



An Unusual Case Report of A Laryngeal Foreign Body (Indian Sandbur) in A Paediatric Patient from Western Rajasthan

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Abstract

Background: One of the most frequent emergency scenarios involving children is ingestion of foreign bodies. When inadvertently swallowed or breathed into the aerodigestive system, Indian sandbur is an uncommon foreign body that can lead to severe complications. The seed of *Cenchrus biflorus* is called Indian sandbur (bhurut in the local language). In certain regions, such as Rajasthan, the natural grass *Cenchrus biflorus* plays a prominent role as a foreign body. Understanding the grass and how to consume it can aid in diagnosis and therapy. It is mostly found in rural areas and has a distinct seasonal change during the grazing season. *Cenchrus biflorus* can become lodged in the tracheobronchial tree and supraglottic airway mucosa. The vocal cords were the primary location for them, followed by the pyriform fossa, tonsillar pillar, vallecula, bronchus, and base of the tongue. The growth of this grass determines the peak period of consumption of this foreign substance, which is from September to December.

Case Report: We are sharing a unique case study of a seven-year-old child who unintentionally swallowed a sharp object while playing.

Conclusion: The case illustrates the significance of the history, the necessity of a thorough clinical examination in the event of suspicion, and the urgency of both a bronchoscopy and an urgent laryngoscopy performed under the proper anaesthesia.

Keywords: Foreign Body; Larynx; Child; Indian Sandbur; Vocal Cords; Rural; Laryngoscopy; Bronchoscopy.

Introduction

One typical emergency for children is ingesting a foreign body. Because the elderly is also susceptible, people in their paediatric years are most likely to swallow foreign objects. All age groups may have aerodigestive foreign bodies present [1]. Because of the potential for infection and puncture, it is frequently necessary to remove it in a way that maximizes safety and minimizes damage, particularly when dealing with short, blunt, and sharply pointed items [2,3].

Here, we want to draw attention to one particular foreign body that is rather abundant in Rajasthan, our region of the globe, but relatively uncommon elsewhere. Improved anaesthetic methods and endoscopic removal techniques have greatly decreased mortality. *Cenchrus biflorus* is a species of annual grass in the Poaceae family. Common names include Indian sandbur, Bhurat or Bhurut in India, Haskaneet in Sudan, Aneeti in the Arabic dialect

of Mauritania, K 'arangiya in Hausa, and Ngibbi in Kanuri [4].

It is commonly referred to as "cram-cram" in the Sahelian francophone nations. With culms ranging from 4 to 90 cm tall and spikelets ranging from 3.6 to 6 mm length. Burs attached to passing automobiles, animals, and human clothing disperse seeds. It is most common in Rajasthan's western area, where the seeds are combined with bajra (millet) or used alone to produce bread. In addition, individuals may sustain injuries to their mouths, noses, eyes, and stomachs from the spiky burrs. People may inadvertently consume it when cleaning off spikelets from clothing or when consuming food or beverages that contain bhurut seeds. Its strong spines cause it to become lodged in the upper aerodigestive tract, seldom making it to the oesophagus. The presentation of any foreign body in the airway, no matter where it is located, varies greatly, making diagnosis difficult. Acute complete airway blockage, persistent respiratory symptoms, or a brief period of

relative asymptomatic state are possible outcomes for patients.

The aim of this study was to give a case report of uncommon foreign body burrut impaction in a juvenile kid from western Rajasthan, as there is a dearth of literature on Indian sandbur.

Case Report

A seven-year-old boy youngster was admitted to Apollo E.N.T. Hospital at Jodhpur, Rajasthan, India. This boy's parents provided an odd background in which he complained of voice alterations after eating a foreign body. At the moment of the occurrence, he had some blood droplets come from his mouth cavity, which spontaneously ended. Due to a choking incident, the patient, who lived in a remote part of western Rajasthan, was originally taken to a primary care clinic. When the parents heard their infant coughing rapidly, the mother attempted, but failed, to pick out a suspected FB by blind finger sweeping. Following the first coughing and vomiting, the boy remained asymptomatic.

