Case Report

A Near Brush with Death: A Case Report on Oral Foreign Body Impalement

Rachel Christner Marisa Homer Oliver Atar Brian Hynes

Emergency Department of Bluewater Health, Sarnia, ON, Canada

Keywords

Acute care surgery · Emergency room · Foreign body · Pediatric airway

Abstract

We describe a case of an 11-month-old baby presenting to the emergency room with a foreign body in the upper airway. After unsuccessfully attempting to remove the foreign body in the emergency department, the otolaryngologist was consulted. The patient was taken to the operating room, and a comb was successfully removed under conscious sedation. This case illustrates the need of a well-considered strategy for managing the airway of a pediatric patient with a foreign body, while also demonstrating the unique challenges of treating pediatric patients.

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Case Presentation

An 11-month-old female was brought to the emergency department by her mother. She had been playing with a plastic comb when she accidentally fell forward causing the comb to lodge in her oral cavity (Fig. 1). Upon presentation, the child was apprehensive and crying while drooling copious amounts of blood-streaked saliva. Vitals were heart rate 140 beats per min, respiratory rate 32 breaths per min, and 100% oxygen saturation on room air. There was no cyanosis, stridor, or external trauma observed. Immunizations were up to date.

After careful consideration and discussion with the parent, ketamine was administered intramuscularly to provide light sedation while allowing the child to continue to breathe spontaneously. The airway was suctioned by a respiratory therapist, and no brisk bleeding was noted. The head was stabilized while an attempt was made to maneuver the comb; however, it remained immobile and lodged deep in the tissues, possibly behind the tonsillar pillar on one side and deep in the cheek on the other. At this point ear, nose, and throat surgical consultation was obtained.

The consulted otolaryngologist made the decision to move the patient to the operating room for removal of the foreign body in a safer environment. Various options of securing the airway during removal was discussed with the anesthetist. The plan was to remove the comb in one piece, as the handle was too thick to cut through. Intravenous atropine was given to decrease the child's oral secretions and propofol was administered. Two nurses used right-angle thyroid retractors to retract the child's cheeks, allowing full view of the comb. It took two attempts to remove the comb from the oral tissues it was embedded in (Fig. 2). Once it was removed, the child was quickly anesthetized and intubated. A tonsil Boyle-Davis gag was inserted, and chromic sutures were used to close lacerations of the palate, cheeks, and tonsil pillars. Antibiotics were started, and the child was brought to the recovery room in good condition and admitted overnight for observation. She was discharged the following morning once it was ascertained there was no significant oral edema.

Discussion

Pediatric cases of foreign bodies of the upper aerodigestive tract are a serious medical concern, and prompt diagnosis is crucial in reducing morbidity and mortality. Initial evaluation of suspected foreign bodies include posteroanterior and lateral radiographs of the chest and neck [1]. If there is no foreign body seen on the radiograph, diagnosis should not be ruled out as many foreign bodies are radiolucent and do not appear on radiographs. Taking a detailed history and a thorough physical examination help make the correct diagnosis. In this case, however, the foreign body was obvious from the initial physical examination, and any imaging would be unnecessary.

Successful extraction of a foreign body from the airway requires clinical expertise and often specialized equipment [2]. Emergency departments are often the first place a patient will present with an airway foreign body, but emergency physicians may not have the appropriate equipment or clinical experience to safely remove a foreign body. Immediate removal is only necessary in acute emergencies when there is actual or potential airway obstruction, and any unsuccessful attempts at removing a foreign body may make a bad situation worse [3]. In all such cases, consultation with an otolaryngologist should be made if possible and consideration given to the proper instrumentation that would be required to remove the foreign bodies.

With the removal of any upper-airway foreign body, thought must be given to maintaining the airway. Managing an airway of a pediatric patient requires careful consideration as the anatomy of the pediatric airway differs greatly compared to adults. Gagliano and Jafek [4] described these differences and the importance they have in airway management. A pediatric patient has narrower nares, a large tongue relative to the size of the oral cavity, and a narrow cricoid ring. The entire airway is smaller and more labile compared to an adult. When removing a foreign body, the surgeon and the anesthetist must work together to keep the airway

patent, knowing that if the airway becomes compromised, intubation may be difficult, and the proper instruments must be available beforehand.

Pediatric patients, especially infants as in this case, are usually apprehensive, making them oftentimes uncooperative. The parents are often also frantic with worry. They will want their child treated immediately, and it is the physician's duty to first make sure the patient is stable and then form a treatment plan that maximizes safety and minimizes trauma.

A previous publication [2] highlighted the following key points to remember when faced with a case of foreign body impalement.

- There is a good reason for the saying “Don’t run with that in your mouth.”
- The severity of penetrating oropharyngeal injuries might not be apparent on physical examination. Lateral neck X-ray scan or computed tomographic imaging might be necessary. Consultation with an otolaryngologist should be obtained, if possible.
- Given the potential for serious harm, removal of oropharyngeal foreign bodies requires expertise and specialized equipment.

Conclusion

This case illustrates the unique challenges of treating pediatric patients. The young patients may be unwilling or unable to cooperate, and anxious parents can be a hindrance to the examination. Due to the serious nature of foreign bodies in the airway, a consultation with an otolaryngologist should be obtained before proceeding with any removal. Communication between physicians and the creation of a treatment plan will lead to better outcomes and reduce patient morbidity and mortality. Finally, educating parents on the dangers of putting foreign bodies in the mouth will help to prevent any reoccurrences.

Statement of Ethics

The patient's mother has given her informed consent to have her daughter's case published.

Disclosure Statement

The authors have no conflicts of interest to declare.

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Fig. 1. Patient in mother's arms with foreign body lodged in mouth.

Fig. 2. Actual size of foreign body once removed optically.