

Lung Cysts - Our Experience

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Abstract

Lung cyst form an important cause of morbidity and mortality in patients of all age groups. They have varied presentations, so form a diagnostic dilemma. This study was conducted on 50 patients over 3 years duration in Medical College Jammu, to establish the aetiopathogenesis of lung cysts in this part of country and then manage them accordingly. Hydatid cysts were found to be commonest lung cysts i.e. 90%. Two patients had congenital cysts (4%). Amongst the rest three, one had emphysematous cyst, 2nd tuberculous pseudo-cyst and last patient was having giant pneumoatocele. Eight patients had extra pulmonary cysts in addition to lung cysts and commonest organ involved was liver (6 patients). One patient had cyst in retroperitoneum and one in the spleen. Youngest patient was 4½ years old and oldest was 66 years. Male had slightly more incidence as compared to females and involvement of right lung (70%) was more as compared to left lung. Surgery was needed in 80% of the patients whereas rest were treated non surgically. Four patients had hydatid cyst of lungs. Hydatid patients who were treated non-surgically, were given 3-4 course of albendazole (400 mg BD) each course lasting for four weeks. Other cysts disappeared completely once systematic disease was treated i.e. antitubercular drugs etc.

Key Words

Lung Cyst, Echinococcus, Hydatid Cyst, Pneumoatocele, Capitonage, Echinococcus Granulosis

Introduction

The word cyst is derived from Greek word meaning bladder, pathologically cyst means swelling consisting of a collection of fluid in a sac which is lined by epithelium or endothelium. These cysts can occur in any organ of the body and lungs are one of the commonest organ effected by cyst. For the sake of simplicity lung cysts can be divided into four types.

A-Epithelial cysts- There are development in original. They are lined by respiratory epithelium and may have traces of cartilage, bone, muscle or glands in their wall. They are often associated with congenital abnormalities, like cervical rib, pulmonary stenosis, PDA etc. B-Emphysematous cysts:- They have no epithelium lining and are degenerative in origin. C- Parasitic cysts :- Parasitic cysts are formed by various parasitic infestation of lung (1-6). Most common of these are following :-

1. Echinococcus granulosis
2. Echinococcus multilocularis
3. Echinococcus vaegali

4. Echinococcusretagonicus
5. Echinococcusobligarthus.

Ist two astodes are mainly responsible for lung cysts in majority of lung cysts. D-Pseudo cyst: In these cysts there is no epithelial or endothelial lining. The cavities when chronic are often lined by fibrous tissue. Various infectious condition causing lung cysts are bacterial i.e. staphylococcus, tubercular, lung abscess. Fungal infection e.g. spargilosis, blastomas etc. are also responsible for lung cyst in some of the patients.

Material and Method

The present study includes fifty patients admitted in various surgical and medical wards of Govt. Medical College Hospital and referred patients from chest disease and pediatric hospitals & other peripheral hospitals. W.e.f:- June, 2009- July, 2014.

Most of these patients were admitted with the provisional diagnosis of lung cysts and diagnosis was confirmed by various investigative procedures like :-

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1. X-ray Chest PA/lateral view
2. Fiber-optic Bronchoscopy
3. Ultrasonography .
4. Computerized tomography of chest/abdomen.
5. Lab. Tests i.e. LFT, ELISA for Hydatid disease , tuberculosis etc.

After the patients were investigated and type of cysts was determined , the treatment plan was formulated .Albendazole was given before surgery for 3 weeks and continued post-operatively in patients with hydatid cysts disease and those patients who were treated non surgically , were given 3-4 courses of Albendazole (400mg twice a day) each course lasting for four weeks. In most patients postero-lateral/antero lateral thorocotomy was done on effected side. The whole lung examined and type of cyst confirmed . Procedure was carried out accordingly. Incision closed in layer after putting in chest tube connected to under water seal. Chest tubes were removed after 3-5 days of check X-ray taken before patients were discharged . Uncomplicated patients were discharged on 10th PO day with the advice to come for regular follow up in CVTS O.P.D.The patients with extra -pulmonary cysts were motivated to under surgery after 3 months of the procedure .

Results

The most frequent symptom present in these patients was cough (80%), chest pain was present on side of lesion in 40 % of the patients . All patients had more than one symptom at the time of diagnosis . Almost 50 % of patients had no clinical sign on chest examination . 10 % of patients presented with signs of pleural effusion.The incidence was maximum on 3rd and 4th decade (20% and 32 % respectively) of life. The youngest patient was 4 ½ years, while oldest was 66 years old. The average age of presentation was 33.4 % years, while peak age of presentation was 21-40 years (52 %). Of the fifty patients , 28 patients were male and 22 females , with male to female ration 22:18.

