

## One Stage Operation in Bilateral Pulmonary and Spleen Hydatid Cyst in Uncommon Localization

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### Abstract

**Introduction and Case Report:** The lung is the second most commonly organ which affected after liver cyst by echinococcosis and the bilateral involvement of lung is rare and Primary spleen hydatid cysts are very rare seen even in endemic country. We report the case of a 32-year-old man who presented with left thoracic and left upper abdominal pain and dry cough evolving for four months. Two homogeneous, rounded cystic lesions with enhancement located in the lower lobes of either lungs was seen in chest ct scan with IV contrast. In search of other possible cysts, an abdominopelvic CT scan with IV contrast was performed that revealed another cystic formation in favor of splenic hydatid cyst. With the diagnosis of bilateral hydatid pulmonary cyst associated with splenic hydatid cyst the patient underwent one-staged bilateral anterolateral thoracotomy with trans-diaphragmatic approach for splenic cyst. The patient has uneventful postoperative course. There are some debates about the management of bilateral pulmonary hydatid cyst. Some would choose a two-staged surgery, with an interval of three to four weeks between procedures, but others recommended an one-staged approach instead. The splenic hydatid cyst is generally rare in comparison of hepatic hydatid cysts.

**Conclusion:** Bilateral pulmonary hydatidosis associated with splenic hydatid cyst is extremely rare. Imaging investigations and especially CT scan are the best tool for diagnosis. Surgery remains the modality of choice for hydatid cyst disease.

**Keywords:** Hydatid Cyst Disease (HC); Bilateral Pulmonary; Spleen Hydatid Cyst

### Introduction

Hydatid cyst disease (HC) is a challenging health problem in some countries of world and is endemic in central Asia, Mediterranean regions, Middle East, Australia, New Zealand, South America [2,3]. (HC) is endemic in Iran [1]. Hydatid disease is a cystic parasitic infestation caused by Echinococci which are the cestode of the Taeniidae family [1].

The most frequently affected organs are liver and lung followed by brain [1]. Other organs involvement such as spleen, pancreas, heart, adrenal and muscles, soft tissue rib and mediastinum are extremely rare [1,5]. Concomitant pulmonary and spleen hydatid cyst is very

rare [3,4]. Splenic hydatid cyst is rare, especially as the isolated primary infected organ [7]. Bilateral pulmonary hydatidosis associated with splenic hydatid cyst is extremely rare [1,3]. Our interesting case has an unusual presentation of bilateral pulmonary hydatid cyst associated with splenic hydatidosis.

### Case Presentation

A 32-year-old man building worker presented with right, left thoracic, left upper quadrant pain and dry cough for four months duration without fever. Past medical history of patient was negative, Physical examination revealed slight decrease of breath sound in the basithoracic. No history of close contact or exposure with dogs or other animals had been mentioned. A chest X-ray showed opacities or cystic lesions with very limited water tones in the right and left side of two lungs (Figure 1). A further CT-scan of chest revealed the presence homogeneous, rounded fluid formations with regular, thin-walled, contours after injection of the contrast media, right and left side of two lesions was enhance. The size of cyst in right side was 88 × 98 mm on the left side was 10 × 82 mm, without any complications as rupture or abscess formation (Figure 2). An abdominal CT scan was performed to assess the cause of left upper quadrant pain and possible hepatic hydatid cyst. Abdominal CT scan show a homogeneous cystic formation of the spleen with an oval shape and enhancement. The size of spleen cyst was 10 × 6 × 7 mm and presents a close contact with the left hemidiaphragm (Figure 3 and 4). The diagnosis was mad by CT-scan and CXR, bilateral hydatid cyst of pulmonary associated with hydatid cyst of spleen location. Because of good condition of patient (power and young), Our Surgical management was in one-staged fashion by positioning patient in Semisupine and left side and starting from right side which had the largest cyst. So right lateral thoracotomy in the sixth intercostal space with cystectomy, pericystectomy and capitonnage for obliteration of remnant cavity preformed (Figure 5-7) then the herniotomy was performed and evacuation of spleen cyst and omentoplasty for obliterating of remnant cavity, splenectomy not performed because 80% of spleen was intact, diaphragm was close with nylon sutures. Chest Tube placed in left pleural space and chest wall closed The patient put in supine position next surgical procedure was right antero-lateral thoracotomy in the sixth intercostal space with cystectomy, peri-cystectomy and capitonnage for obliteration of remnant cavity as by the same procedure on the left side. The patient was discharged six day post operation with good condition on oral albendazole 800 mg per day for three course with 14 day interval (Figure 8) post- operative CXR.



