

An Unusual Case of Hydatidosis with Multiple Lung Nodules Mimicking Pulmonary Metastases on Chest Radiograph

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Citation

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Abstract

E. granulosus is one of the most important helminthic pulmonary diseases and human echinococcosis is still a significant clinical problem more so in endemic areas. Hydatid cysts of the lung are often indistinguishable from a variety of other pulmonary lesions such as lung tumors. Also, pulmonary hydatid cysts are usually solitary. We present an unusual case of a 23 year old man with chest pain and dyspnea who presented with bilateral pulmonary nodules on chest radiograph due to echinococcosis that mimicked pulmonary metastases. The diagnosis of hydatidosis was suggested on CT scan which demonstrated multiple thin walled pulmonary cystic lesions and involvement of liver and spleen as well with similar lesions. During the evaluation of the bilateral multiple pulmonary masses on chest radiograph pulmonary echinococcosis must be kept in mind as a possible differential diagnosis, more so in endemic areas. CT is very helpful to characterize these types of lesions which shows their cystic nature and involvement of other body organs.

INTRODUCTION

E. granulosus is one of the most important helminthic pulmonary diseases and human Echinococcosis is still a significant clinical problem more so in endemic areas such as South and Central America, Mediterranean countries, Australia, Russia and some parts of Africa. Echinococcosis is caused by larvae of the tapeworm echinococcus. Out of the four species, the vast majority of hydatid disease in humans is caused by echinococcus granulosus which causes cystic echinococcosis¹. Echinococcus multilocularis causes alveolar echinococcosis which can be seen less frequently in humans. While human being is the accidental intermediate host in its life cycle, dogs, wolves or foxes are the definitive hosts and sheep, cattle or camels the intermediate hosts. Infected red fox has an important role in alveolar echinococcosis^{2,3}. Ingestion of water or vegetables containing ova infects humans. These ingested ova which have turned to a larval form penetrate the intestinal wall and then through mesenteric veins, they reach the liver. A few of these bypass liver to reach the lungs. They change to hydatid cysts 6-10 days after ingestion, sometimes with daughter cysts inside or outside the primary cyst. The most common organ affected by hydatid disease is liver (55-70%) followed by lungs (20-35%), where systemic spread may occur⁴.

Hydatid cysts of the lung are often indistinguishable from a variety of other pulmonary lesions such as lung tumors^{3,5}. Diagnosis of hydatid cysts may be made by serological tests or by various imaging modalities. The traditional treatment for hydatid cyst in every organ is surgery. Medical treatment with Albendazole is undertaken in non-operable cases and as an adjunct to surgical treatment in some cases.

CASE REPORT

A 23-year-old man with history of chest pain and dyspnea since 6-months was referred to the radiology department for a chest radiograph. The chest radiograph showed multiple well defined rounded nodules (canon ball like opacities) diffusely involving both lungs (fig.1). Chest radiograph interpretation suggested a few differential diagnoses with a high possibility of lung metastases. Chest and abdominal CT scan showed multiple pulmonary nodular lesions with fluid density (fig. 2). These lesions show a thin enhancing wall. One of these lesions, in right lower lobe, was ruptured with air fluid level within it. Some of the lesions were in the periphery and few in central parts of lungs, but no mediastinal lesions were noted. Also similar fluid density lesions were noted in liver and spleen (fig. 3). There was no intrathoracic or intraabdominal lymphadenopathy and the intervening lung parenchyma was normal. No other

pathology was detected. The CT appearance suggested a high possibility of hydatidosis. The Casoni and indirect haemagglutination tests were positive for echinococcosis confirming the diagnosis.

Figure 1

Fig. 1. Posteroanterior chest radiograph showing multiple nodules involving both lungs



Figure 2

Fig. 2a: Chest CT scan showing multiple well defined rounded soft tissue density nodular lesions on lung window.

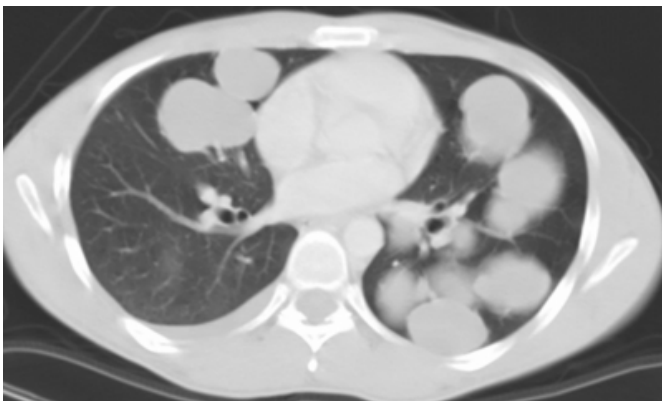


Figure 3

Fig. 2b: Chest CT scan showing cystic density lesions with thin enhancing wall on post contrast image.

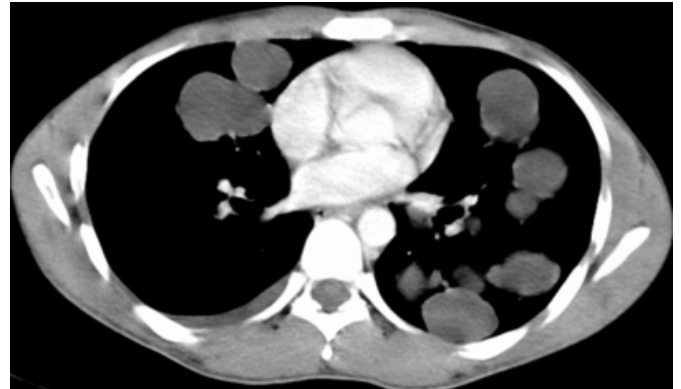


Figure 4

Fig. 2c: Chest CT scan showing multiple cystic density lesions with a ruptured cyst in right lower lobe with air-fluid level within it.



Fig. 2. Chest CT scans showing multiple well defined rounded soft tissue density nodular lesions on lung window (2a), cystic density lesions with thin enhancing wall on post contrast image (2b) and a ruptured cyst in right lower lobe with air-fluid level within it (2c).

Figure 5

Fig. 3. An abdominal CT scan showing cystic density lesions in liver and spleen



DISCUSSION

Pulmonary hydatid cysts are seen on imaging as solitary or multiple circumscribed or oval masses. However, they are usually solitary, in 72% of cases affecting one lobe⁵.

Widespread pulmonary hydatidosis is a rare condition.

Unruptured cysts are often indistinguishable from a variety of other pulmonary lesions^{6,7}. We present an unusual case resembling metastases on the chest radiography. There is a wide differential diagnosis for multiple nodules and masses with extensive pulmonary involvement on radiography, which includes pulmonary echinococcosis. The presence of pulmonary echinococcosis is often not apparent on the radiograph but can usually be distinguished on CT

scanning⁵.

CONCLUSION

Although pulmonary hydatid cysts are usually solitary, during evaluation of bilateral multiple pulmonary masses on chest radiograph, pulmonary echinococcosis must be kept in mind as a possible differential diagnosis, more so in endemic areas. CT is very helpful in characterizing these types of lesions which shows their cystic nature and involvement of other body organs.

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