Majority of lung cysts were hydatid in origin . (*Table-I*).8 patients were having extra pulmonary cysts in addition to lung cysts. 6 patients were having liver cyst ,one in retroperitonium and one in the spleen. In over study not even single patient who had bilate ral lung cyst though incidence is low. Lone *et al* (12) reported 11.26 % incidence of bilateral lung cyst , where they operated through single stage bilateral minimally invasive approach for pulmonary hydatid diseases. Right lung was involved more (70 %) as compared to left.As shown in the *Table*

-2 enucleation of cysts with capittontage was done on 35 patients (70 %). In three patients (6 %) decortications was done followed by membrane removal and capittontage . One of the patient needed lobectomy as the lung effected by hydatid disease was completely destroyed. Fortunately there was no mortality in our patients .

Discussion

A variety of disease processes mimic lung cysts. These cyst produce varying symptoms and signs. Some cyst can be asymptomatic as one patient (2 %) in this series was picked up while investigating for other disease. Cough was the commonest symptom (80 %) which was usually dry and recurrent. Muthuselvum *et al* (1) and Ayuso *et al* (2), reported 60 % patients with cough. Other symptoms included haemoptysis , fatigue , Dyspnea , hydatoptysis , vomiting & fever. (7, 8, 9, 10,11,12) .

Haemoptysis was present in fifteen (30 %) patients in this series. Balikian *et al* (3) reported haemoptysis in 60 % of patients. This haemoptysis was mild but can be massive which was not reported in any of our patients. Chest pain occurred in 40 % of the patients . None of these symptoms were pathogonomic of lung cysts. The physical findings in lung cysts were scarce, 50 % of patients had no clinical sign. It can be concluded that physical sign in pulmonary cysts are minimal and non contributory towards diagnosis.

Extra pulmonary involvement was present in 16 % of patients. This involvement was present in 11.27 % of Barrett and Thomas series (4), while 30 % in Bailkian study (3). In the present study 70 % of the patients had cysts in right side. Bailkian (3,) reported this incidence as 60 % fro right lung and 40 % for left lung cysts. Muthuselvum *et al* (1), reported 71 % right lung involvement. Usleur O, (7) reported involvement of right lung more than the left lung.

Surgery was needed in forty (80 %) of patients in this series . All these patients had hydatid cysts in the lungs. 9 patients (18%) were treated non surgically by drugs , breathing exercises, chest physiotherapy and regular follow up. One patient expectorated the hydatid membrane which was ruptured on bronchoscopy.

In patients who were operated upon for lung cysts, conservative surgical procedure were preferred (enucleation with capittontage). Salih OK (5) observed that lung preserving surgery is treatment of choice in hydatid lung in his study of 405 hydatid lung patients . Out of nine patients who were treated non-surgically for patients had hydatid cysts of lungs. The hydatid cyst

Table 1. Types of Cysts

Cyst type	No. of patients	Percentage
Hydatid cyst	45	90
Congenital cyst	2	4
Emphysematous cyst	1	2
Tuberculous pseudo cyst	1	2
Giant pneumatocele	1	2.

Table.2 Type of Surgical Procedure Adopted In Operative Cases

Cyst type	No. of patients	Percentage
1. Thorocotomy with enucleation of cyst And capittonage and under water seal drainage	35	70
2. Thorocotomy with decortications, removal of membrane, capittonage & under water seal drainage	3	6
3. Thorocotomy with removal of daughter cyst & cappittonage with under water seal drain age	1	2
4. Thorocotomy with lobectomy and under water seal drainage	1	2

patients were given 3-4 courses of albendazole (400 mg BD), each course lasting for four week. Between each course one week break was given in order to decrease the chance of drug toxicity and LFT blood count were performed, five patients with non hydatid lung cysts were all treated non-surgically. One patient with tubercular pseudocyst was treated with anti tubercular chemotherapy and cyst disappeared. The patient with congenital air cyst (two in number) had superimposed infection and consequently given antibiotics and chest physiotherapy, one patient with emphysematous cyst had chronic obstructive lung disease associated with it. This patient recovered with bronchodilator and prolonged course of antibiotics. The cyst regressed markedly with this therapy. Giant pneumatosis associated with pneumonia disappeared when pneumonia was treated. One patient with hydatid cyst expectorated the cyst material and got relieved of the disease. It is concluded that non-hydatid lung cyst can be treated non-surgically unless complications supervenes. Marris et al 6 presented a series of four patients in which albendazole in dose of 10 mg/kg/day was administered. there was radiographic evidence of cyst regression in three of these patients.

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Postoperative complications occurred in four patients (8%), wound infection was most common complication occurring in 4% of cases. Other complications were persistent air leak and pleural effusion. Chest-wall hydatidosis occurred in one patient, after one year of lung hydatid surgery. This patient needed surgical excision and albendazole therapy.

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