

## Case Report

# Disseminated hydatid disease, both above and below diaphragm: a rare presentation

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**Received:** 21 March 2021

**Accepted:** 10 April 2021

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### ABSTRACT

Echinococcosis is a common infectious disease in middle east countries. Human being, sheep, swine and goat are in determinate accidental hosts while dog is definitive host. Liver is most common site of involvement but simultaneous affection of another organ may occur in abdominal cavity. We present a case of hydatid disease with liver, spleen and lung involvement simultaneously which is a rare presentation.

**Keywords:** Hydatid cyst, Diaphragm, Disseminated

## INTRODUCTION

Hydatid disease is common public health problem caused by *Echinococcus granulosus* or *Echinococcus multilocularis*, a cestode others are *Echinococcus vogeli* or *Echinococcus oligarthus*.<sup>1</sup> Parasitic infection is caused by larval forms of *Echinococcus*. Two hosts primarily constitutes life cycle of *Echinococcus*, definitive host are dog or other carnivorous animals and intermediate host are goat, sheep or swine. Human being is accidental intermediate host.<sup>2</sup> Egg of parasite is infective stage for human, hexacanth embryo releases in duodenum after digestion of chitinous layer, embryo enters portal circulation and reaches to liver where it forms cyst (hydatid cyst). Most common site of involvement is liver (59%-75%) followed by lung (27%), kidney (3%), bone (1-4%) and brain (1-2%).<sup>3</sup> Very few studies in literature showed involvement of other organ (spleen, peritoneum, heart, omentum, ovaries, parametrium, pelvis, thyroid, orbit and muscles) and simultaneous involvement of lung parenchyma.<sup>4</sup> We report such kind of rare presentation where hydatid cyst was seen in liver, spleen and lung.

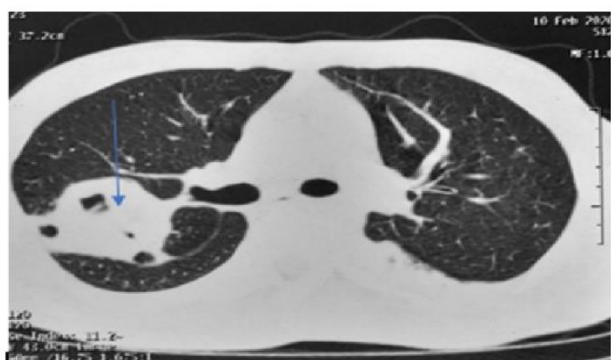
## CASE REPORT

A 24 year male presented with fever, dry cough of 15 days duration followed by chest pain and hemoptysis of 3 days. Hemoptysis was streaky, it was not significant. On examination he was conscious, vital was stable, pallor was present with hepatosplenomegaly without any lymphadenopathy, chest examination was unremarkable. Investigation showed hemoglobin 106 gm/l, WBC count was  $88 \times 10^9$ , platelets was  $209 \times 10^9$  serum electrolytes and renal functions were normal, liver function showed mild transaminitis (AST 67, ALT 86, ALP 234) and normal level of bilirubin (total serum bilirubin 0.8 mg/dl and conjugated bilirubin 0.3 mg/dl) ultrasound abdomen was suggestive of multiple cystic lesions in liver, spleen, chest X-ray showed non homogenous rounded opacity in right lung. Non contrast computed tomographic scan of chest and abdomen showed multiple hypodense areas in multiple cystic lesions of variable appearance and size, 5 cm with internal membrane and daughter cysts in liver, spleen, right lung and left lung (Figure 1-3). Hydatid serology (echinococcus IgG) was positive (34.52; normal range <8.00). The patient was initially managed with

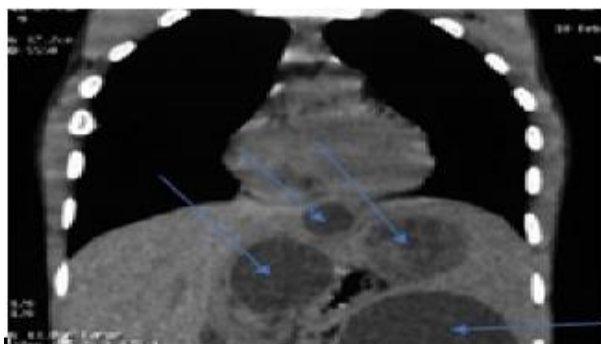
analgesics antibiotics and rest. Patient presently on albendazole therapy and being followed up after 12 weeks. Surgical consultation was obtained for lung hydatid but advised only for conservative management. After 3 months of albendazole therapy patient become asymptomatic and repeat ultrasonography revealed regression in size of lesions.



**Figure 1: Computed tomographic scan abdomen (transverse plane) showed cystic lesions (hydatid cyst with daughter cyst) in liver (downward facing arrows) and spleen (leftward facing arrow).**



**Figure 2: Computed tomographic scan showed lung parenchyma with rounded cavitary lesion in right lung (hydatid cyst).**



**Figure 3: Computed tomographic scan chest and abdomen (coronal plane) showed multiple cyst in spleen (leftward facing arrow), liver (downward facing 3 arrows).**

## DISCUSSION

Symptoms of hydatid disease are variable, depend on organ involved. Hepatomegaly, jaundice, biliary colic like symptoms, cholangitis, pancreatitis, liver abscess, portal circulation, ascites, inferior vena cava compression or thrombosis, Budd Chiari syndrome, cyst rupture, peritoneal spread and peritonitis are range manifestation and complication of involvement.<sup>5</sup> Right lobe is the most common involved part of liver. Communication or rupture of cyst lead to infection of liver, bacteria enters into cyst and inflammatory cascade ensue lead to fever and pain abdomen.<sup>6</sup> In our case cyst was present in liver (multiple in right lobe, single in left lobe) and spleen while in study of Balik et al reviewed 27 patients who were treated surgically for extrahepatic cyst.<sup>7</sup> In his study 19 patients had a coexistent hepatic cyst while 8 patient had extrahepatic cyst only located in spleen pancreas, adrenal, pancreas, mesocolon, small intestine, ovaries and retroperitoneum and omentum. In other study Wani et al reviewed 183 patients out of them 12 percent patient has extra hepatic abdominal cyst only.<sup>8</sup> When cyst present in lung parenchyma then patient present with chest pain, chronic cough, expectoration, dyspnea, pneumothorax, eosinophilic pneumonitis, pleural effusion, parasitic lung embolism and hemoptysis while in our case cyst was present in lung parenchyma right middle lobe and left posteromedial segment of left lower lobe and symptom was fever, cough and hemoptysis.<sup>5</sup> Rupture of cyst lead to secondary infection in form of pneumonitis.<sup>9</sup> Peritoneal hydatid disease due to rupture or enlargement of abdominal cyst in peritoneum and present as acute pain abdomen, due to absorption of cystic fluid into peritoneal vessels leads to anaphylaxis reaction. Although most common presentation in form of vague pain abdomen last for long duration.<sup>10</sup>

## CONCLUSION

Hydatid disease is common infectious disease but atypical presentations are equally uncommon. In disseminated hydatid variable extrahepatic as well as hepatic involvement occurs which is clear from above mentioned study. Our study makes small contribution in same. Further study for frequency of organ involvement and possible outcome are recommended.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

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**Cite this article as:** Singla N, Agrawal S. Disseminated hydatid disease, both above and below diaphragm: a rare presentation. *Int J Adv Med* 2021;8:716-8.