

## **Ruptured Pulmonary Hydatid: a rare cause of hemoptysis and Importance of CT scan in Confirmation**

**Mohd Ilyas<sup>1</sup>, Ghanshyam Dev<sup>2</sup>, Ishtiaq A. Mir<sup>3</sup>, Ishan Gupta<sup>1</sup>, Amit Badgal<sup>4</sup>**

<sup>1</sup>Postgraduate, Department of Radiodiagnosis and Imaging, Govt. Medical College Jammu, Jammu and Kashmir

<sup>2</sup>Professor and Head, Department of Radiodiagnosis and Imaging, Govt. Medical College Jammu, Jammu and Kashmir

<sup>3</sup>Lecturer, Department of Cardiovascular and Thoracic Surgery, Govt Medical College Jammu, Jammu and Kashmir

<sup>4</sup>Medical Officer, Jammu and Kashmir Health Services

### **\*Corresponding author**

Dr Mohd Ilyas

Email: [ilyasmir40@gmail.com](mailto:ilyasmir40@gmail.com)

---

**Abstract:** We present case report of a 27 year old woman who had infected and ruptured hydatid cyst of the middle lobe of right lung with a large simultaneous non-ruptured hepatic hydatid cyst. Earliest chest radiograph suggested lung abscess but after a course of antibiotic for 10 days, the picture on chest radiograph appeared of a hydatid cyst with detached multiple endo cysts. CT features confirmed the ruptured hydatid cyst communicating with the bronchus and the complimentary upper abdomen scan revealed large hepatic hydatid cyst. The main crux of this case report is that simultaneous hepatic and pulmonary hydatidosis can occur and infected or ruptured hydatid cyst may present as expectoration or hemoptysis and can mislead on chest radiographs, so CT of the chest remains the main modality for the confirmation/evaluation of such doubtful patients.

**Keywords:** Rupture, Hydatid cyst, CT scan, air-bubble sign, bronchus, hepatic hydatid, pulmonary hydatid.

---

### **INTRODUCTION**

Echinococcus or hydatid disease is caused by larvae of the tapeworm Echinococcus. Of the various species, vast majority of the humans are infected by *E. granulosus* which causes cystic echinococcosis. The clinical presentation is often asymptomatic and non-specific. Infestation by hydatid disease in humans most commonly occurs in the liver (55-70%) followed by lung (18-35%), the two organs can be affected simultaneously in 5-13% of cases [1].

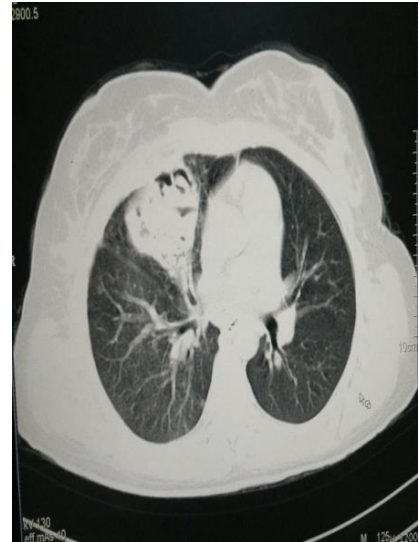
### **CASE REPORT**

A 27 year old female patient came to Medicine OPD of our hospital with the complaints of cough, hemoptysis and mild fever. On general examination, patient was stable and no respiratory distress was seen. Patient was a febrile at presentation and had no cyanosis/pallor. A chest radiograph PA view and Hb, CBC were requested. Chest radiograph revealed cavitary lesion with fluid level with surrounding consolidation (Fig. 1). Hb was 11.5 gm/dl and TLC was on higher side (15000). A diagnosis of lung abscess with surrounding consolidation was made and patient was prescribed antibiotics for 10 days. Patient condition improved after 10 days and a repeat chest radiograph was requested (Fig. 2). To the surprise surrounding consolidation had disappeared but a cavitary lesion with multiple detached endo cysts were noticed and provisional diagnosis of pulmonary hydatid cyst was

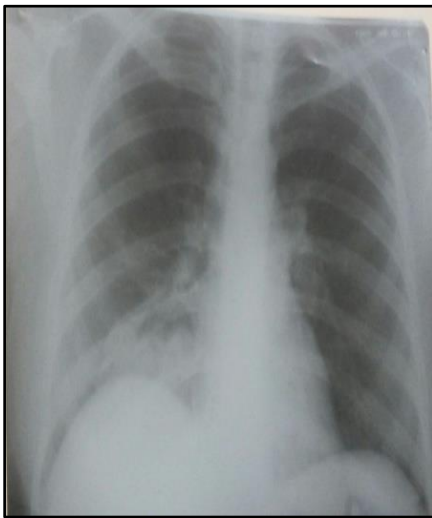
made and CT scan of chest was requested. Chest CT scan was performed using dual-slice CT scanner (Siemens healthcare, Germany) which demonstrated ill defined mass lesion with internal air bubbles in middle lobe of the right lung and communication with the bronchus was seen (Fig. 3,4 and 5). Additionally, patches of pneumonitis were seen in the upper lobe of right lung (Fig. 6). Complimentary upper abdomen CT scan revealed a large hydatid cyst of the right lobe of the liver with internal floating membranes (Fig. 7). The diagnosis with findings suggestive of ruptured hydatid cyst middle lobe of right lung with pneumonitis of right lung upper lobe with simultaneous right lobe hepatic hydatid cyst (non-ruptured), was given. The patient was referred to Cardiovascular and Thoracic Surgery Department wherein the cysts were excised and diagnosis confirmed.



