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CERENE EVELYN[1], GEORGE IPE VETTIYIL[1], LYDIA JENNIFER S[2] AND WINSLEY ROSE[1*]
Departments of [1]Pediatrics and [2]Microbiology, Christian Medical College, Vellore 632 004, India.
**winsleyrose@cmcvellore.ac.in*

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Recurrent Peumonia in an Infant With an Esophageal Lung

Esophageal lung is a rare variety of communicating bronchopulmonary foregut malformation with anomaolous communication between an isolated portion of respiratory tissue and esophagus. Children present in early life with recurrent cough and pneumonia. Majority of the reported cases are associated with other anomalies like tracheoesophageal fistula. We report a case of a 7-month-old girl with right sided esophageal lung who was misdiagnosed as dextrocardia with right sided pneumonitis.

Keywords: *Bronchopulmonary, Dextrocardia, Lung malformation, Recurrent cough*.

Esophageal lung is a rare communicating bronchopulmonary foregut malformation with anomalous origin of the main bronchus from the esophagus usually on the right side, which leads to recurrent aspiration pneumonitis. Other associated congenital anomalies of the upper gastro-intestinal tract, ribs and vertebrae may be present. It is diagnosed radiologically and confirmed by broncho-scopy. Few cases have so far been reported in literature [1]. A high index of suscpicion should be kept in young children with recurrent chest infection.

A 7-month-old girl presented with recurrent lower respiratory tract infection and episodes of choking following breast feeding since one month of age. She was symptomatic in the present episode for last 7 days for which she received oral amoxycillin for 5 days without improvement. The baby was born full term by normal delivery and was developmentally normal. At admission, child had low weight and length as per age, tachypnea (respiratory rate 72/minute), tachycardia (heart rate 130/minute) with subcostal and intercostal retractions. On auscultation, breath sounds were decreased on right side with apex beat on the right side suggestive of dextrocardia. Hemoglobin was (10g/dL), total leucocyte count was 27700/µL (neutrophils 74%), C-reactive protein was positive, with normal renal and liver functions. Blood culture was sterile. Chest *X*-ray showed hazy right hemithorax with mediastinal shift to the right side. Contrast enhanced computed tomographic (CT) scan thorax demonstrated right lung hypoplasia with cystic bronchiectatic changes with nonvisualization of right main bronchus, hypoplastic right main pulmonary artery and abnormal bronchesophageal communication (***Fig*. 1*a*, 1*b***). Barium swallow study showed filling of right main bronchus directly from the esophagus. Rigid bronchoscopy revealed a blind ended right bronchial stump which confirmed the diagnosis of esophageal lung. Ultrasound abdomen and echocardigraphy were normal. Child improved with oxygen, intravenous antibiotics and nebulisation with bronchodilators. Child started accepting orally and was gradually tapered off oxygen. She was advised operative intervention for esophageal lung (right pneumonectomy with resection of the esophageal bronchus and repair of the esophagus at the site of bronchial communication), which the family refused.

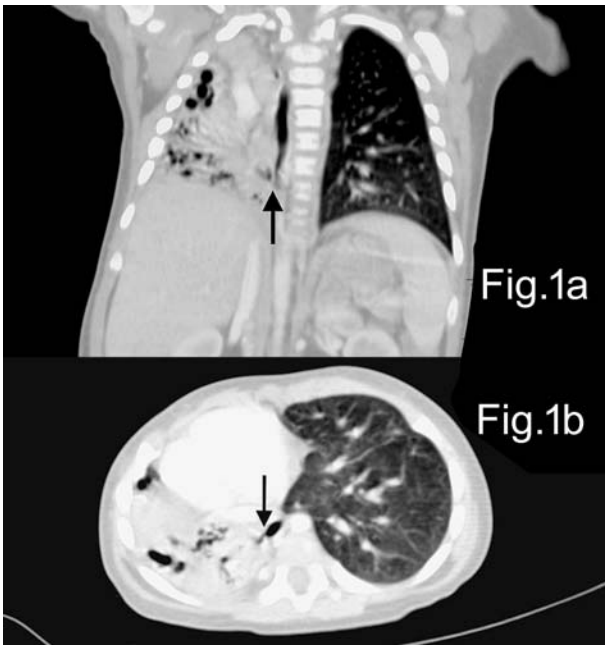

Fig. 1 *(a) CT lung (coronal section) demonstrating right lung hypoplasia with nonvisualization of right main bronchus with arrow showing communication of lung with lower esophagus; (b) axial image with arrow demonstrating communication of lung with esophagus.*

Congenital bronchopulmonary foregut malformation comprises of an abnormal patent tract between respiratory and gastrointestinal tract as a result of anomalous budding of the embryonic foregut and tracheobronchial tree [2]. It has been classified into 4 groups [3] *viz*, group I (16%) with associated esophageal atresia and tracheoesophageal fistula, group II (33%) where one lung originates from the lower esophagus (esophageal lung), group III (46%) with an abnormal communication between an isolated anatomic lung lobe or segment with the esophagus or stomach (esophageal bronchus), and group IV (5%) with communication of normal bronchial system with esophagus. Patients present with failure to thrive, chronic cough and recurrent pneumonia. Those with severe anomalies present early in life with cough on feeding, also known as Ono´s sign [4]. Eosphageal lung is commonly seen in females with a ratio 1.5 to 1 with preferential right lung involvement like index case [5]. This probably results from proximity of the right mainstem bronchus with the esophagus. Esophageal lung can be associated with other anomalies of cardiac, respiratory or gastrointestinal tract. The definitive treatment is surgical correction.

All children with recurrent pneumonitis and cough following feeds should be thoroughly investigated. The present case was referred with diagnosis of dextrocardia with pneumonia. Radiological investigations were suggestive of esophageal lung. A high index of suspicion and detailed work up should be done in children with recurrent pneumonia.

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NEHA THAKUR[1]*, DIPTI AGARWAL[1], SHAMRENDRA NARAYAN[2] AND DEEPANSHU SHUKLA[1]
Department of [1]Pediatrics and [2]Radiodiagnosis, Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow, Uttar Pradesh, India.
**nehaimsbhu@gmail.com*

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