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AN UNUSUAL CASE OF PLEURAL HYDATIDOSIS

General Surgery

Dr.Manne Uma Nagamani Tejaswini M.S, Post Graduate, General Surgery, Katuri Medical College And General Hospital, Chinakondrupadu, Guntur District, Andhra Pradesh – 522019

Dr. A Sai Datta M.S,HOD , Dept of General Surgery, Katuri Medical College And General Hospital, Chinakondrupadu, Guntur District, Andhra Pradesh – 522019

Dr. K Venkata Vijay* M.S, Mch, F.I.A.C.S, Professor&HOD, Dept of Cardiothoracic Surgery, Katuri Medical College And General Hospital, Chinakondrupadu, Guntur District, Andhra Pradesh – 522019 *Corresponding Author

ABSTRACT

A 42 year old female came with the chief complaints of shortness of breath,left sided chest pain and fever since 2 months and had similar complaints since 4 years, aggravated since 2 months and was diagnosed in the past as pleural TB by doing pleural fluid aspiration cytology 2 years back and she had taken ATT for 9 months.She was investigated with chest X ray PA view and CECT chest - non homogenous opacification of left hemithorax with multiple small circular shaped cysts with collapse of left lung and mediastinal shift to right side with probable diagnosis of hydatid cyst in left hemithorax. On ultrasound abdomen,no cysts were found in the liver,spleen. Surgical treatment was planned as excision of mass/cyst under general anaesthesia.Patient was kept on oral albendazole 400mg twice daily for 6 months and regularly followed up.Thepericyst, daughter cysts were sent for histopathological examination and diagnosis was confirmed

KEYWORDS

Echinococcosis, Intrathoracic cyst, Extrapulmonary location, Thick pericyst

INTRODUCTION

Worldwide, pulmonary hydatid cyst is a significant problem medically, socially, and economically. Surgery is the definitive therapy of pulmonary hydatidosis. Benzimidazoles may be considered in patients with a surgical contraindication.

Four species have been recognized to cause public health concerns. *Echinococcus granulosus* (*E. granulosus*) causes cystic echinococcosis (CE) and is the most common species to cause the human disease. Although *Echinococcus multilocularis* (*E. multilocularis*) is rare, it is the most virulent species and causes alveolar echinococcosis (AE). *Echinococcus vogeli* (*E. vogeli*) and *Echinococcus oligarthus* (*E. oligarthrus*) cause polycystic echinococcosis.

Certain occupations pose an increased risk of CE such as slaughterers, tanners, stockbreeders, shepherds, butchers, and veterinarians or any job which makes a person to work closely with animals. Giant hydatid cysts of the lung are defined as cysts measuring 10 cm or more.[1]

CASE PRESENTATION

A 42year old female from tripurantakam , an agricultural labourer came with the complaints of fever,left sided chest pain and mild shortness of breath for 4 months. She had a similar episodes of fever,left sided chest pain 3 years back, investigated with pleural fluid aspiration cytology and used ATT for 9 months . she was apparently normal for 1 year after using ATT and symptoms again started 4 months back.

EXAMINATION

On Inspection ,there were decreased respiratory movements on the left side of chest and on Palpation, a medial shift of apex beat towards right for about 1 inch was observed with decreased vocal fremitus on left hemithorax. and no palpable cervical lymph nodes. On Percussion, there was dull note over left hemithoraxand onAuscultation, breath sounds were absent over left hemithorax with normal vesicular breath sounds on right hemithorax.