**Fig-1: Chest radiograph (Before Treatment)**



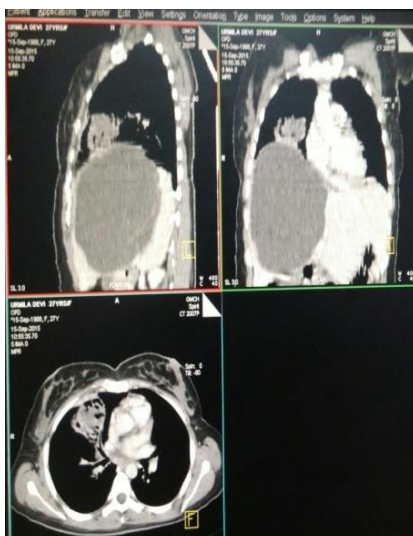
**Fig-4: Chest CT scan**



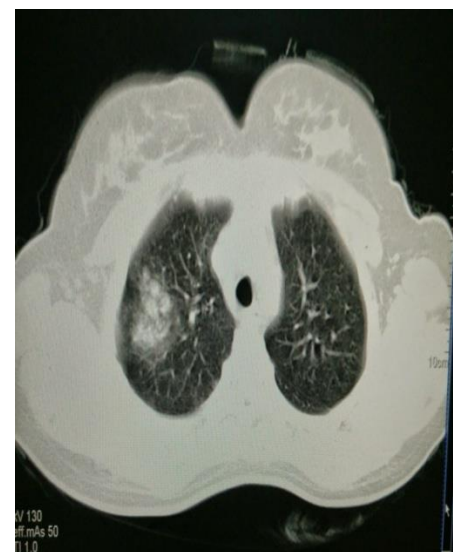
**Fig-2: Chest radiograph (After Treatment of 10 days)**



**Fig-5: Chest CT scan**



**Fig-3: Chest CT scan**



**Fig-6: Chest CT scan**



**Fig-7: Upper Abdomen CT Scan**

## DISCUSSION

Hydatid disease is one of the most important helminthic diseases and lung is the second most common involved organ. Lung may be affected when the liver is bypassed via lymphatic system [2]. Most frequent complication of pulmonary hydatid is rupture called as complicated hydatid [3]. The rupture is of three types: contained, communicating and direct. Contained rupture occurs when only the parasitic endo cyst ruptures and cyst contents are confined within the host-derived peri cyst. When cyst contents escape via bronchial or biliary radicles that are incorporated in the peri cyst the rupture is communicating. Pulmonary hydatid cyst may rupture into pleural cavity, pericardium or the bronchial tree leading to cough, chest pain and hemoptysis. The patient defines this as a salty or peppery water expectoration indicating spring water expectoration, and it may even be an expectoration of membrane particles [4]. Direct rupture is when both the endo cyst and the peri cyst tear, spilling cyst contents directly into the peritoneal or pleural cavities or occasionally into other structures [5]. CT scan is useful to confirm the diagnosis of rupture with demonstration of air-bubble sign and communication with the bronchus as in cases of complicated cyst, chest radiographs may be misleading [6].

## CONCLUSION

Hydatid cysts may occur simultaneously in the liver and lung. If infected or ruptured, it may present as hemoptysis and cough only in case of pulmonary hydatid wherein chest radiographs may be misleading. So CT is to be performed in suspected cases for the accurate localization and confirmation (air-bubble sign and communication with the bronchus on CT chest being the important leads).

## REFERENCES

1. Arora V, Snijjar I, Gill KS, Singh G; Case Report: Primary hydatid cyst of the muscle-a rare site. *Ind J Radiol Image*, 2006; 16:239-41.
2. Rebhandl W, Turnbull J, Felbeabauer FX, Tasci E, Puig S, Auer H, *et al.*; Pulmonary hydatidosis in children: results of surgical treatment. *Pediatr Pulmonol*, 1999; 27(5): 336-40.
3. Dogan R, Yuksel M, Cetin G, Suzer K, alp M, Kaya S, *et al.*; Surgical treatment of hydatid cysts of the lung: report on 1055 patients. *Thorax*, 1989; 44(3):192-9.
4. Xanthakis D, Efthimiadis M, Papadakis G, Primikiriros N, Chassapakis G, Roussaki A, *et al.*; Hydatid disease of the chest. Report of 91 patients surgically treated. *Thorax*, 1972; 27(8): 517-28.
5. Lewall DB, McCorkell SJ; Rupture of echinococcal cysts: diagnosis, classification, and clinical implications. *AJR Am J Roentgenol*, 1986; 146(2): 391-4.
6. Zeyrek D, Savas R, Gulen F, Demir E, Tanac R; "Air-bubble" sign in the diagnosis of perforated pulmonary hydatid cyst: three case reports. *Minerva Pediatr*, 2008; 60(3): 361-4.