



## **Case Report on Hydatid Cysts with Hydropneumothorax**

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### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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**Case Study**

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## **ABSTRACT**

**Introduction:** Hydatid disease is caused by a parasite infection induced by an echinococcus tapeworm. The hydatid cyst is one recognized cause of liver mass. It is a significant pathogenic, zoonotic, and parasitic illness (acquired from animals) of humans after consumption of tapeworm eggs produced in the faeces of infected dogs. Hydatid disease is a serious endemic health concern in various regions of the world. Cystic hydatid disease is most often associated with the liver (50–70%), although it can also affect the lung, spleen, kidney, bones, and brain. A hydropneumothorax occurs gradually.

**Case Presentation:** A 35-year-old Man was taken to the Acharya Vinoba Bhave Rural Hospital with the chief complaint of abdominal discomfort, breathlessness (dyspnea) right side pain for 2 days. Approximately to the peritoneal cavity of the right chest by a hydatid cyst in the subscapular posterior part of the right lobe of the liver. For minimal ascites, a contrast study was conducted, revealing a multi-located hypodense cystic lesion spread across the abdomen was recognized as sign of hydatid disease.

**Conclusion:** In a patient with a hydatid disease, physical and psychological therapy should be put

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together. In this study, we primarily focus on professional management and outstanding nursing care, which may give the comprehensive care that hydatid cyst requires. The complete health care team works together to assist the patient to restore his or her prior level of independence and happiness after a full recovery.

**Keywords:** Liver; hydatid cyst; hydropneumothorax; herniation.

## 1. INTRODUCTION

The liver, lungs, brain, and other organs are all affected by Hydatid Cyst, a tapeworm infection. Hydatid Cyst or Hydatid Tapeworm are both names for Echinococcus Granulosus. As an adult, Cyclophyllid cestode is a hyper tape worm (also known as dog tapeworm) that lives in canids' small intestine. It is also beneficial for intermediate hosts, such as animals and people, when cystic equinococcus or hydatid disease is produced. The hydatid cyst leads the parasite to be invaded by the Echinococcus genus, which then infects the parasite with a tapeworm. The larvae of the echinococcus genera cause human echinococcosis. It is often assumed that the disease will begin years before symptoms show. The size and location of the cyst determine the symptoms and indications. Alveolar disease often begins in the liver but can spread to other organs such as the brain and lungs. Jaundice can cause stomach discomfort, weight loss, and yellow-toned discolorations on the patient's skin. Chest discomfort, shortness of breath, and coughing can all be symptoms of lung illness. Cystic sickness may be avoided by vaccinating ships and treating infected dogs. Treatment might be challenging at times. Cystic problems can occasionally be treated by draining them through the skin and then medicating them.

A case of pulmonary hydatid illness that burst and caused a hydropneumothorax is described. Radiologically, the patient had an oval opacity that grew to the size of an air crescent. The diagnosis was established by cytological investigation of aspirated pleural fluid and histological inspection of tissue discovered in the drainage tube. The patient was treated conservatively with intercostal drainage, albendazole treatment, and other supportive measures.

The illness affects around one million individuals globally and may be found in almost every country. In some areas of South America, Africa, and Asia, up to 10% of the population is affected. Approximately 1,200 individuals died as a result of the cystic type in 2015, compared to 2000 in

1990. In terms of economic expenses, the illness is expected to cost around \$3 billion each year.

## 2. PATIENT INFORMATION

A 35-year-old Man was taken to the Acharya Vinoba Bhave Rural Hospital with the chief complaint of abdominal discomfort, breathlessness (dyspnea) right side pain from 2 days. He's a peasant with a history of intermittent weight loss and fever. Four years ago, there was a previous history of joint disc issues that prompted hospitalization. There was no trace of a significant family history. The patient's family is from a working-class background. His family members have been infected with both communicable and noncommunicable diseases for a few years. With relatives, neighbors and other family members, he and his family have solid interpersonal relationship. The procedures included: CSF, Full Blood Count, coagulation profile, adenosine deaminase, blood fluid (pleural), renal function testing, liver function testing, blood sugar testing, and a micro-reported test. The thorax HRCT and the abdomen and pelvic CECT have been examined. The doctor ordered injections ceftriaxone, pantoprazole, injections Neomol, Emeset, syrup. Cremaffin, injections albumin, and tablets Albendazole.

