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Case Report

Bronchogenic cyst mascoriding bronchial asthma: a case report

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ABSTRACT

Bronchogenic cysts are developmental errors of the tracheobronchial tree. Various clinical presentations from incidental detection to symptomatic presentations have been described but presenting as acute bronchial asthma is relatively rare. A 3-year-old male child repeatedly presented with acute asthmatic attacks. Initially treated as asthma and evaluated for foreign body. Contrast enhanced computed tomography (CECT) scans showed bronchogenic cyst near the left bronchus. Transthoracic excision relieved symptoms permanently. Role of CECT scan in symptomatic children with vague respiratory symptoms is being stressed. A rare case of bronchogenic cyst presenting as acute bronchial asthma is being reported. Early identification and intervention of this condition can prevent life threatening complications.

Keywords: Bronchogenic cyst, Acute bronchial asthma, Development of respiratory tract

INTRODUCTION

Bronchogenic cysts are congenital malformation of developing tracheobronchial tree.

They account for 10–15% of all mediastinal masses and are classified as intrapulmonary or mediastinal.[1] Presentation is either accidently detected or may present as symptoms related to the anatomical location.[1-4] Depending on the location they can be further classified as paratracheal, carinal, bronchial, peripheral, mediastinal and esophageal.[2]

Aims and objectives

Aims and objectives of the study was to present a rare case of bronchogenic cyst presenting as bronchial asthma.

CASE REPORT

A 3-year-old boy was repeatedly admitted with recurrent episodes of asthmatic attacks. He required more than 3 to 4 admissions and was treated conservatively. Initial evaluation by pediatricians didn't yield any positive diagnosis. Attempts were also made to rule out the presence of any foreign bodies.

Surgical evaluation revealed there was a unilateral left sided over-distended lung although it was subtle (Figure 1).

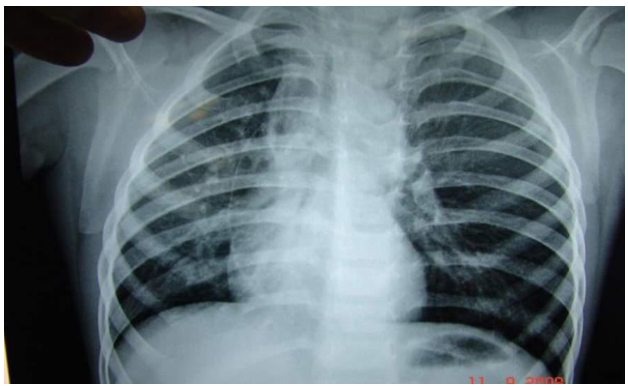

Figure 1: Chest radiograph showing subtle unilateral left sided over-distended lung.

Contrast enhanced computed tomography (CECT) evaluation showed a small bronchogenic cyst related to the left main bronchus (Figure 2).

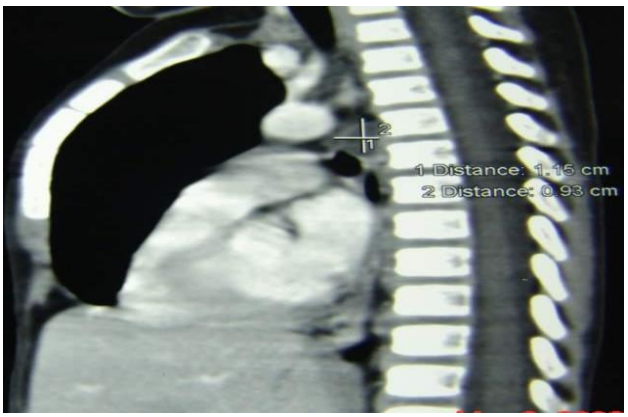

Figure 2: CECT evaluation showing a bronchogenic cyst related to the left main bronchus.

Other parameters like hemogram, and erythrocyte sedimentation rate (ESR) were unequivocal.

The child was operated by a posterolateral thoracotomy and the cyst was excised (Figure 3). The patient was immediately relieved of symptoms and on follow-up the child was thriving.