**Figure 1:** Show CXR with bilateral cystic mass of two lung.

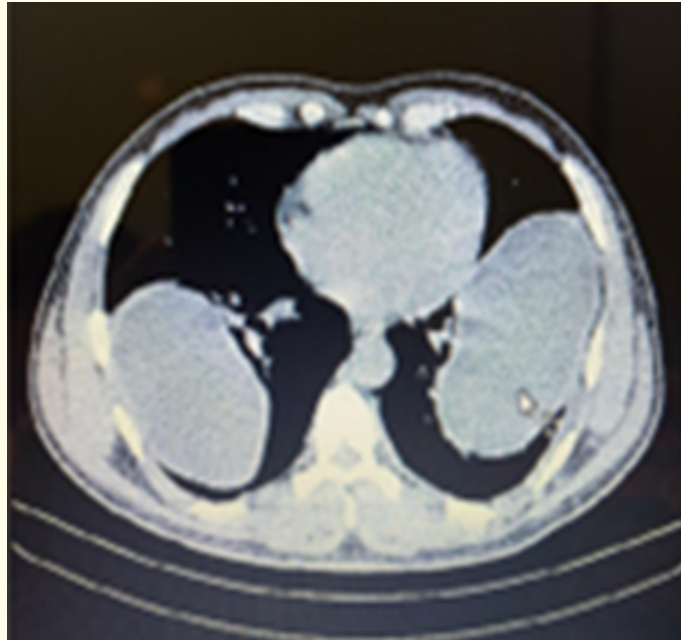


Figure 2: Show CT-scan of chest with bilateral cystic mass of two lung.

