UNUSUAL CASE OF LARYNGEAL FOREIGN BODY

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Abstract: The Foreign bodies in respiratory tract have been major cause of morbidity and present as challenge to otolaryngologists. Despite improvement in medical care and public awareness, they are major concern for otolaryngologists. The spectrum of presentation varies widely from sudden death due to respiratory obstruction to accidental finding during routine investigations. A case of unusual presentation of laryngeal foreign body with just loss of voice is described here.

Keywords: foreign body, larynx.

INTRODUCTION:

The Foreign bodies in respiratory tract usually occur as medical emergencies. Diagnosis is done by clinical and radiological examination. The intervention should be as quickly as possible. Most complications, including death are result of delayed intervention. Laryngeal impaction of foreign body is very rare as most aspirated foreign body pass through laryngeal inlet and get lodged lower down in the airway. The laryngeal foreign bodies are especially dangerous in their potential for sudden obstruction. They continue to present challenges to otolaryngologists. We report a rare case of laryngeal foreign body with a rare presentation of just loss of voice with no other symptoms. The literature is briefly discussed.

CASE REPORT:

A female patient aged 17 years presented to LG hospital Ahmedabad in 16 December 2005 with the history of sudden loss of voice since 6 days. There was no history of trauma, fever, stridor, respiratory difficulty or pain in the throat. Indirect laryngoscopy showed shiny material attached to left vocal cord. Detailed questioning revealed that the patient kept sticker in her mouth 6 days back, which she swallowed. Patient was immediately taken to OT. Under general anesthesia direct laryngoscope was passed. The foreign body was visualized (Fig 1). With the forceps the foreign body was carefully removed. It was a sticker (Fig 2).

There was a granuloma in surrounding tissue, which was also removed. Postoperative steroid was given. The patient regained her voice with in 24 hours and she was discharged next day. In follow-up patient had no complaints and she had regained her voice fully.

DISCUSSION:

Foreign bodies in the respiratory tree are a rare entity and it usually occurs in the pediatric age group. In 1897 Gustav Killen removed a foreign body from the lower respiratory tract with a rigid bronchoscope. During the first part of 20th century Chevalier Jackson perfected endoscopic techniques and made perioral endoscopy an important part of medical sciences.

The incidence of the foreign body in the airways is around 0.60% among the total foreign bodies. This is due to protection of the airways with epiglottis, arytenoids and coughing reflexes⁽⁵⁾.

Foreign bodies are most common in children upto 3-4 years^(1,2,5). The incidence is between 55-75%. This is because children in this age are curious in nature, strong oral tendency and lack of molar teeth⁽¹⁾. Bimodal distribution is seen with second peak between 10-11 years. Adults who are unable to protect the airway such as persons with mental retardation, alcoholism, psychoses and neurological disorders, are also at risk of aspiration due to decreased airway protective mechanisms⁽²⁾. In adults it is called Café coronary.

Foreign body aspiration occurs in boys more frequently than in girls, with a male to female ratio of 2:1^(1,5). Food items are aspirated most commonly. Peanuts are most common^(3,4,6). Others are fruit seeds, fish bones, mutton pieces, and chicken bones. Non-food items include rubber balloons, plastic toys, dental appliance, stones, earrings, and pieces of brick pins whistles. Latex balloons. Some organic foreign bodies cause surrounding tissue reaction, and this may result in a condition known as arachidic bronchitis. This is seen radiographically as a spidery pattern on chest radiography⁽¹⁾.

PATHOLOGY:

Foreign body can settle in hypopharynx (5%), larynx (2-9%), trachea (12%) or bronchus (83%)⁽¹⁾. The

airway obstruction may be partial or complete. Partial obstruction occurs when the upper airways are partially occluded or if obstruction occurs distal to carina. Patient may present weeks to months after the foreign body aspiration. Complete airway obstruction occurs in the upper airways at level above the carina and cause acute respiratory distress. Unfortunately, death occurs if foreign body is not dislodged or removed immediately⁽⁶⁾.

Most foreign body lodge in peripheral airways lodge in the peripheral airways distal to larynx and trachea; however foreign bodies that are large, sharp, or have irregular borders have a greater tendency to become lodged in the larynx or trachea⁽⁶⁾.

CLINICAL FEATURES:

In general foreign body aspiration produces the following 3 phases-

- (1) Initial phase: - choking, gasping, coughing or airway obstruction at the time of presentation.
- (2) Asymptomatic phase: Subsequent lodging of object is followed by relaxation of reflexes that often results in a reduction or cessation of symptoms, lasting hours to weeks.
- (3) Complication phase: foreign body produces erosion or obstruction leading to pneumonia, atelectasis or abscess.

The patient may present with variety of clinical stories. The speed of moving to diagnostic and therapeutic measures depends both on presentation and the potential for sudden obstruction. The severity of symptoms depends upon site, size, composition and period for which foreign body has been present. There may be an acute onset of respiratory distress or patients may have a silent presentation manifested by secondary complications.