Histopathology confirmed a bronchogenic cyst.

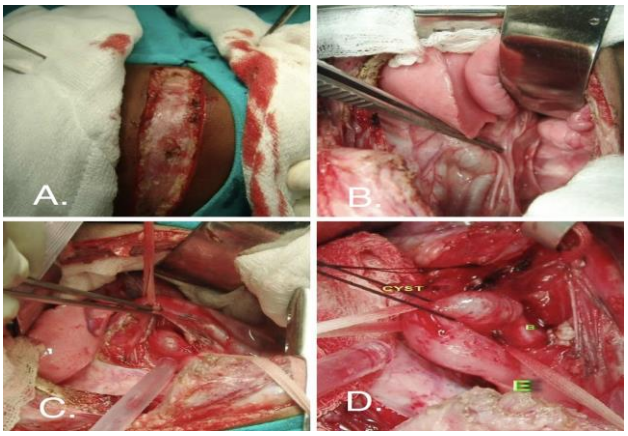

Figure 3: Cyst, operative picture.

DISCUSSION

Bronchogenic cysts are developmental errors of abnormal or delayed budding of tracheobronchial trees around 12-15 weeks of intrauterine life.[1]

Tracheobronchial tree develops from the anterior part of the fetal foregut.

Embryonic, pseudoglandular, canalicular, saccular and alveolar are the 5 phases of development of tracheobronchial tree which occur between 5-8 weeks of gestation and later continue to mature in the postnatal period also.[5]

Maier's system of classification includes paratracheal, carinal, hilar, paraesophageal and miscellaneous.[6] Common sites of location in the middle mediastinum are paraesophageal and other sites in posterior mediastinum.

Clinical presentation varies based on the site of bronchogenic cyst. Hence, presence of bronchogenic cyst can be accidental or detected on antenatal ultrasound.

It may present with symptoms of lower respiratory tract infection, fever, cough, and dyspnea upon infection. When closely related to the esophagus it may present as dysphagia.[3]

When related to carina/bronchus, they may present as lower respiratory tract infection with wheeze. Features like episodic paroxysmal wheeze not responding to medication suggest bronchogenic cyst. It may sometimes mimic symptoms of the presence of a foreign body.[4]

The index case was also admitted repeatedly with lower respiratory tract infection with wheeze.

Diagnosis may be difficult as seen in the index case.

High index of suspicion and use of advanced imaging like CECT will help localize bronchogenic cysts. Endobronchial ultrasound is also useful for diagnosis.[7]

Pathologically, bronchogenic cysts are smooth thin walled unilocular cyst containing mucus, characteristically bronchogenic cyst are lined by respiratory epithelium.

The treatment of bronchogenic cyst is complete surgical excision. Anecdotal reports of use of sclerosants like alcohol and bleomycin are present. Transthoracic aspiration has also been reported in literature but maybe of temporary use only.[8]

Prognosis is usually good if the cyst is completely excised. Primary problems are difficulties in diagnosis.

CONCLUSION

An unusual presentation of bronchogenic cyst mascoriding bronchial asthma is being reported.

Accurate diagnosis may be challenging, but a high level of suspicion and advanced imaging techniques such as CECT and endobronchial ultrasound can aid in localization along with pathological confirmation. Both symptomatic and asymptomatic presentations may lead to complications of compression, hemorrhage, hemoptysis, infection, pneumonia and rupture, eventually threatening life, therefore, it is imperative for physicians to be able to make the diagnosis. Overall, the prognosis is generally favorable if the cyst is completely excised.[3]

The other differential diagnosis that could be considered for bronchogenic cysts are lung abscess, hydatidosis, fungal disease, tuberculosis, neoplasms, lymphangiomas, mediastinal cysts: thymic cyst, pericardial cysts, oesophageal duplication cyst and centrally necrotic lymph nodes.[3,9]

The publication of this case report could enhance practitioners' level of awareness regarding this rarely documented condition and to help provide tailored treatment to their patients.

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