

INTRODUCTION

Echinococcus causing simple hydatid cyst disease is often treated with anti-parasitic agents such as Albendazole, whilst complex cysts causing symptoms due to infection, haemorrhage, rupture or compression of nearby organs are often treated with surgical and medical management.

There are papers reporting pulmonary hydatid cyst disease rupturing during or after completion of Albendazole therapy, similar to the case we describe below.

CASE SUMMARY

History

- 29 male
- Syrian refugee seeking resettlement
- **Known hydatid cyst disease – liver and pulmonary (Figure 1)**
- **Treated with 1 month of Albendazole** 6 months ago in Lebanon
- Arrived to the UK and presented immediately with a **3 month history of:**
 - **Right upper quadrant pain**
 - **Fever**
 - **Coughing up salty phlegm**
 - **Weight loss**

Examination

- **Temperature 38° Celsius**
- **Tender right upper quadrant**, otherwise unremarkable examination
- There were no features of acute hypersensitivity:
 - Heart Rate 68 beats per minute
 - Blood Pressure 121/70 mmHg
 - Saturations 97% on air
 - Respiratory Rate 18 breaths per minute

Investigations

- **C-reactive Protein 313mg/L**
- **Eosinophil count 0.43x10⁹/L** (0.03-0.28)
- CXR – large cystic lesion in the left lung with an **air fluid level (Figure 2)**
- CT Thorax & Abdomen – confirmed **rupture of pulmonary hydatid cyst (Figures 3 & 4)**



Figure 1. Patients CXR in Lebanon showing a large left lower lobe pulmonary hydatid cyst, prior to starting Albendazole therapy

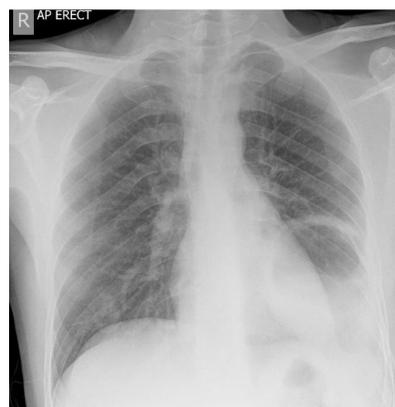


Figure 2. Patients admission CXR, showing a fluid level in the previous solid hydatid cyst, suggestive of a ruptured cyst

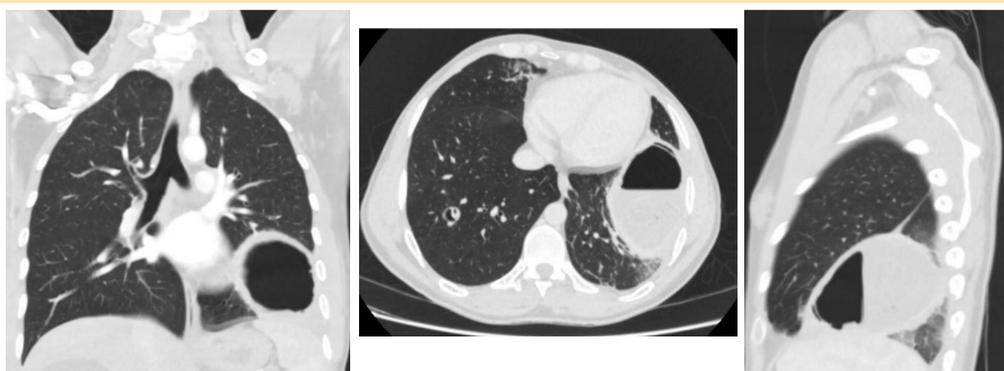


Figure 3. Patients images from CT Thorax showing a 7 x 7.4cm ruptured left lower lobe pulmonary hydatid cyst and another hydatid cyst in the right lower lobe measuring 2 x 1.9cm

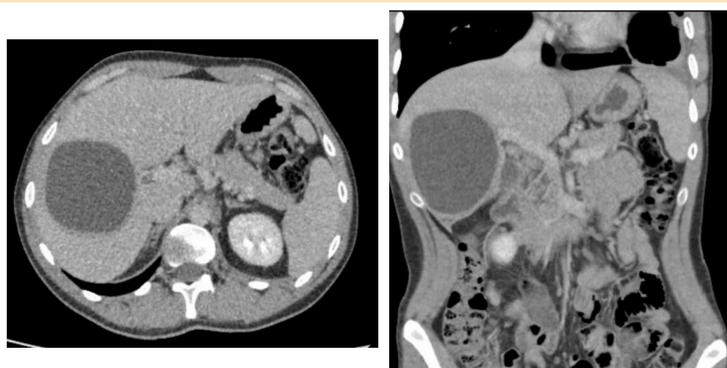


Figure 4. Patients images from CT Abdomen showing a 8.3 x 7.7 x 8.5cm hydatid cyst in the right lobe of the liver