## 3. PHYSICAL EXAMINATION

On physical examination, the patient has experienced right-sided chest discomfort. S<sub>1</sub> and S<sub>2</sub> sound can be heard in the cardiovascular system. Air and trees are bilaterally equal in the respiratory system (AEBE), pupils are reacting to light, the tone and power of both upper and lower limbs are normal. Then, as quickly as possible, treatment was beginning.

Calcification of a right upper Quade in plain abdominal x-ray images can be a suggestive indication of liver hydatid illness. The diagnosis of liver hydatid cysts is particularly sensitive to ultrasound and computed tomography. The positive of hydatid tests in both Casoni and Weinberg is 87% and 69%.

Both air and fluid occur in pleural space, hydropneumothorax is present. The symptoms are chest pain and shortness of breath, and physical tests show that the affected side is lowered in breathing tones and that the succussion is audible. Chest X-ray, better upright or decubitus is used for diagnosis.

#### 4. DIAGNOSTIC INVESTIGATION

Blood test: - Hb%-8.1gm%, total RBC count-3.13millions/cu.mm, total WBC count-13200/cu.mm, total platelet count-1.8Lacs/cu.mm. In peripheral smear RBCs- acanthocytes, platelets- Adequate on smear. No haemoparasite seen, monocytes-04%, granulocytes-85%, lymphocytes-10%. KFT: - urea-26mg/dl, creatinine-0.4mg/dl, 138mmol/L sodium, 4.3mmol- potassium. Total protein-6.2g/dl, albumin- 2.1, 1.4mg/dl, conjugated bilirubin- 0.7, nonconjugated bilirubin- 0.7 are reported in LFT patient results. CSF exam- About 1ml of pale, brilliant yellow fluid in the bulb of a clot-activator labelled Pleural Fluid has been received. RBCS=1-2 RBCS/Hpf on wet mount WBCS = 3-4 WBCS/computers. TLC = 8.38 Cells/cu.mm approximately Polymorphic DLC= 70% DLC= 70% Lymphocytes = 30%.

HRCT Thorax Print Reveals - fluid collection in the correct pleural cavity that produces atelectasis right below lobe. Because of hydatid cyst rupture. A multiple-local hypodense cystic lesion dispersed in the abdomen was identified as S/o hydatid disease. Study on contrast to minimal ascites.

CECT review of Abdo-pelvic region- Multiple daughter's cysts can be detected within a multiple cell defining hypodense cystic lesion. [1] All cystic lesions are dispersed throughout the liver, spleen and peritoneum up to pelvic [2]. Peritoneal hydatids are also present. A little hydatid cyst approximates the diaphragmatic in the subcapsular region of the right lobe of the liver in a peritoneal characteristic of the right chest of the figure. Hernia to the right causes Hydropneumothorax in several cavities.

#### 5. MEDICAL MANAGEMENT

On admission, the patient is oriented with the person and place, but after receiving treatment, he shows that his condition is not stable and an intravenous line has been placed, with prescription- injections Ceftriaxone 1.5mg BD, inj. Pantoprazole 40mg OD, inj. Neomol 100ml

TDS, inj. Emeset 4mg TDS, syrup. Cremaffin 30ml HS, inj. Albumin 10ml STAT and tab. Albendazole 400mg HS.

#### 6. SURGICAL MANAGEMENT

The drainage tube is installed. To relieve tension, the abdominal cavity is insulated with pressing in a 20% hypertonic saline solution, the cyst is punctured, and the hydatid fluid is drawn into the cyst. The cystic were then widely deroofed by the excision and evacuation of the peri cyst projection part. The residual cavity was irrigated with a scolocidal chemical. As scolocidal agents for the sterile hypertonic saline, 95 % ethanol or povidone-iodine were used. External residual drainage was performed using a wide rubber tube inserted through a stab incision and connected to a bag for gravity drainage. Tubes were removed after a few days if there was no bile leakage or discharge. For the remainder of the cavity, a portion of the omentum with a strong blood supply (omentoplastic) has been sutured to the cavity, or additional cavity walls have been connected to a series of mattress sutures or cursors that start from the ground and work outside (capitonnage). If obliterating the rest of the cavity was not possible, the Roux-en-Y cyst jejunostomy was used to create a big anastomosis between the peri cystic aperture and the jejunum. Closing connections in cystobiliary communication with fine-absorbing sutures is part of the treatment.

