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## Case Report

### An Unusual Multi Organ Presentation of Hydatid Cyst: A Case Report

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#### Abstract

A 35 yearold female patient presented with cough, purulent production and dyspnea. In computerized tomographic scan (CTscan), numerous cysts were observed in chest, abdomen and paravertebral muscles. Because the cysts were ruptured, surgical intervention was planned for her thoracic lesions without prior anti-parasitic medical treatment. She had no complications in short- term follow up.

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#### Introduction

Hydatid cyst is endemic in Iran [1]. This disease is primary disease of animals which transfers to human randomly. The definitive hosts of this small tapeworm (*Echinococcus granulosus*) are domestic dogs and wild canids (foxes, dingo, jackal, hyena, wolves) and its intermediate hosts are ungulates (sheep, goats, pigs, horses) herbivores and human is randomized host of this disease. This parasite mainly locates in liver and lung, and is more prevalent in children rather than adults [2, 3]. Recurrence can be decreased by administering medical treatment but operation on them leads to better results [4, 5]. For CE, consensus has been obtained on an image-based, stage-specific approach, which is helpful for choosing one of the following options: (1) percutaneous treatment, (2) surgery, (3) anti-infective drug treatment or (4) watch and wait. Clinical decision-making depends also on setting-specific aspects. The usage of an imaging-based classification system is highly recommended.

The aim of present study is to introduce an unusual case of intra-thoracic but extra-pulmonary hydatid disease which was presented in pleura, thoracic, muscles and abdomen.

#### Case Report

A 35 years-old woman visited doctor complaining of dyspnea and coughing and disposal of yellow sputum. She had felt swelling in shoulder area and had severe pain and inflation for a month, which inflation disappeared on its own and pain had been reduced. She had symptoms those of common cold and she had been firstly prescribed by antibiotics and painkillers by a general practitioner which did not reveal her symptoms. After a short period of treatment with antibiotics and pain killers, she was referred for more studies due to being not cured and not having response to treatment to surgeon. The right lung was normal in examination but the left lung had decreased breath sounds in lung base and crepitation was presented in swelling area of left scapula. Base of the lungs were clear upon percussion. In examination, there was a slight non-tender swelling under the left rib at upper left quadrant of the abdomen. Some cysts which were not in same sizes were reported in thorax and abdomen CT scan under platysma muscle and inside the left hemi-thorax which had covered the left lung totally. Also a huge cyst was reported in abdomen area under left diaphragm (Figure 1- 4). There was only 12400 leukocytosis as pathologic finding in laboratory investigations.



Figure 1. Coronal Image of Back Cysts



Figure 2. Sagittal Image of Back, Thoracic and Abdominal Cysts

She was admitted at thoracic surgery department of Tabriz Imam Reza hospital and two stages surgery was conducted on her. At the first step, she was under general anesthesia and several pockets of infectious intact and ruptured cysts were brought out by diagonal cutting on the maximum bulge and on platysma Dorsey muscles and adjacent muscles. We tried to remove all ridges from cysts by several dissections through muscle fibers, dissected ectocystic layer and destroyed parts of the muscles were brought out. Debridement and drainage were conducted on them.

In second stage which was one week after the first stage, we opened left hemi-thorax by left side posterior incision and very thick cells with high adherence to pleura were observed. First pneumolysis was conducted; and there were several pockets of infectious intact and ruptured and parenchymal cysts that were brought out individually. We cut Adventitia layers which were converted to thick cells as much as possible and dissected cyst around pericardium totally. There was a medium size cyst in base of lower lobe of the left lung which was removed totally. Cysto-bronchial openings closure was implemented on closing cysto-bronchial holes. After washing and removal of all cysts, two Chest Tubes (C.T) were placed.

She was released two weeks after the second surgery with C.T and was prescribed with Albendazole after surgery. Approximately after a month after surgery, she came for removal of C.T. The suggestion of abdomen hydatid cyst surgery was proposed selectively for about three months later. In short time observing for 3 months, she is well and there is no important problem. The originality of this case was intra-thoracic but extra-pulmonary presentation of the cyst simultaneously

with other multifocal involvement in abdomen and muscle.