CASE SUMMARY Continued

Further Investigations

- **Hydatid serology positive ELISA 1:155, IHA 1:640**
- Sputum microscopy and histology negative for scolices

Management

- Commenced **Albendazole 400mg BD**
- Quickly had **surgical resection** of ruptured pulmonary cyst
 - No extension of the cyst or its contents into the upper lobe or the pleural cavity
 - Cyst was removed **en-bloc with no spillage**, after being laid open and contents suctioned
 - A **communicating left bronchus into the cavity** was identified and oversewn causing obliteration of the cavity on lung re-inflation
- Histology of the cyst - **eosinophilic membranes, consistent with hydatid cyst**
- One week later he was discharged with a 3 month course of Albendazole 400mg BD and Praziquantel 2.4g weekly
- Follow-up CT scans showed (**Figure 5**):
 - complete resolution of the left pulmonary cyst
 - No interval change of the right pulmonary and liver cyst despite 3 months therapy
- Accepted for cyst resection by the liver surgeons – **MRI staging CE1 (active stage and unilocular) (Figure 6)**

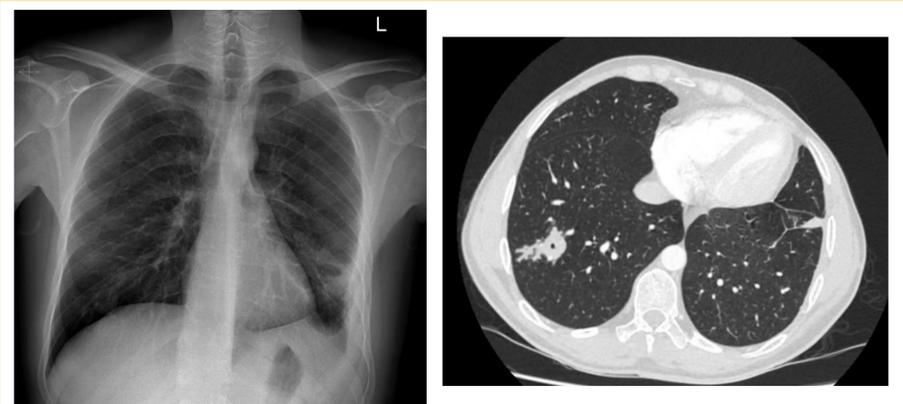


Figure 5. Patients images 3 months post surgical resection showing complete resolution of the left lower lobe pulmonary hydatid cyst

Appearance	Stage and Description	Treatment
	CE1 Simple unilocular cyst which may have shifting 'hydatid' sand on imaging	<5cm Albendazole 400mg PO BID >5cm Albendazole 400mg PO BID + PAIR
	CE3a Cysts contain liquid content and poorly defined septations	<5cm Albendazole 400mg PO BID >5cm Albendazole + PAIR
	CE2 Complex cysts with multiple septations	PAIR Contraindicated Large bore percutaneous treatment/Surgery + Albendazole 400mg PO BID
	CE3b Defined daughter cysts are contained within a mucinous or solid matrix	PAIR Contraindicated Large bore percutaneous treatment/Surgery + Albendazole 400mg PO BID
	CE4&5 Solid cysts with degenerative changes that may eventually include calcification of the outer wall	PAIR Contraindicated Observation (Imaging recommended q6mos with ultrasound preferred)

Figure 6. WHO classification for hydatid liver cysts on MRI with treatment options

DISCUSSION

Why did the patients' pulmonary hydatid cyst rupture after a course of Albendazole?

There are reports showing rupture of pulmonary hydatid cyst during or following Albendazole therapy, similar to our patient.¹

One study suggests that using albendazole reduces the tensile strength of pulmonary hydatid cyst membranes, increasing the likelihood of rupture. Therefore there have been suggestions that patients with pulmonary cystic disease should undergo operative treatment without pre-operative medical therapy to minimise complications.^{2,3,4}

Whether there is a causal link between the use of Albendazole and pulmonary cyst rupture is unclear as all the publications are small studies or case reports rather than randomised trials.

Therefore, it is unclear whether Albendazole therapy directly causes cyst rupture, however knowledge of these reports may impact future treatment choices in patients with pulmonary hydatid cysts.

REFERENCES

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