The laryngeal foreign body patients presents with hoarseness, croupy cough, stridor, wheezing, dyspnoea, cyanosis, hemoptysis, aphonia, odynophagia or subjective feeling of presence of foreign body. The cough paroxysms are seen in 59% of patients⁽¹⁾. It has been reported that upto 5-50% of patients with foreign body aspirations do not have a contributing history available⁽²⁾.

COMPLICATIONS:

Complications occur due to delay in diagnosis. 67% experience associated complications when the removal delayed for more than 24 hours⁽¹⁾. Bleeding can occur from granulation tissues surrounding the foreign body. Pneumothorax and pneumomediastinum can result from an airway leak. Death can occur in 4.16% due to complete blockage of airway⁽¹⁾.

RADIOLOGY:

In patients in whom foreign body aspiration is suspected, screening radiographic studies include high kilovoltage antero-posterior and lateral imaging of the soft tissues of the neck, inspiratory and expiratory films. This produce greater definition of the airway while decreasing the effect of surrounding tissue⁽¹⁾. If findings are negative for foreign body and clinical suspicion

still remain high, endoscopy should be performed in operation theatre. Radio-opaque foreign bodies are easy to diagnose by using radiographs. Imaging studies have a sensitivity of 73% and specificity of 45% to identify and airway foreign body⁽⁶⁾

TREATMENT:

Medical therapy: Once the diagnosis is done or suspicion is present we should immediately proceed for intervention. A large bolus of food obstructed above the cords may make the patient totally aphonic and patient is unable to cry for help.

- (1) For infants less than a year of age, the head-down back-blow maneuver is the first step recommended. Some investigators are concerned that the sudden air acceleration associated with the back blows may cause an object to paradoxically travel rather into the airway. Indeed, it can make the object move caudally in accordance to Newton's third law of motion, "to every action there is always an equal reaction".
 - (2) The second step recommended for infants, the chest-thrust maneuver, uses sternal compression to increase intrathoracic pressure in an effort to expel the foreign object from the airway. The compressions are similar to those performed for cardiopulmonary resuscitation. The rescuer uses two or three fingers to compress the sternum approximately one-third to one-half the depth of the chest.
 - (3) The Heimlich maneuver is reserved for older children or adults⁽²⁾. It is carried out in the following way
 - ❖ Stand behind the person
 - ❖ Place your arms around his chest and give abdominal thrusts
 - ❖ The residual air in lungs may dislodge the foreign body providing some airway.
- These measures should not be done if patient is only partially obstructed, for fear of causing total obstruction.
- Cricotomy or emergency tracheostomy:** This maneuver should be done only if Heimlich maneuver fails. This should be performed only by doctors and persons trained in this field.

Surgical therapy: Airway foreign bodies are removed most safely under general anesthesia. One has to remember that these patients are considered full stomach but waiting for the stomach to empty is not appropriate because the excitement caused by the episode will delay gastric emptying. If foreign body is in airway, the most common approach has been an inhalation induction and direct laryngoscopy or endoscopy during spontaneous ventilation, though there is a paucity of published evidence that this is superior to an intra venous induction and controlled ventilation. A wide variety of tricks are available for managing difficult airway.

When the endolarynx is visualized, 10% lidocaine is sprayed topically to decrease laryngospasm. The patient inhales 100% oxygen before the introduction of the endoscope. Selection of the most appropriate size of endoscope depends upon the age of the patient. Age appropriate equipment decreases post

instrumentation edema. When the foreign body is visualized, forceps are used to gently grasp the object for retrieval. Excessive pressure or biting motions may lead to fragmentation of the foreign body. After removal, reassess the larynx for other foreign bodies.

The use of steroids or racemic epinephrine is not necessary when age-appropriate endoscopes are used. Antibiotics typically are not prescribed because the source of infection has been removed. Patients are discharged when fully awake and breathing comfortably without the need for supplemental oxygen.

POINTS TO BE REMEMBERED:

- (1) Normal x-ray doesn't rule out foreign body
- (2) Practice with dummy.
- (3) Be ready and equipped
- (4) Don't make a closed case open
- (5) Don't turn a non-obstructing foreign body into obstructing one
- (6) Don't miss the second foreign body.

CONCLUSION:

Cases like which we are reporting is unusual because the patient presented with just sudden loss of voice having no other complaints after a week. It is common that general practitioner or a physician may miss the diagnosis due to the lack of respiratory symptoms and moreover the foreign body was radiolucent. It may be falsely diagnosed as hysteria. The diagnosis becomes more difficult with improper history and absence of characteristic clinico-radiologic features. Complete detailed examination helps to detect such cases. This article highlights the challenges in establishing the correct diagnosis and initiating the appropriate intervention.

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