The physical examination revealed no symptoms of upper or lower respiratory infections. Unremarkable results were likewise obtained from the chest and abdomen X-rays. The youngster gradually developed hoarseness over the next few days, but it wasn't accompanied by dyspnoea, coughing, or stridor. The kid was treated with oral corticosteroids and antibiotics after the physicians determined that the problem was likely caused by a laryngeal injury sustained by the mother while trying to extract a potential FB. He was referred to our hospital because his voice remained hoarse. On room air, his oxygen saturation was 99%. Though there was no sign of stridor or chest retraction, there was noisy breathing. The youngster was identified with a glottic foreign body with surrounding inflammation during a laryngeal endoscopy.

The father of the patient was advised that a foreign body from the larynx will be removed under general anaesthesia. Following appropriate consent, the patient was taken under total intravenous anaesthesia with intermittent ventilation. The emergency tracheostomy had been communicated to the patient's parents; however, it was not required during the procedure. The patient had emergency micro-laryngoscopy and bronchoscopy with a rigid bronchoscope on the same day of arrival. A 1 cm sharp spiny foreign body (burnt) was removed between the false and true vocal cords (Figure 1-5).

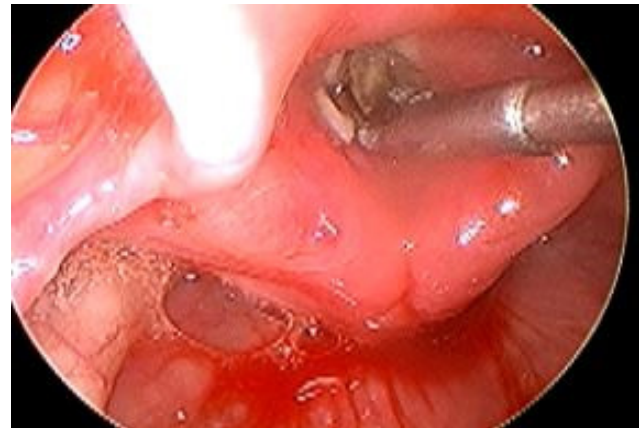


Figure 2: Microlaryngoscopic view showing grasping of foreign body with cup forceps.



Figure 3: Immediately after removal of foreign body

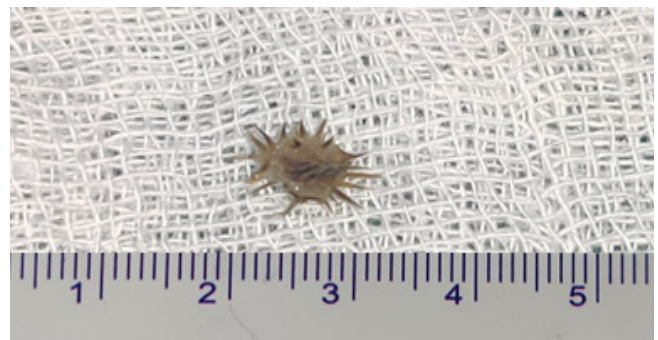


Figure 4: Foreign body showing spikes



Figure 1: Laryngeal endoscopic view revealed foreign body in between false and true vocal folds.



Figure 5: Post removal of foreign body showing inflammation

at glottic region.

The patient was moved to the recovery room while still breathing. His noisy breathing was quickly alleviated. After 24 hours, the patient was discharged in stable condition, on oral antibiotics and steroids for seven days. During the follow-up, the youngster was doing well with no hoarseness.

Discussion

Foreign body aspiration is one of the primary causes of unintentional mortality in children. Food is the most often aspirated object in infants and toddlers, although older children are more prone to aspirate non-food things. The majority of aspirated foreign things traverse the larynx and become trapped in the trachea or bronchus, with an odd one lingering in the larynx. Laryngeal lodgement of aspirated foreign bodies has been documented in 2% to 11% of cases [5-8].

