Foreign bodies in tracheobronchial tree

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No age is really safe from aspiration of foreign bodies, but there is a high occurrence of this clinical condition in infants and children. Nearly 80 percent of these accidents are encountered in the pediatric age group[1-3]. This is particularly so in the pediatric age group especially the under-five. This is said to be due to their inquisitiveness, adventurous nature, lack of molars for proper mastication, playing and running with food in the mouth with consequent incoordination in swallowing and glottic closure. By far, the objects aspirated most frequently are organic or food matter. Most common organic foreign bodies are peanuts, popcorns and seed while toy parts, whistles and nails are the most common inorganic foreign bodies. The most important piece of data for a clinician to have when evaluating a child who possibly has aspirated a foreign body is an accurate history provided by a witness to the event. The classic history can include an acute choking episode followed by coughing, wheezing, and even stridor. A history of one or more of these symptoms is present in greater than 90% of children who aspirate foreign bodies. Physical findings include cough, tachypnea, diminished breath sounds, wheezing, stridor, dyspnea, cyanosis, and suprasternal retractions. However, the absence of any of these findings does not preclude the possibility of foreign body aspiration.[4]

Most foreign bodies aspirated by children are radiolucent. Therefore, radiographs primarily are useful for detecting only the indirect signs of foreign body aspiration, such as air trapping or atelectasis. Most studies report normal radiographic findings in 10% to 30% of children who have documented foreign body aspiration. As many as 50% of those who have foreign bodies in the trachea can have normal findings on radiography. Therefore, the presence of normal findings on chest radiography should not exclude the diagnosis of aspiration. Other diagnostic imaging modalities, such as computed tomography, magnetic resonance imaging, and ventilation perfusion scans have a limited role in the diagnosis of foreign body aspiration.[5]

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In the management, for children younger than 1 year of age, back slaps and chest thrusts with the infant in a head-down position are the treatment of choice. For children older than 1 year, abdominal thrusts (Heimlich maneuver) are recommended. These maneuvers are designed to force the diaphragm upward, which generates increased intrathoracic pressure and results in increased intratracheal pressure that expels the foreign body. As long as children have mouths and their world contains objects that fit into those mouths, foreign body aspiration will occur. The only way to reduce the number of associated deaths is through public education and legislation. As discussed previously, many of the objects commonly aspirated are foods, such as peanuts. Therefore, parents and caretakers should be educated by clinicians to withhold such foods until the child is old enough to chew them adequately. Additionally, they should be reminded to keep small objects such as pins out of their child's reach.[4]

The American Academy of Pediatrics recommends the following for prevention[6].

- Marbles, small rubber balls, and latex balloons should be mentioned specifically, since aspiration of these items may be fatal.
- Infants should be fed solid food only by adults, and only when the infant is sitting upright; all meals for young children should be supervised by an adult.
- Children should be taught to chew their food well; shouting, talking, playing, running, crying, and laughing while eating should be discouraged.
- Chewable medications should be given only after the age of three years (when molars are present).
- The practice of using the mouth to hold school supplies or other small objects should be discouraged.
- Avoid toys with small parts, and keep other small household items out of reach of infants and young children.
- Follow the age recommendations on toy packages.
- Parents, teachers, child care providers, and others who care for children should be encouraged to take a course in Basic Life Support and choking first aid.

To sum up, tracheobronchial tree foreign body, is potentially fatal in small children. Witness to the inhalation event is of prime importance for the diagnosis in addition to radiology. Bronchoscopy is the most common procedure for removal. For prevention proper education of the parents and legislations are necessary to decrease the incidence of foreign body inhalation.

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