OTHER SYSTEMS – No Abnormality Detected

PROVISIONAL DIAGNOSIS

1. Massive Pleural Effusion left thorax
2. Solitary Fibrous tumor left thorax

INVESTIGATIONS

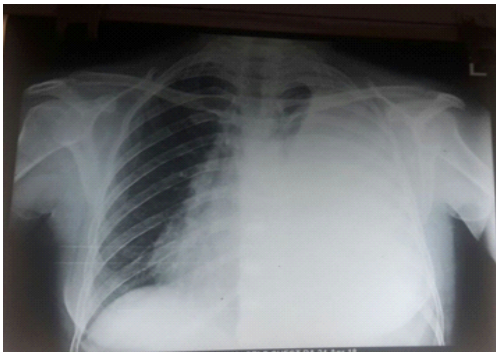


FIG 1:CHEST XRAY PA VIEW:

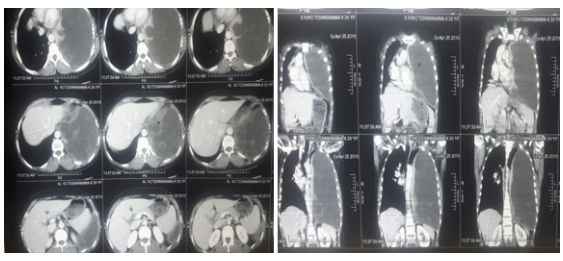
- Homogenous opacification of whole of the left hemithorax noted with contralateral shift of mediastinum.
- Possible differentials include

1) Pleural Effusion(Massive)
2) Largetumor involving left lung or pleura

ULTRASOUND ABDOMEN AND THORAX:

- Liver –Normal echotexture
- Other organs-Grossly normal
- Impression:20*12.6 cm multiloculated cyst in left thorax-Likely Hydatid cyst.

CT CHEST



CT CHEST showing multiple cysts occupying entire left thorax and compressing the left lung

SURGICAL PROCEDURE: Within normal limits

- Excision of mass/cyst under General Anaesthesia with double lumen Endotracheal intubation.
- Left posterolateral thoracotomy done with patient in right lateral position.
- Left pleural cavity was opened and a huge cyst filled with multiple small cysts and thickened pericyst was present.
- Entire cyst was removed along with thickened pericyst and was sent for histopathological examination.
- Left lung which was compressed intitially was decompressed after the removal of the cyst and pericyst.
- Complete expansion of the left lung was observed and no evidence of any cysts were found in the left lung.
- Left pleural cavity was washed with scolicidal agent and haemostasis was achieved.
- Two Intercoastal drains were placed and wound closed in layers.

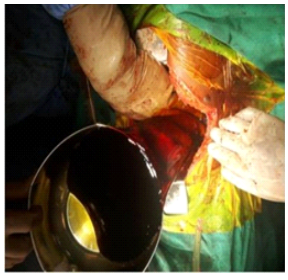
INTRAOPERATIVE FINDINGS:

- A 24*13*9cms cyst present in left hemithorax with multiple cysts and clear fluid and thick pericyst.
- Pericyst is adhered to chest wall,left lung and diaphragm.
- Total expansion of left lung observed after removal of entire cyst.

Left Posterolateral Thoracotomy

Removal Of Multiple Cysts

Pericystectomy



Scolicidal Agent

PLEURAL FLUID FOR CULTURE AND SENSITIVITY:
Occasional pus cells,No growth.

PATHOLOGICAL SPECIMEN:

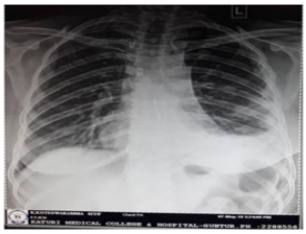
HISTOPATHOLOGICAL REPORT:

- Sections studied from the tissue labelled pericyst show multiple fragmented chytinous cyst wall with inner germinal layer and proteinaceous eosinophilic granular material within the cyst
- Sections studied from the membranous and grey brown bits show thick fibrous wall infiltrated by chronic inflammatory cells and Inner Xanthomatous layer.

Impression – Histological features are suggestive of " HYDATID CYST".

