

ORIGINAL ARTICLE

A thorny orotracheal foreign body: One of the common foreign bodies encountered in Rajasthan

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ABSTRACT:

Background: Ingestion of foreign body is one of the common emergency situations for children. **Aim:** Present study aimed to evaluate incidence and type of foreign body in respiratory tract coming to outpatient and emergency ward. **Results:** Present study observed 450 cases of foreign body within the period of time considered in the study of which 30 cases (6.66%) presented with bhurut as foreign body. Incidence was greater among individuals aged 5 to 15 years. However, foreign bodies were observed in patients of all ages. Of the patients included in the study, 14 were females and 16 were males, yielding an almost equal male-to-female ratio. *Cenchrus biflorus* can stuck into mucosa of supraglottic airway and tracheobronchial tree. They were mostly found in the vocal cords, followed by the pyriform fossa, and the tonsillar pillar, vallecula, brochus, base of tongue. The peak time of ingestion of this foreign body is depend upon the cultivation of this grass which is September to November. **Conclusion:** *Cenchrus biflorus* a natural grass has a dominant role as foreign body in specific part like Rajasthan and knowledge about the grass and methods of ingestion is helpful in diagnosis and treatment. It has a specific seasonal variation of grazing season and mainly present in rural environment.

Keywords: *Cenchrus biflorus*, foreign body, orotracheal foreign body

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INTRODUCTION

Ingestion of foreign body is one of the common emergency situations for children. With advance technique of endoscopic removal and better anaesthetic techniques mortality in these patients is significantly reduced. The first successful bronchoscopic removal of foreign body was performed by Gustav Killian on March 30, 1887¹. Here we highlight one specific foreign body which is quite common in our part of world i.e Rajasthan but is quite rare in other parts. *Cenchrus biflorus* is a species of annual grass in the Poaceae family. Common names include Indian sandbur or Bhurut in India, Haskaneet in Sudan, Aneeti in the Arabic dialect of Mauretania, K 'arangiya in the Hausa language of Nigeria, and Ngibbi in the Kanuri language of Nigeria². *Cenchrus biflorus* is one of the common foreign body ingested by children in Rajasthan. Mainly it is characterized by distinctive ovoid and diamond shaped disc at the base of bur and the flattened grooved spikes. The species are grooved with heavy margins and slightly hooked spikes. In India this species is widely distributed in Rajasthan and Punjab, in Rajasthan and its Marwar region seeds are used to make bread, either alone or mixed with bajra (millet)².

MATERIAL AND METHOD

The Cross-sectional retrospective historical cohort study based on patient charts was conducted in the department of Otolaryngology and Head Neck Surgery, Sardar Patel Medical College and Associated

Group of Hospitals, Bikaner, Rajasthan, India. Study included all cases of suspected foreign body in respiratory tract coming to outpatient and emergency ward. Foreign body in ear, nose were excluded from this study. Our main aim is to highlight about the grass *Cenchrus biflorus* as a common foreign body in western part of Rajasthan and its anaesthetic management.

All patients who were subjected for removal of bhurut over the period of 2 years were included in this study. All patients with no history of foreign body aspiration who were critically ill to undergo investigations or rigid bronchoscopy were excluded. Direct laryngoscopy/ bronchoscopy was performed in cases; it was done as an emergency procedure for those children who had throat pain, loss of speech or acute respiratory distress, in remaining cases it was an elective procedure.

Procedure was performed under general anaesthesia. Intravenous cannula was inserted in all the cases before the procedure. Cases were monitored with pulse oximeter, blood pressure and ECG. Hydrocortisone and Dexamethasone was administered before anaesthesia. Preoxygenation with 100 % oxygen was done for 3 min. Premedication was given intravenous inj.glycopyrrolate 0.04 mg/kg and inj.fentanyl 1 ug/kg. Induction was done using inj. propofol 1-2 mg/kg followed by inj.succinylcholine 1-2 mg/kg. Mask ventilation was done to maintain oxygen saturation before direct laryngoscopy or inserting bronchoscope. Once the scope was introduced beyond the glottis, ventilation was

continued by Jet ventilator with oxygen otherwise apneic ventilation was done. Intermittently succinyl choline was administered till the procedure was completed. After the foreign body removal ventilation was continued till return of spontaneous respiration. Patients were observed till they became fully awake.

