

CASE REPORT

Subglottic Foreign Bodies - Two Case Reports

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SUMMARY

Subglottic foreign bodies are not uncommon. Foreign bodies in respiratory tract have been major cause of morbidity. The spectrum of presentation varies widely from sudden death due to complete respiratory obstruction to accidental finding during routine investigation. Two cases of unusual subglottic foreign bodies are reported, who required emergency tracheostomy. A common problem encountered in a case of laryngeal foreign body is delayed diagnosis; and special care has to be taken not to damage the surrounding laryngeal tissues during removal.

Key words: Subglottic foreign body; Tracheostomy; Bronchoscopy

INTRODUCTION

Foreign body aspiration is a common problem especially in children and accounts for an important cause of morbidity and mortality. It is a potentially life threatening event and might also cause chronic lung injury if not urgently managed. The diagnosis and treatment of the problem requires awareness and highest degree of suspicion of signs and symptoms of foreign body aspiration.¹ Foreign body aspiration commonly occurs in children between 1 and 3 years of age and consists mostly peanuts, seeds and other food particles and less frequently of plastic and metal particles.² Small parts of toys are also notorious in this regard.

Majority of children presenting with foreign body aspiration are under the age of 3 years.³ The natural urge to explore the objects by mouth, lack of molar teeth to crush nuts, crying and playing during eating and lack of parental supervision are

contributory factors.⁴ The foreign body may get impacted in larynx or trachea.⁵

Anaesthetist may be called to secure the airway of the choking victim or he may be required to anaesthetize the child for removal of a foreign body lodged in tracheobronchial tree and it is really a very challenging job for him. Protection of tracheobronchial tree is the first and the foremost task. Decision regarding airway management must take into account the present state of airway, and anticipated soft tissue swelling. Early intervention is required if the swelling obscures the anatomic landmarks and is likely to progress towards partial or complete obstruction. An urgent tracheostomy should be performed to secure the airway if severe upper airway obstruction is present at the time of presentation, before laryngoscopy and bronchoscopy is undertaken.⁶ We report two cases of unusual laryngeal foreign bodies who presented with acute respiratory distress and in which elective

tracheostomy had to be performed before retrieval of foreign bodies.

CASE REPORT 1

A 2 years old male baby presented to emergency department with a history of sudden onset of respiratory distress. Attendants gave no positive significant history which could lead to a provisional diagnosis. On clinical examination, the patient was found to have biphasic stridor and had a respiratory rate of 60/min and pulse rate of 160/min. There was no time for blood gas analysis or other investigations. A probable diagnosis of airway obstruction due to some foreign body was made and the child was immediately rushed to the emergency operating room. His SpO₂ on air varied between 80-85% by pulse oximetry before oxygen inhalation was started. Anaesthesia was induced with halothane and 100% oxygen by mask while the patient was monitored with precordial stethoscope, pulse oximeter and electrocardiogram. Muscle relaxants were not given and the anaesthesia was maintained on spontaneous respiration. The SpO₂ rose to above 95%. After achieving adequate depth of anaesthesia, bronchoscope size 3.5 was introduced, which could not be passed beyond the glottic opening. His SpO₂ dropped which necessitated the performance of urgent tracheostomy. The anaesthetic circuit was now attached to the tracheostomy tube and the child was given a dose of muscle relaxants. The ventilation was now controlled manually. This procedure ensured that the child was well oxygenated. Direct laryngoscopy then revealed a subglottic glass piece which was removed subsequently with the help of forceps. The transparent glass piece could not be visualized in the first attempt. The child was administered a shot of steroids and recovered well.

CASE REPORT 2

A 2 year old male child presented with stridor and sudden respiratory distress to the emergency department. There was a history of playing with small stones. The child was cyanotic and was rushed to operating room. The child was in severe respiratory distress; all the accessory muscles of respiration were

called into action. Still his colour was obviously cyanotic, and pulse oximetry showed a saturation of 85-90% on room air. The child was restless. Oxygen and halothane were administered by face mask with gentle positive pressure. Direct laryngoscopy without a full control of ventilation and a guaranteed oxygenation was too risky, so when the saturation rose to satisfactory level tracheostomy was performed followed by administration of muscle relaxants and direct laryngoscopy by ENT specialist, which revealed a small stone in subglottis. The stone was removed. The child recovered uneventfully.

DISCUSSION

A foreign body in the larynx constitutes an airway emergency that requires life saving first aid. Irregular foreign bodies or orientation in the sagittal plane may produce only partial obstruction, allowing adequate air movement around the obstruction. Resulting laryngeal edema can lead to complete obstruction. Typically, these patients have symptoms of obstruction and hoarseness. Some symptoms may mimic croup. Delayed diagnosis may lead to complications.

The common presentation is history of choking followed by paroxysmal coughing which later subsides. However, acute respiratory distress is very uncommon but the most alarming. Such a situation, in which severe airway compromise is encountered, demands immediate endoscopy and emergency tracheostomy. The diagnosis may be obscured if the event is unwitnessed in a young child. Neck films may show subglottic narrowing.⁷

Tracheostomy has to be done as an early intervention if the child becomes severely hypoxic. Large laryngeal and tracheal foreign bodies may have to be retrieved through a tracheostomy done as an emergency procedure. Some of the large foreign bodies may cause total respiratory obstruction during induction of anaesthesia, rarely necessitating emergency tracheostomy.⁸

In our first patient, glass piece was not visualized on introduction of bronchoscope, being

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transparent; and due to consistent fall of saturation tracheostomy had to be done. The second patient necessitated early tracheostomy due to severe distress before an attempt could be taken for bronchoscopy. Muscle relaxants were avoided because of severe airway obstruction. Tracheostomy helped the patients to be well-oxygenated, facilitated the surgeons in bronchoscopy with a cool head, and thus ensured patient safety.

It is suggested that in cases of laryngeal foreign bodies, elective tracheostomy should be preferred before bronchoscopy as patient may go into complete airway obstruction due to relaxation of soft tissues during induction. This maneuver will also ensure oxygenation of the patient.

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