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CASE REPORT

Disseminated hydatid cyst of liver and lung

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SUMMARY

Hydatid cyst commonly affects liver followed by lung, but rarely affects both organs simultaneously. Here we presented a patient who presented with concurrent involvement of both lungs and liver. Patient presented with dyspnoea and generalised weakness with bilateral rounded opacities throughout the lung field of variable sizes. CT scan chest with contrast showed multiple rounded soft tissue density in both lungs and liver. Patient underwent mini thoracotomy which revealed multiple cystic lesions throughout lung. ELISA for anti-*Echinococcus* antibodies shows positive titres. Due to extensive involvement, patient was started on medical treatment albendazole. The patient showed significant improvement both clinically and radiographically on treatment. Thus long-term medical treatment helps in such cases where surgery is not possible.

BACKGROUND

Hydatid disease is a disease caused by ingesting larva of the parasite known as *Echinococcus*. Humans can only be infected by *Echinococcus* if they have a close contact with animals. Infection with *Echinococcus* leads to the development of cysts in various organs. Hydatid cyst can affect many organs, but liver is the most common site, followed by lungs. Least commonly involved organs include spleen, kidney, muscles and bones. Here we presented a case of 50-year-old female belonged to rural areas of Pakistan who was found to have disseminated hydatid cyst, involving both lungs and liver at the same time. Surgery is the mainstay of treatment but due to her disseminated disease she was successfully treated medically.

CASE PRESENTATION

A 50-year-old housewife from rural area presented with a complaint of a cough and shortness of breath for last 6 months. Cough was productive with no haemoptysis, associated with progressive exertional

dyspnoea. The patient took multiple antibiotics but her symptoms did not improve, rather it was progressively worsening. Patient denied weight loss, night sweats, fever and reported no change in her appetite. Past medical and surgical history was not significant. There was no history of tuberculosis (TB) contact. On examination, the patient was of normal height and built. Her cardiovascular and lung examination was unremarkable. Oxygen saturation was 95% on room air.

INVESTIGATIONS

Chest X-ray was ordered, which showed multiple rounded opacities of varying sizes in both lung fields. CT scan chest with contrast was performed which showed multiple well-defined rounded soft tissue densities in both lungs and liver, some of them also showed cavitation (figure 1A,B). Her complete blood count (CBC) showed eosinophilia, and renal and liver function were normal. To rule out malignancy, a CT-guided biopsy was ordered which was inconclusive. Patient underwent left sided mini thoracotomy with pulmonary cyst excision. During surgery, multiple scattered bilateral cystic lesions were identified; single cyst excised and sent for histopathology. Later ELISA for anti-*Echinococcus* antibodies was also sent, which showed positive titres. Histopathology showed broad capsule and scoliosis suggestive of hydatid cyst (figure 2).

DIFFERENTIAL DIAGNOSIS

1. Tuberculosis.
2. Metastatic carcinoma.
3. Primary hepatic carcinoma.
4. Liver abscess.

TREATMENT

The patient was started on albendazole 400 mg (two times a day). Due to disseminated disease, surgery was not performed, and patient was continued on medical therapy.

OUTCOME AND FOLLOW-UP

The patient gradually started getting better. After 1 year of treatment, chest X-ray showed significant improvement (figure 3). Currently, the patient is under routine follow-up without any recurrence of disease.

DISCUSSION

Hydatid cyst is particularly endemic in sheep-raising or cattle-raising rural area¹ and caused by the parasite known as *Echinococcus*. Dissemination of *Echinococcus* in the body occurs through the

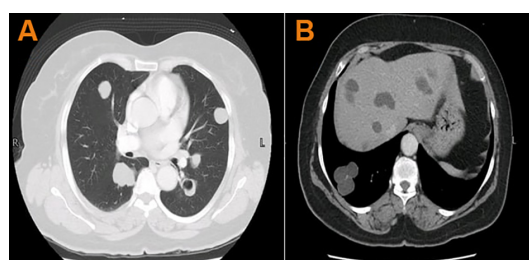


Figure 1 CT scan chest with contrast (A) showing multiple well-defined rounded soft tissue densities in both lungs, (B) lungs and liver.



