

Case Report

Delayed diagnosis of foreign body aspiration in children

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Foreign body aspiration in children is common and usually presents with an initial episode of choking with subsequent respiratory symptoms. There may be cough, wheeze, or stridor, with decreased or abnormal breath sounds on examination. However, it can mimic other illnesses and cause difficulty in diagnosis. Radiological investigations may help to confirm aspiration but should not be used to exclude it. This case is a presentation of foreign body aspiration with a delay in diagnosis and misdiagnosed as bronchial asthma. It is believed that delay could have been avoided with a more careful approach to the history and more appropriate use of investigations. This case also demonstrates the use of CT scan with reconstruction in diagnosis of foreign body.

Keywords: foreign body; aspiration; children; Sudan

In the past, foreign body aspiration (FBA) has been a tremendous cause of death and disability. A decrease in mortality for FBA from 24% to 2% with the use of endoscopic techniques for foreign body removal was reported ⁽¹⁾. Primarily this disease affects children < 4 years (55-75% cases) and adults >50 years. It causes respiratory symptoms such as wheeze and cough after a choking episode ⁽¹⁾. A careful history and clinical examination can identify those children that need additional investigations including bronchoscopy ⁽²⁾. FBA can mimic other conditions and the link between choking and subsequent symptoms may not be made by parents and professionals alike.

Case Report

A 5 year old girl presented to the emergency department with wheeze and cough. Her symptoms started two months ago with cough and wheeze. There were repeated episodes of wheeze and hospitalization. Diagnosis of bronchial asthma was established and the patient received bronchodilator many times. Parents of the girl denied any history of foreign body aspiration. On presentation, she

was dyspnoeic with a respiration rate of 100. A chest radiograph was interpreted as normal and she was admitted and given inhaled bronchodilator with some improvement. She continued to wheeze and cough. The next day she had expiratory wheeze that was louder on the left side of her chest. FBA was suspected and CT scan was done. The CT revealed a foreign body in the trachea (figures 1, 2 and 3). She was then referred for bronchoscopic evaluation. A plastic ring was removed with rigid bronchoscopy. She recovered uneventfully and was discharged home on her third hospital day.

Discussion

FBA by children in Sudan is not uncommon, especially those below the age of 5 years ⁽³⁾. Children are at risk because of their curious nature, strong oral tendency and lack of molar teeth ⁽²⁾. It usually affects the larynx and trachea and rarely the lungs ⁽³⁾. Statistically, FBA involves the hypopharynx (5%), larynx/trachea (12%) and bronchi (83%). Of bronchial foreign bodies, most (43%) are in the right mainstem, followed by the left mainstem (24%), right segmental bronchi

(22%) and left segmental bronchi (11%)⁽²⁾. It more often presents with a history of an initial episode of choking and coughing with subsequent respiratory symptoms⁽⁴⁾. These include cough, wheeze, stridor, or pneumonia. The most common physical sign is decreased or abnormal breath sounds. Most inhaled foreign bodies in children are food items.

Figure 1: Three dimensional image showing filing defects

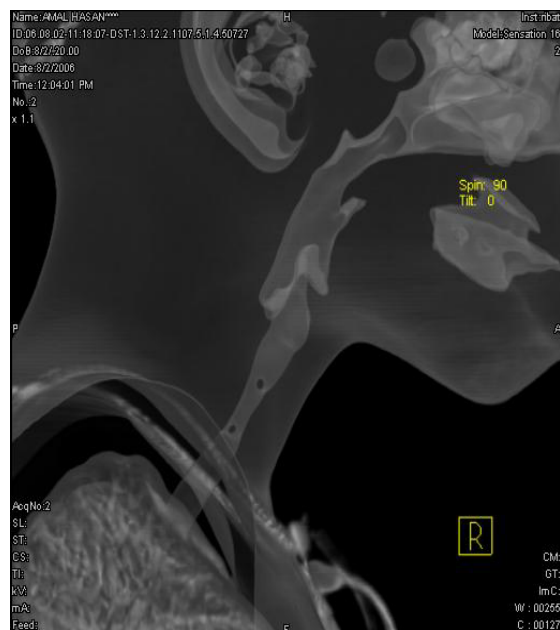


Figure 2: Three dimensional image showing filing defects



Figure 3: Three dimensional image with reconstruction showing filing defects



However, there is often significant delay until the diagnosis is made^(2,4,5). In one series a delay of over three days between aspiration and removal of the foreign body was reported in almost 30% of children⁽⁵⁾. FBA can be misdiagnosed as asthma, upper respiratory tract infection, pneumonia, or croup⁽⁶⁾. Delay in diagnosis is associated with increased morbidity, especially respiratory infection. In one study, the time to diagnosis was divided as follows: 0 to 1 day (45%); 1 to 7 days (22%); 7 to 30 days (14%); and >30 days (17%). Most foreign bodies in children are radiolucent, but they may be associated with hyperinflation, atelectasis, or consolidation. In a series of 189 children with proven foreign body aspiration, 90 cases (47.6%) had normal chest radiographs^(7,8). Diagnosis and treatment depends on direct laryngoscopy and rigid bronchoscopy. In our centre the option of both flexible and rigid bronchoscopy were not available. What is new in this presentation is the use and interpretation of CT scan with reconstruction. This, in some series has been shown to provide equally valuable information in children

with suspected FBA and prevent unnecessary conventional bronchoscopic examination⁽⁹⁾.

Children who have a sudden onset of choking and coughing should be taken seriously. Most important is a thorough history of the initial episode and if there are persistent symptoms then the child should be referred for bronchoscopic evaluation.

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