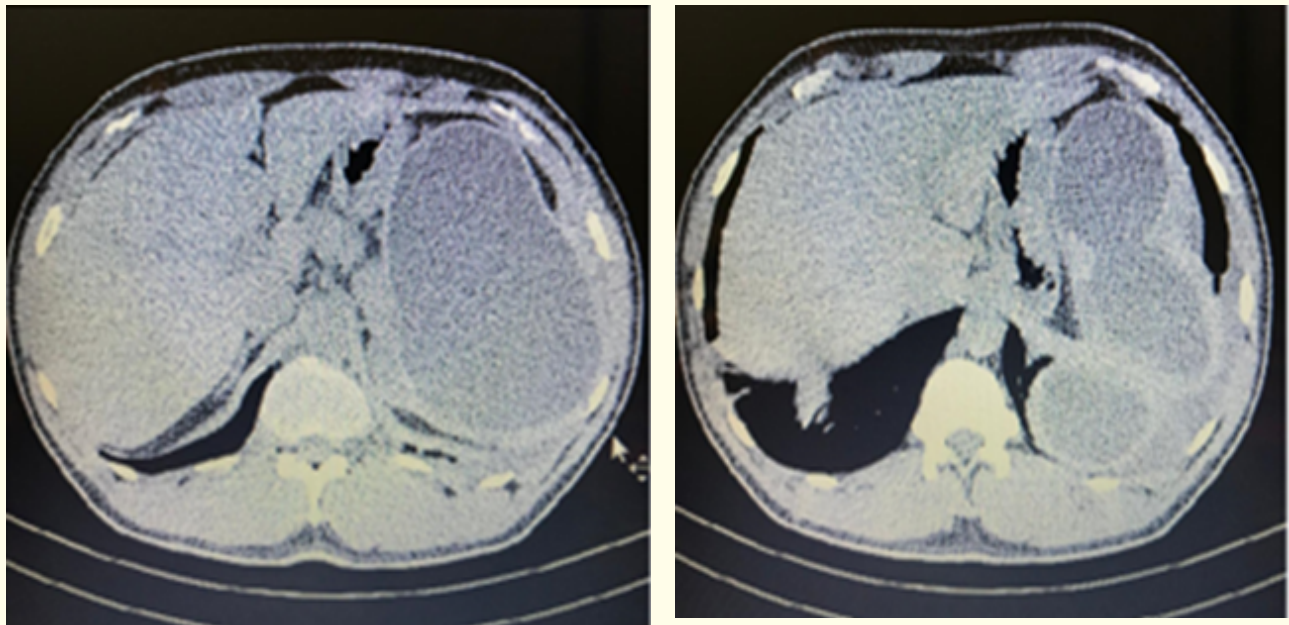


Figure 3 and 4: Show CT-scan of abdomen with cystic mass of spleen.



**Figure 5 to 7:** Show laminated membrane pericyst and fluid of cysts after aspiration



**Figure 8:** Show postoperative CXR.

### Discussion

Hydatid cyst disease (HC) is a challenging health problem in some countries of world and is endemic in central Asia, Mediterranean regions, Middle East, Australia, New Zealand, South America [2,3]. (HC) is endemic in Iran [1]. Hydatid disease is a cystic parasitic infestation caused by Echinococci which are the cestode of the Taeniidae family [1].

After ingestion of taenia eggs especially from vegetable, in the stomach the eggs loss their cutting cover of eggs and conversion to larvae stage. Larvae penetrate the mucosa of the proximal portion of jejunum and may reach through the venous system and lymphatic channels, first organ which involve is liver and second organ which infected by larvae is larvae lung and next larvae reach to any region of the body and then to transform into cysts form [6]. The most frequently affected organs are liver and lung followed by brain [1]. HC of Lung is usually unilateral. The bilateral involvement of lung is unusual with a prevalence ranging from 4% to 26.7% in endemic aria [7]. Clinically, intact HC of lung, are usually without any symptoms and diagnosis made incidentally. In some cases, as in our case, the patient may present with dry cough and chest pain. Radiological investigations are the first method for diagnosis. Chest x-ray and Computed tomography (CT) of chest are useful for detecting of pulmonary hydatid cysts cases. The chest x-ray with a sensitivity of 90% is the initial diagnostic tool in pulmonary hydatid cyst. Computed tomography of chest is useful for evaluating HC especially complicated or uncomplicated cyst and help for differential diagnoses of others cystic lesion of chest [8]. Splenic hydatid cyst is rare, especially as the isolated primary infected organ [7-9]. The range of involvement is about 2% of cases of hydatid cyst of spleen and occurs when the leave escape from liver and lung filters [7-9]. Splenic hydatid cysts are asymptomatic in 30% of patients [13]. The most common finding in splenomegaly [13,15]. Symptoms are usually non-specific and splenomegaly could present with an abdominal mass in the left hypochondrium in physical examination and less frequently in the epigastrium, and a pain that is usually a dull A pain in the lumbar, and dyspnea due to pushing up of the left diaphragm [1,2,8,10]. Splenic hydatid cysts can be diagnosed by Ultrasound and CT scans, alone or in combination in almost all cases [13].

Open surgery is still the first line treatment for pulmonary hydatid cyst. The goal is to detach the entire cyst with no injury to lung parenchyma. Management of bilateral pulmonary hydatid cyst is controversial. One-staged surgery is preferred for decreasing the morbidity, hospital stay, and cost [11]. The one-step surgery can be performed either through double antero-lateral thoracotomy or median sternotomy to reduce the cost of the intervention and avoid second general anaesthesia. In our patient we use on stage antero-lateral thoracotomy. It is mainly indicated for young, good health patient as our case [10]. Involvement of spleen is generally secondary to the rupture of hepatic, renal or intraperitoneal hydatid cysts. Generally, the diagnosis of hydatid cyst of the psoas muscle is delayed as the latter is most often time asymptomatic, but enlarged cysts may compress the adjacent organs like ureter, kidney, or vertebra; then it becomes symptomatic [13]. In our case, the patient was symptomatic. Surgery is the only curative treatment modality for spleen hydatid cyst. It can be performed either through the laparotomy and splenectomy or preservation of spleen in small cyst. Total cystectomy is not possible in most of the case, because of the adhesions between the cyst and its neighboring organs [15]. Because of good condition of patient (power and young), Our Surgical management was in one-staged fashion by positioning patient in Semisupine and left side and starting from right side which had the largest cyst. So right lateral thoracotomy in the sixth intercostal space with cystectomy, peri-cystectomy and capitonnage for obliteration of remnant cavity preformed (Figure 5-7) then the herniotomy was performed and evacuation of spleen cyst and omentoplasty for obliterating of remnant cavity, splenectomy not performed because 80% of spleen was intact, diaphragm was close with nylon sutures. Chest Tube placed in left pleural space and chest wall closed the patient put in supine position next surgical procedure was right antero-lateral thoracotomy in the sixth intercostal space with cystectomy, peri-cystectomy and capitonnage for obliteration of remnant cavity as by the same procedure on the left side. The patient was discharged six day post operation with good condition on oral albendazole 800 mg per day for three course with 14 day interval (Figure 8) post- operative CXR.