#### 7. NURSING MANAGEMENT

Vital signs are recorded on a regular basis. The patient's condition has remained steady. He exhibits a reaction to treatment or a response to treatment. He was checked and monitored in ward. The nurse should devote her whole attention to the hydatid cyst patient. Even if technical advancements are made, a thorough examination of the patient is still necessary. The oxygen level of the patient is kept track of. Indicators of development and stability, such as erratic breathing, stress or any changes in the patient's state, should be monitored. According to patient family members, excellent nurse care was delivered. Nurses aid the patient in regaining his or her earlier level of independence and enjoyment after a full recovery.

#### 8. DISCUSSION

A 35-year-old man admitted with the chief complaint of abdominal discomfort,

breathlessness (dyspnea) right side pain from 2 days. He was diagnosed with Hydatid Cyst with Hydropneumothorax after evaluation. The patient's family is from a middle-class background. He and his family's interpersonal relationship with family members, relatives and neighbors were similarly positive. When admitted, the patient had a temperature. After the intake of the blood, a brain fluid test, hepatitis, kids' function test, a Liver Function Test, an MRI and a CT scan were performed [3]. The treatments are given as necessary and the drugs are taken according to the doctor's instructions. The care was great and remains great until the end of my stay.

There might be a number of solitary or hydatid cysts. The cyst stage determines the outcome of the imaging. In the great majority of cases, laboratory testing indicated normal results. The diagnosis can be confirmed when images are combined with serological testing. Here's a logical? exam that doesn't have any answers: The peri cyst performs cursory or ring-like categorization. Hepatic hydatid cysts are seen in 20% to 30% of X-rays. A common ultrasound at the blizzard sign is numerous echogenic found in the patient's cell defenses during the post modification. On CT scans and MRIs, cysts frequently formed and became larger after contrast agents were injected. In comparison to the non-parasitical cyst, the low single intensity rim, which is more visible in T2 weighted images, was described as a hydatid cyst in the liver and lungs [4]. In certain equivocal individuals with negative serological testing, guided image suction on the cyst for microscopic inspection might assist establish a definitive diagnosis [5].

However, content leaking throughout the operation should be avoided. In our case, the solid component comprised a hydatid matrix including fragmented cysts, scolices, and hydatid sand [6]. On CT, the appearance of the hydatid matrix varies depending on the contents of the cystic mass and the small cyst inside it. There might be a condition called as cysteine chest aplasia. These image anomalies can be properly identified when combined with a history of residing in endemic areas [7]. Patients with hydatid cysts may be difficult to cure. Drugs such as albendazole have been used to treat hydatid cysts, but the outcomes have been mixed [8]. It has been used to reduce local recurrence after surgery as well as to cleanse the region before to surgery [9]. Percutaneous draw-up has been advocated as a non-surgical alternative to

surgery, particularly for those who do not want surgery [10]. By operation, the most efficient approach for cyst removal and full recovery was proven. Surgery [11]. The major objective of the therapy is to remove the parasite, minimize intraoperative spillage, and completely eliminate the resident cavity. The reinfestation or recurrence of hydatid cysts in the patient might be caused by hydatid liquid leaking during procedures [12].

## CONCLUSION

The hydatid cyst in the liver caused by E is the greatest clinical concern in the world. Infection with *granulosus*. However, if a cyst legion is found in any place, it must be treated immediately. It is important to remember. Knowing imagery can help in diagnosing the disease, particularly for individuals living in areas where it is endemic.

## DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

## PATIENT INFORMS CONSENT

Patient's informed consent was obtained when drafting a case report and for publishing.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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