POSTOPERATIVE RECOVERY:

POD – 1



POD – 5

DISCUSSION:
E.granulosis is distributed throughout the world.Dog is the primary host while sheep is an intermediate host.Humans are only accidental hosts and donot play part in the lifecycle of the parasite.Humans may contract the infection either by direct contact with a dog or by ingestion of foods/fluids contaminated by the eggs, which are contained in the faeces of the dog. After ingestion, the eggs are freed from their coating and larva penetrate the mucosa of jejunum reaching through the venous and lymphatic channels to every region of the body where they transform into small cysts which gradually enlarge.[2]

UNUSUAL PRESENTATION:
In our patient,there is no evidence of cysts in the liver and lungs i.e the first and second filters are free of disease.Usually.pericyst is absent or very thin in thoracic cyst due to negative intrathoracic pressure and less resistance of the lungs and pleura.Here we came across a thickened pericyst of about 1.2cm thickness adherent to pleura and diaphragm which is very unusual.Here the possible mode of spread to the pleura might be through lymphatics of dome of liver,the diaphragm which further ascend to the parasternal and intercoastal lymph nodes.

MODE OF SPREAD:

- Embryos can also reach the lungs via another route.
- They enter the thoracic duct via lymphatics of the small intestine and then through an internal jugular vein, and right side of the heart, and they enter the lungs.This is a major pathway by which the hydatid larva bypasses the liver and involves the lungs. But here lungs were not involved in our patient.
- Another possible lymphatic pathway is the lymphatics of the dome of the liver and the diaphragm, which ascend to the parasternal and intercostal lymph nodes.
- The third possible route is a venal-venous anastomosis in the liver and the space of Retzius.
- Another possibility is direct pulmonary exposure through the inhalation of air contaminated with *Echinococcus* eggs.[3]
- The growth rate of the hydatid cyst depends on the softness of the organ and surrounding tissue elasticity.
- Lung cysts grow faster than the liver cysts, as lungs are softer in consistency than liver.
- Negative pleural pressure may further accelerate the growth rate of the cysts.[4]

DIAGNOSTIC MODALITIES:.

- Diagnosis of this disease can be established based on the history of exposure in an endemic area along with the radiological findings .
- Plain radiography,CT and magnetic resonance imaging (MRI) can detect and localize the cysts.
- Ruptured and infected hydatid cyst are often confused with malignancy,tuberculosis(TB),Abscesses or Empyema.
- Furthermore,early diagnosis is crucial to prevent complications.
- Compliment fixation,specific immunoglobulin G,indirect fluorescent ,and enzyme linked immunosorbent assay(ELISA) tests can be used to support the diagnosis.
- Serological tests are only significant when the results are positive,but negative results donot necessarily rule out hydatid disease.[1]

COMPLICATIONS:

- Complications of pulmonary hydatid cysts include rupture, secondary infection, pneumothorax, and suppuration.
- Usually, cysts larger than 5 cm. in diameter may cause bronchial compression.[1]

CHEMOTHERAPY:

- It has been suggested that better results would be achieved by

combining surgery and chemotherapy(Albendazole) for pre and postoperative prophylaxis.

- Large doses of Albendazole over a long period of time (3-6 months) would be a good clinical approach and may reduce the incidence of relapse whether the cyst is completely removed or not because of the possibilities of micro perforations.
- Albendazole and mebendazole are the only antihelminthic drugs that are effective against cystic echinococcosis.
- Albendazole is the drug of choice against hydatid cyst because its degree of systemic absorption and penetration into the cysts is superior to that of mebendazole.[2]
- In our case the diagnosis was made preoperatively and we have kept our patient on Albendazole 800mg/day for 6 months as postoperative prophylaxis and she has no sign of recurrence.

CONCLUSION

- Intrathoracic yet extrapulmonary locations are infrequent, with an occurrence rate of 7.4%.[2]
- Cysts in the diaphragm, pleura,mediastinum, pericardium, myocardium, fissures, and chest wall are called intrathoracic extrapulmonary cysts.[1]
- Most of the reported cases of intra-pleural hydatid cyst are secondary.

This case report provides evidence that non-complicated hydatid cysts, even if very large, have a good prognosis and can be safely treated by parenchyma-preserving surgery.

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