Cervical Lung Herniation Presenting as a Pediatric Neck Mass

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Abstract

Objectives: 1. Describe a unique case of pediatric cervical lung herniation presenting as a neck mass. 2. Review the literature for characteristics of pediatric cervical lung hernia. 3. Provide recommendations for management.

Methods: Case report and literature review.

Case: An 11 year old boy was admitted with cough and neck swelling. Exam revealed prominent bilateral compressible supraclavicular bulge without crepitus or pulsation. Computed tomography and chest fluoroscopy identified lung parenchyma herniating through the thoracic inlet. He was treated conservatively and neck swelling resolved after the cough subsided.

Literature review: Pubmed was searched for English language articles from 1978 to present. 14 cases of cervical lung herniation were identified in the recent medical literature, five of whom were children, one requiring surgical intervention. An association between fascial defects and chest wall hernias has been described suggesting a congenital fascial weakness may contribute to the pathophysiology.

Conclusions: Spontaneous cervical lung herniation (Sibson hernia) represents an unusual cause of a neck mass in children. Thoughtful exam and workup will reveal the etiology. Conservative treatment is often effective.

Case report

An 11 year old boy was hospitalized with human metapneumovirus pneumonia and neck bulging during cough without known underlying neck mass. He had history of congenital diaphragmatic hernia repaired in infancy then an umbilical hernia repaired at age 5. He also underwent tracheostomy in infancy for instability requiring surgical intervention. Exam revealed a well-healed tracheostomy scar, no neck mass at rest bilateral low anterior neck bulging with cough (figure 1) that was compressible and without crepitus. Flexible fiberoptic laryngoscopy and chest x-ray were unrevealing. CT of the neck suggested lung parenchyma herniating into the neck (figure 2). Fluoroscopy confirmed cervical lung herniation during cough (figure 3). The patient was managed conservatively and symptoms resolved.

Methods and Materials

A Pubmed search for English-language articles from 1980 to present was performed using search terms, “cervical lung hernia” and “sibson hernia.” 120 article titles and abstracts were reviewed for relevance and 18 articles were reviewed.

Results

14 case reports of cervical lung herniation were identified (table). Six of the reported cases were children under age 18 years. None had previous trauma. Eleven of the patients had cervical lung herniation on the right, two were bilateral, one on the left side. All patients presented with a neck mass, other symptom lists are included in the table. Five patients underwent surgical repair for persistent symptoms and others resolved or there was no mention of follow-up. Two articles described patients with incidental lung herniation on imaging studies (15, 16).

Discussion

This case describes cervical lung hernia as an unusual cause of transient pediatric neck mass. Literature review suggests the condition is more common on the right and can affect all age groups. Lung hernias are generally divided into diaphragmatic, thoracic, and cervical. Cervical herniation occurs when lung parenchyma extrudes through the thoracic inlet via defect or laxity in the suprapericardial membrane (Sibson’s fascia) and is occasionally referred to as “Sibson’s hernia.” Coughing, weightlifting, or playing a wind instrument may contribute to herniation. Apical pleural defects have been incidentally identified in asymptomatic patients and may exacerbate the pathology (17). Imaging at rest may be normal but imaging during valsala or cough is diagnostic. Complain in pediatric patients may be challenging and a strong clinical suspicion is required for diagnosis. Most cases can be managed conservatively in the absence of severe or persistent symptoms.

Conclusions

Cervical lung hernia is a consideration for transient neck mass in children. Conservative therapy is often effective.

References


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Figure 1. Neck bulge during cough

Figure 2. Reconstructed CT image of lung apices adjacent to thoracic inlet

Figure 3. Fluoroscopic image obtained during cough showing lung parenchyma herniating into neck