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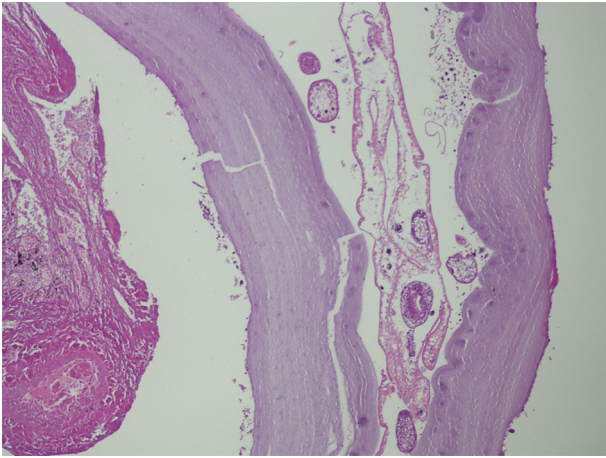


Figure 2 Histopathology of lung showing broad capsule and scoliosis of hydatid cyst (H&E stain).

bloodstream. Hydatid cyst can occur anywhere in the body but the two most commonly organs involved are liver and lungs.² Concurrent involvement of lung and liver accounts for 4% to 25% of patients with hydatid disease as depicted in the case report published by Aghajanzadeh *et al.*³ Hydatid cyst can be found as solitary or multiple in numbers.⁴ The prevalence of multiple pulmonary cysts and bilateral cysts is 30% and 4%.³ In our case, the patient was found to have multiple hydatid cysts involving both lungs and liver.

Mostly hydatid cysts found as the incidental finding and remain asymptomatic.⁵ When these cysts produce symptoms, it is due to growing cyst which encroaches the involved organ as well as nearby structures. It has been noticed that lung cysts grow much faster than cyst in another organ of the body because of negative pleural pressure.⁶ A cough, dyspnoea and haemoptysis can be the typical features of hydatid cyst affecting the lung.⁷ Hepatomegaly and abdominal pain can be the presenting features of hydatid cyst affecting the liver.⁸ In our case, the patient presented with a cough and dyspnoea without haemoptysis and abdominal symptoms.

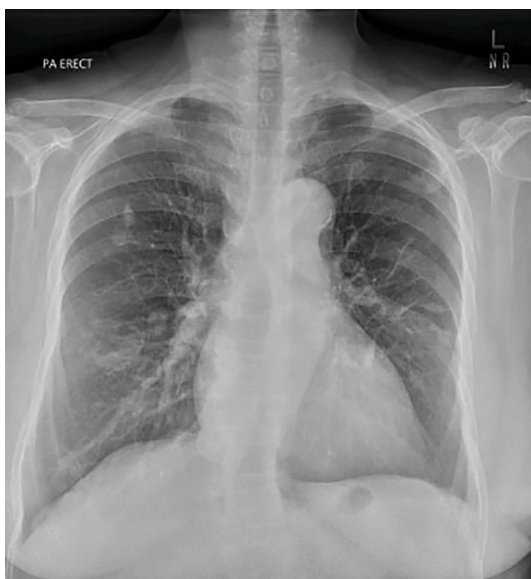


Figure 3 Chest X-ray after treatment.

Diagnosis of hydatid cyst can be established with a combination of history, physical examination, radiological evaluation, laboratory diagnosis, serological tests and histopathological assessment by using a CT-guided biopsy.⁹ The results of routine laboratory work are non-specific. Eosinophilia can be non-specific finding present in patients infected with echinococcosis¹⁰ as seen in our patient. Serological studies play an important role in the diagnosis of echinococcosis. The indirect haemagglutination test and ELISA have a sensitivity of 80% to diagnose hydatid cyst but ELISA test is also useful to detect recurrence.⁹

Hydatid cysts can be treated by surgical or medical intervention. Surgical resection is the cornerstone for the treatment of hydatid cyst of lung and liver^{11 12} and is useful for the patient where cysts cause compression due to their large size. However, medical therapy is indicated in patients with primary liver or lung cysts that are inoperable, patients with cysts in two or more organs and peritoneal cysts. In our case, our patient did not undergo surgery due to concurrent involvement of both lungs and liver. Albendazole and mebendazole are the two effective chemotherapeutic agents approved for the treatment of hydatid cysts.¹² The duration of medical treatment ranges from 3 to 6 month, and it can be prolonged without any risk of side effects of the medication.¹³ In our case, the patient was successfully treated with albendazole 400 mg (two times a day) for a year and showed sign of improvement both symptomatically and radiologically and currently under regular follow-up and on albendazole.

Learning points

- ▶ Hydatid cyst should always be kept in differential when a patient from rural or urban areas presents with the rounded opacities in lungs and liver on imaging modalities.
- ▶ Serological tests are sufficient enough to diagnose hydatid disease.
- ▶ Medical therapy is helpful in patient where cyst is inoperable.

Contributors NI performed the literature search and helped in writing the manuscript. MH wrote the manuscript. RI reported on the histopathology. MI reviewed the manuscript and the case.

Competing interests None declared.

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