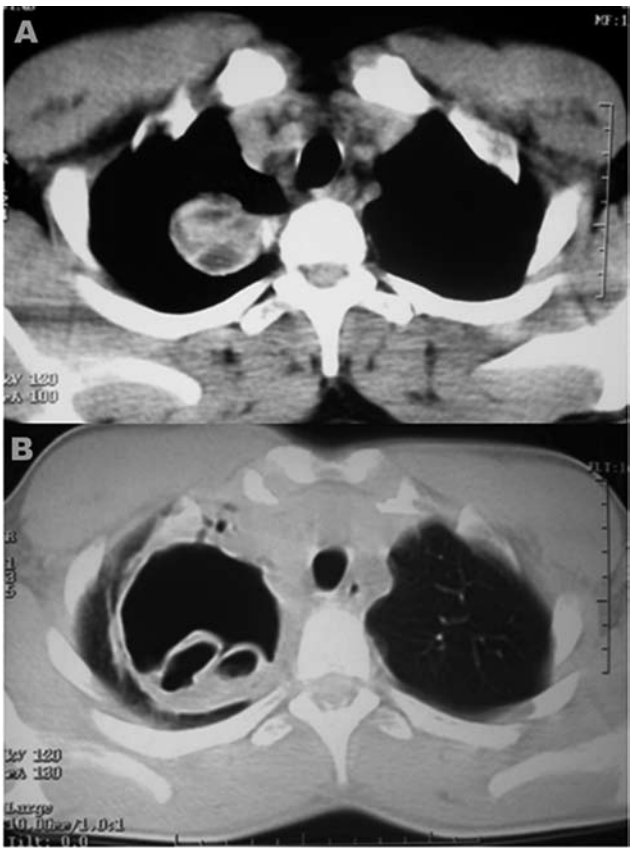

Fig. 3. (**a**) Thorax CT revealed an intact cystic lesion in the right upper lobe. This CT scan shows the hydatid disease before albendazole treatment.
(**b**) CT scan of the perforated hydatid cyst belongs to the same patient. The hydatid disease became complicated after albendazole treatment.

ticity, and because of this, diagnosis may be delayed; this may lead to an enlargement of the cyst.[6] This was true of our first patient, the 9-year-old boy. We believe that asymptomatic enlargement of the cyst led to a destruction of the lung parenchyma because the tissue was exposed to high pressure for a long time.

On clinical and radiological appearance, a complicated hydatid cyst of the thorax mimics many lung diseases. It may be diagnosed as a malign tumor or as an infectious disease, which will result in delaying the correct diagnosis and treatment. Hemoptysis is an unusual symptom of hydatid disease; however, it may be seen in complicated types of cysts, including perforated and suppurated hydatid cysts, and it may lead to destroyed lung tissue, which occurred with our second patient.[7]

Preoperative albendazole treatment is not recommended because of the higher risk of spontaneous rupture of the cyst.[2,8] In our first patient, albendazole was not used preoperatively; an early surgical approach was preferred after the hydatid cyst had been diagnosed. Despite its huge size, a spontaneous rupture of the cyst did not occur. Although not as big as the cyst in the first patient, the cyst in the second patient ruptured spontaneously resulting from albendazole treatment.

Neglected cases of pulmonary hydatid disease may lead to serious parenchyma damage in children; consequently, anatomical lung resection may be required. In children with prolonged nonspecific respiratory symptoms, physicians, especially those in endemic areas, should be aware of the possibility of pulmonary hydatid disease. If the clinician suspects hydatid disease, a computed tomography scan of the chest is needed to confirm the diagnosis and to plan treatment as quickly as possible. Preoperative albendazole treatment is not recommended because of catastrophic results.

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