RESULTS

The ENT emergency unit saw 450 cases of foreign body within the period of time considered in the study of which 30 cases presented with bhurut as foreign body. Thus % of bhurut of total foreign body was 6.66% which is quite significant. Incidence was greater among individuals aged 5 to 15 years. However, foreign bodies were observed in patients of all ages. Of the patients included in the study, 14 were females and 16 were males, yielding an almost equal male-to-female ratio. *Cenchrus biflorus* can stuck into mucosa of supraglottic airway and tracheobronchial tree. They were mostly found in the vocal cords, followed by the pyriform fossa, and the tonsillar pillar, vallecula, brochus, base of tongue. The peak time of ingestion of this foreign body is depend upon the cultivation of this grass which is September to November.

DISCUSSION

This study highlights an important role of *cenchrus biflorus* as orotracheal foreign body in patients seen in ENT emergency department in tertiary care unit in western part of rajasthan for consecutive 24 months. Total 450 patients were identified with foreign body in orotracheal route of which bhurut was 6.6% i.e total 30 cases with particular seasonal variation. It provides rich and valuable wet season grazing from June to November³.

Foreign bodies have their social and geographic peculiarities. For example, cases involving cotton seeds and grasses are more commonly seen in developing countries. Small plastic parts are the most frequent finding in developed countries⁴

Cenchrus biflorus is a genus of panicoid grasses with terete, solid culms and somewhat fibrous root. The annual plants are usually solitary or may occasionally form large clumps, whereas the perennials, some of which have bulbous bases, may produce large tussocks or mats. The inflorescence of members of this genus is a spike like panicle consisting of few to numerous fascicles (burs or involucre) within which one or more spikelets are enclosed⁵.

C. biflorus is mostly found in semi-arid and arid regions usually on dry sandy soils on old farmland and waste places and in cultivated, overgrazed or otherwise disturbed areas. It grows in areas with low rainfall, below 600 mm per annum, up to 1300 m altitude⁶.

The bur of this grass is light weight and is transported through various ways like with air or water or stuck with animals. Children are more susceptible, specially in rural areas where drinking water pots are kept in

open field and may sometime be left uncovered. Drinking of water from these pots or inhalation of air containing these light weighted bur is mostly the cause of this foreign body. It has multiple spikes which adhere in the mucosa of oral cavity and vocal cord or tracheobronchial tree. Dr L. chhangani and Dr. N K Soni has mentioned about properties of *cenchrus biflorus* as foreign body of orotracheal route.^{5,7}

Patients usually present with pain in the throat, loss of speech, stridor, dyspnea, sudden onset of cough and intractable and recurrent lower respiratory tract infections⁸. Complementary tests are rarely needed in FB patients. History is the main stay of diagnosis. Direct visualization during physical examination is usually enough to identify and locate this grass. X-ray imaging may help identify radio-opaque foreign bodies, but it is not useful in the diagnosis of radiolucent objects such as cotton seed and grass bur. Mostly this bur is stuck on the vocal cords and severe pain is associated with it. According to some authors, complementary tests should only be performed in patients suspected with foreign bodies when careful physical examination fails to produce additional evidence⁹.

General anaesthesia is preferred technique for removal of *cenchrus biflorus*. Either direct laryngoscopic removal in case of supraglottic adherence or rigid bronchoscopic removal in case of tracheobronchial adherence is best facilitated by general anaesthesia with bag mask ventilation. Dr Palakshappa in 2004¹⁰ mentioned that the preferred technique is general anaesthesia for foreign body removal. Complications after removal of bur are bleeding from the mucous membrane, pain and severe coughing after waking up from general anaesthesia.

CONCLUSION

Cenchrus biflorus a natural grass has a dominant role as foreign body in specific part like Rajasthan and knowledge about the grass and methods of ingestion is helpful in diagnosis and treatment. It has a specific seasonal variation of grazing season and mainly present in rural environment. It may be unusual foreign body in other parts but may present sometime so knowledge about this may be useful.

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