A number of factors influence how an FB aspiration case presents clinically, chief among them being the size of the item and the level of the airway it may become lodged in. Furthermore, the form of the item affects how it appears clinically since it can cause a valve mechanism to open and close during inspiration when the airways widen but cannot be forced to empty [9]. Other factors that are important for the clinical appearance are whether the object is irritating or inert, how old the patient is and how big their airways are, whether the patient has had any previous therapeutic interventions that the airway may react to at first, and how long it has been since the choking episode and the examination [10].

A minimum of one diameter that is equivalent to or somewhat bigger than the glottis or sub-glottis is required for an item to become trapped in the larynx. Additionally dependent on the respiratory cycle phase during which the aspiration occurs is the propensity of an FB to become lodged high in the airway. Due to the airway and ambient pressure being close to equilibrium at the conclusion of inspiration, there is less suction force to impale the item [11]. Choking and coughing are the first reactions to aspiration, which are then followed by sternal retraction, stridor, coughing, and hoarseness [12].

Children cough out most aspirated foreign things that become lodged in their airways on their own, and occasionally laryngospasm can result in a brief episode of cyanosis and temporary choking. Sharp-edged foreign bodies in the larynx can induce both dyspnoea and odynophagia [13].

Ingesting bhurut may trigger a variety of symptoms, based on where it is deposited. Pain localized and FB sensation might be the initial signs [14]. One symptom that has been observed to correspond with the location of impaction in certain investigations on pharyngeal foreign bodies is the perception of a foreign body [15,16].

The foreign body sensation in the throat and hoarseness of voice were the most prevalent symptoms in this case report. moderate dysphagia, dribbling saliva, moderate dysphagia, and a sense of

a foreign mass in the throat are some more symptoms. Irritation caused by bhurut spikelets is the source of the aforementioned symptoms. An oral cavity examination with a tongue depressor is part of the initial evaluation for a patient who has previously complained of an FB feeling in the neck. Direct laryngoscopic examination is the next procedure, which is followed by rigid or flexible endoscopy [17].

Rigid endoscopy offers certain benefits for FB affected in the upper oesophageal sphincter or hypopharyngeal and laryngeal area, despite flexible endoscopy of the ENT having a higher success rate and a reduced risk of perforation [18,19]. Similar to this, in this case report, the patient's oral cavity was first checked after consuming bhurut, and then an endoscopic examination was conducted. Under general anaesthesia, the removal of a laryngeal foreign body is a potentially challenging and dangerous procedure, particularly when involving infants and young children [20,21].

Since the location of the foreign body and any subsequent difficulties affect both the anaesthetic and the surgical approach, a thorough preoperative evaluation is crucial. It takes a team effort from a trained and experienced endoscopist, an equally talented and experienced anaesthetist, and a scrub nurse. Maintaining the airway at all times requires close collaboration between the anaesthetist and otolaryngologist. Using a rigid bronchoscope is the most usual way to remove a foreign body from a patient who is breathing on their own [22,23].

The general consensus is that muscle relaxation is recommended since serious repercussions, such as needless haemorrhage and airway rupture, can occur when a patient bucks forcefully during airway instrumentation, especially when using a rigid bronchoscope [24].

Conclusion

One common medical emergency that an otorhinolaryngologist may see is FB aspiration. When dealing with paediatric patients, it is always necessary to have an acute index of suspicion. Therefore, aspiration should be considered in children without a history of asthma when respiratory symptoms such as hoarseness or stridor occur suddenly and for no obvious explanation, with an emphasis on laryngeal FB. Good outcomes are obtained when the bhurut is removed while under local or general anaesthesia. The occurrence of the issue will be decreased if the community is aware of the right management and avoidance of bhurut exposure. There must be community knowledge in order to seek prompt medical treatment and have the foreign body removed in order to prevent consequences such as vocal cord oedema, which can cause respiratory difficulty and hoarseness.

Compliance with Ethical Standards

The procedure performed in this case report was in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.”

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Conflict of Interest

The author(s) declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this paper.

Ethical Approval

The study was published with written consent of the patient's father.

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