### Conclusion

Bilateral pulmonary hydatid cyst associated with hydatid cyst of the spleen is a rare entity. Radiological investigations and especially CT scan and Ultrasonography for splenic are the mainstay of diagnosis. Open surgery is still the first line treatment. We conclude one-staged surgery for bilateral hydatid cyst of lung with splenic cysts in some patients may be a good procedure.

### Bibliography

1. Manougeheer Aghjanzadeh., *et al.* "One-Stage Procedure for Lung and Liver Hydatid Cysts". *Asian Cardiovascular and Thoracic Annals* 16.5 (2008): 392.
2. DP McManus., *et al.* "Echinococcosis". *Lancet* 362 (2003): 1295-1304.
3. Mojtaba Hedayat Yaghoobi., *et al.* "Imaging features of the lungs hydatid cyst disseminated into the brain and spleen". *Radiology Case Reports* 14.8 (2019): 903-905.
4. I Ben Ismail., *et al.* "Primary hydatid cyst of the fallopian tube". *ID Cases* 20 (2020): e00790.
5. RA Agha., *et al.* "For the SCARE Group, The SCARE 2018 statement: updating consensus Surgical CAse REport (SCARE) guidelines". *International Journal of Surgery* 60 (2018): 132-136.
6. M Sarkar., *et al.* "Cystic pulmonary hydatidosis". *Lung India* 33 (2016): 179-191.
7. L Hasdiraz., *et al.* "Bilateral staged thoracotomy for multiple lung hydatidosis". *Journal of Cardiothoracic Surgery* 8 (2013): 121.
8. M Aghajanzadeh., *et al.* "Multiple and bilaterally pulmonary hydatid cystic and liver mimicking metastatic lesion from ovarian malignancy". *Journal of Liver Research, Disorders and Therapy* 4.2 (2018): 76-78.
9. Manoucher Aghajanzadeh., *et al.* "Management of pleural Complications of Lung and Liver Hydatid Cysts in 34 Patients". *International Journal of Life Sciences* 8.4 (2007): 15-19.
10. Manouchehr Aghajanzadeh., *et al.* "One Stage Operation for Five Giant Hydatid Cysts of Both Lungs and Liver in a 20-Year-Old Female". *Tanaffos* 11.3 (2012): 52-54.
11. Manouchehr Aghajanzadeh., *et al.* "One-staged anterolateral thoracotomy for bilateral lung hydatid cysts". *Annals of Tropical Medicine and Public Health* 10 (2017): 1601-1606.
12. Mohammad Sadegh Eamaeili Delshad., *et al.* "Complicated primary Hydatid Cyst in brachioradialis An extremely unusual site". *Merit Research Journal of Medicine and Medical Sciences* 4.2 (2016): 076-078.
13. Housseem Messaoudi., *et al.* "Bilateral pulmonary hydatidosis associated with uncommon muscular localization". *International Journal of Surgery Case Reports* 76 (2020): 130-133.
14. Manouchehr Aghajanzadeh., *et al.* "Diagnosis and Management of Eight Cases of Primary and Isolated Splenic Hydatid Cyst". *JSM Clinical Cytology and Pathology* (2019): 5.
15. JC Angulo., *et al.* "Primary bilateral hydatidosis of the psoas muscle". *The Journal of Urology* 161 (1999): 1557-1558.

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