

Case Report

Multiple Pulmonary Hydatid Cysts in a 14 Year Old Boy- Case ReportDr. Dinesh Reddy¹, Dr. Nitish Gupta², Dr. Vaibhav Krishna³, Dr. Vishvas pandya⁴¹Consultant, Pulmonology, Apollo hospital, Secunderabad, Hyderabad, India^{2,3}Resident Final Year, Department of Respiratory Medicine, Sumandeep Vidyapeeth University, Vadodara, Gujarat, India⁴Consultant radiologist, CIMS hospital, Ahmedabad, Gujarat, India***Corresponding author**

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Abstract: Pulmonary hydatid disease with *Echinococcus granulosus* is rare. A 14 year old boy presented to our institute with left sided chest pain, mucopurulent productive cough, fever and breathlessness. Chest x-ray and computed tomography scan revealed unilateral multiple giant cysts suggestive of hydatid cysts. With left thoracotomy both the cysts were removed and no daughter cysts were found. Histopathological examinations revealed the presence of hydatid cysts in left lung with no daughter cysts. To best of our knowledge this is the first report of unilateral multiple hydatid cysts.

Keywords: Giant hydatid cysts, lung, computed tomography

INTRODUCTION

Hydatid disease is a major health problem in the eastern mediterranean countries. A hydatid cyst is a parasitic infestation caused most commonly by *Echinococcus granulosus*. The most common location of a hydatid cyst is liver and lungs at the second place (10-40%) [1]. Food or water contaminated with eggs is the principal mode of infection whereas direct contact with dogs is implicated only rarely. Clinical presentation of hydatidosis is often nonspecific. Symptoms are due to pressure effect or by release of its contents in corresponding organs. Generally, a pulmonary hydatid cyst is diagnosed by radiological imaging, physical examination and history findings [2].

The preferable treatment for pulmonary hydatid cysts is surgery. Various surgical procedures are described in the literature. The surgical procedures may be conservative (cystostomy, enucleation of intact cysts, removal of the cyst after needle aspiration with or without pericystectomy, with maximal preservation of lung parenchyma) or radical (lung parenchyma resection with cystotomy and pericystectomy, wedge resection, segmentectomy and lobectomy)[3].

CASE REPORT

A 14 year old boy resident of Hyderabad, presented with left sided chest pain, mucopurulent

productive cough, fever and breathlessness for two months. He resides in the city with no pet dogs at home and in the neighbourhood. Chest pain was dull aching, intermittent and not relieved with analgesics. Cough was productive with mucopurulent sputum and salty taste. Fever was low grade, intermittent not associated with chills and rigors. Breathlessness was gradually progressive in nature. It was also associated with anorexia and weight loss. There was no history of haemoptysis, nausea, vomiting, pain abdomen, icterus or coughing out of cystic material. There was no history of previous treatment and admissions.

On examination pulse rate was 110/min, patient was tachypneic & respiratory rate was 34/min. Chest examination showed diminished movements and breath sounds over entire left hemithorax, on percussion dull note was present all over left hemithorax and cardiac dullness could not be elicited .

No added sounds were present on respiratory examination. Cardiovascular, gastrointestinal and neurological examinations were within normal limits.

Complete blood picture showed leucocytosis (13000/cu mm) with predominance of lymphocytes. Urine and stool examination were normal. Blood sugar and urea levels were within normal limits. Liver

function tests were normal. Sputum ZN stain revealed no acid fast bacilli.

Chest X-ray posterior-anterior view was suggestive of homogenous opacity with sharp borders in upper and mid zone of left lung. (Figure-1). Thoracic USG revealed two giant fluid filled cystic lesions in the

left upper & lower lobes of left lung. Contrast enhanced Computed tomography of thorax was suggestive of two giant spherical fluid filled cystic lesions in left upper lobe(10*8 cms) and lower lobe(15*10 cms) of left lung without any liver involvement suggestive of hydatid cyst. Hiv 1 & 2, HBsAg and Anti HCV were non reactive.