### Discussion

Hydatid cyst is a parasitic disease which is known from the time of Hippocrates [6]. This disease is widespread all around the world. Its main hosts are dogs and foxes and its intermediate hosts are herbivores. Human is involved accidentally. There is no human to human transmission for this disease [1,4,5]. Human acquire primary CE by oral uptake of eggs excreted by infected definitive hosts (grooming, egg-containing feces, direct hand to mouth transfer, egg contaminated vegetable or drinking water). Hydatid cysts could be formed in all parts of human body except hair and nail that has no blood. In the case of spontaneous or iatrogenic rupture of cysts, daughter cyst, any part of body, except hair and nail, is not safe and the liquid full of scolex (there are 4 thousands scolex in one cc of cystic liquid) comes out of cyst and is replaced in adjacent organs and new cysts are created. 75% of cysts are single regional but also can be multi regional or multi organic [2]. Single regional and isolated cysts could remain without any symptom for 5-20 years [4]. Cyst rupture could lead to entrance of cyst liquid into biliary or bronchial systems [4,7,8]. Consequently serious complications could occur such as Anaphylaxis shock. Also pneumocystis and pleural effusion, pneumothorax and secondary Echinococcus in pleural and peritoneal cavities could occur [9].

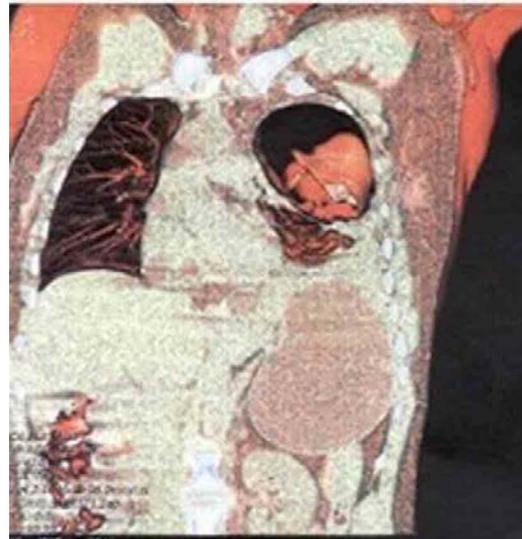


Figure 3. Coronal Image of Thoracic and Abdominal Cysts



Figure 4. Transverse Image of Thoracic Cysts

In 20 to 25% of cases double involvement of lungs is observed and sometimes pleural involvement and proliferation occurs such as the case of our patient and cysts appear in various

sizes and numbers. Also there was platysma Dorsey and abdominal muscles involvement in our patient and fortunately there was no problem despite of dorsal and pleural cysts rupture before and after surgery and surgical treatment was conducted successfully. Another interesting point in this case was that there was no relation between pleural and dorsal muscle cysts.

The prevalence of this disease is higher in children rather than adults and its infection or prevention depends on sanitation and it could be prevented easily. Generally observance of basic principles of health such as washing hands with soap after gardening or contact with dogs and also washing vegetables that could be contaminated with dog feces are very important points preventing these diseases [8, 10].

However this disease could be cured easily by surgery, it could be dangerous and threatening in the case of being complicated and as a problem that needs emergency intervention in life threatening manifestations, being informed about the management seems to be valuable in emergency departments. If surgery is conducted after taking a short course of Albendazole and Mebendazole the success level of surgery will be higher [2, 11], but it is possible to omit this stage in the case of cyst rupture. Recurrence rate of disease decreases significantly with drug treatments in periods before and after the surgery [12, 13]. Surgeons should consider such masses in their differential diagnosis. The physicians and specialist of the emergency departments should be aware of the presentations and manifestation due to critical conditions that it can cause.

### Conclusion

The originality of this case was intra-thoracic but extra-pulmonary presentation of the cyst simultaneously with other multifocal involvement in abdomen and muscle. This is an epidemic and prevalent disease that could involve different body organs separately or simultaneously and it is better for all general physicians and surgeons and thoracic surgeons to be familiar with different types of these cysts occurrence. Surgeons should consider such masses in their differential diagnosis.

**Conflict of interests:** Authors have not a financial relationship with the organization that sponsored the research. The authors declare that they have no conflict of interest.

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