Fig-1: Chest X-ray PA view showing giant cystic lesions in left lung

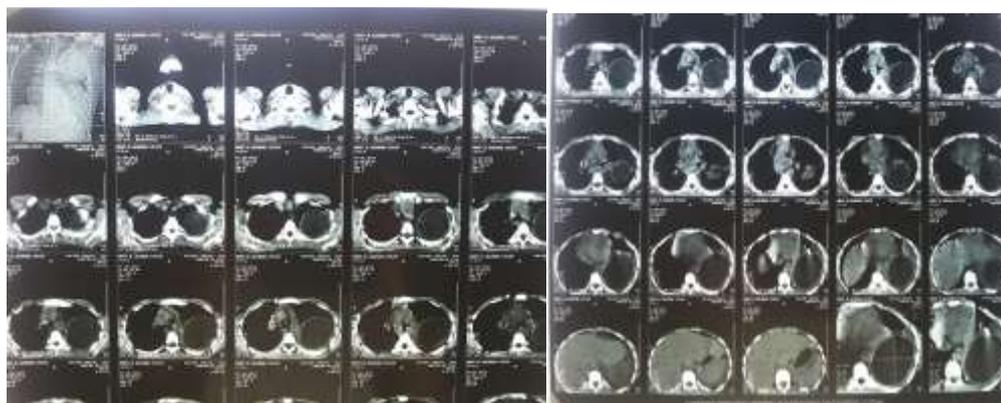


Fig-2: CT thorax showing fluid containing cystic lesions in left upper & lower lobes



Fig-3: Macroscopic appearances of laminated membranes of hydatid cyst of left lung

The patient was prepared for left antero lateral thoracotomy and operated through intra pleural approach. Two giant pulmonary hydatid cysts were found in upper and lower lobe containing clear fluid. No daughter cysts were found and surrounding lung parenchyma was compressed. Both giant hydatid cysts were excised by enucleation and marsupialisation of lung edges done. Chest tube was inserted in the left pleural cavity and chest was closed in layers. Histopathological examination of the excised giant cysts confirmed the diagnosis of hydatid cyst. Post operative phase was uneventful and post operative X-ray showed significant improvement of left lung field. On first and second month follow up the patient condition is stable.

DISCUSSION

Hydatid disease is a helminthic infection caused by *Echinococcus granulosus* and other Echinococci species. Dog is the definitive host and human being is infected only accidentally. The most common site for hydatid cyst in children is the lungs, in adults it is liver [4].

The clinical manifestations of hydatid cysts depend on the site and size of the cyst. Usually hydatid cysts of lung are small or medium in size and are hardly symptomatic. Larger cysts may manifest symptoms of compression of adjacent organs. Commonest symptoms of patients with giant hydatid cysts reported, were cough (68–83%), chest pain (37–55%) and dyspnea (52%). Other symptoms encountered were fever (15%), haemoptysis (26%). In children with giant hydatid cysts additional symptoms found were chest deformity, expansion of involved hemithorax and growth retardation. Our case presented with symptoms were fever, cough, chest pain and breathlessness. Symptoms are related to size, location and eventual rupture of the cysts [5].

Radiology is the investigation of choice for lung hydatids. The commonest finding on the chest X-ray of patients with uncomplicated giant hydatid cysts is a smoothly outlined, dense spherical opacity with a largest diameter of more than 10 cm, occupying a part or the entire hemithorax^[5,6]. In our case, dense opacity was seen in most of left hemithorax. Giant hydatid cyst of the lung is mostly seen as solitary and less commonly as multiple [5, 6].

Because of the structure of the lungs allows expansion, hydatid cysts can attain a very large size. In the studies done by Ali *et al* the finding is that there is higher incidence of pulmonary than hepatic hydatid cysts in children and adolescents. The explanation given is that; the liver is a compact organ and the hepatobiliary capsule limits the cyst growth whereas the

low resistance of lung tissue provides an excellent medium for rapid growth of hydatid cysts [7].

Lung hydatid cyst measuring more than 10 cm, in the largest diameter, is defined as giant. Giant hydatid cysts of the lung; a distinct clinical entity, can be found in adolescents and children older than ten years in comparison to adults. This predominance is explained by the immature immune system and relatively higher elasticity of the lung tissue in children and adolescents allowing rapid growth of cysts [8].

Principal mode of treatment in pulmonary hydatid disease is surgery. The current treatment is complete excision of disease process with maximum preservation of the lung tissue. Lung parenchyma saving operations is more suitable for the patients with giant cysts [9]. In our study, the two giant cysts were removed by thoracotomy along with enucleation and pericystectomy and preservation of lung parenchyma.

CONCLUSION

Hydatid cyst of lung can present with unusual clinical patterns. Our case depicts an interesting presentation in a fourteen year old boy. Unilateral, multiple, giant lung hydatid cysts had caused severe lung compromise in this case. Urgent surgical intervention was needed to save the patient. Thus from our case it is evident that hydatid cyst should be considered as a differential diagnosis of lung cysts in paediatric age group.

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