

Original Research Article

Effectiveness of parents kiss for removal of pediatric nasal foreign bodies

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ABSTRACT

Background: Lodging of foreign body in the nose is one of the common accidents in pediatric age group leading to emergency consultation. Our aim was to evaluate the efficacy of mouth to mouth blowing to remove or facilitate removal of nasal foreign body.

Methods: This was a prospective interventional study on 46 children aged 2-6 years presenting to pediatric emergency department at Sher- I-Kashmir institute of medical sciences with a history of unilateral foreign body in nose, between February 2016 and January 2019. At the most, three attempts of Mouth-to-mouth blows were given to remove the foreign body. In case of failure, instrumentation was used. The data was tabulated according to age, Gender, type of foreign body and management received.

Results: Out of 46 children, 16 of the children were girls and 30 were boys. Parents kiss was successful in removing nasal foreign body in 34 (79.31%) children. Beads were the most common types of foreign bodies (36.96%). The most common presentation was report of accidental placement of something in the nose, other presentations were bleeding from the nose and unilateral discharge. 22 of 27 (81.48%) 'Simple' foreign bodies were removed by parents kiss while 12 of 19 (63.15%) 'complex' foreign bodies were removed by parents kiss.

Conclusions: For children presenting with foreign body in the nose, mouth to mouth blowing should be the first maneuverer to facilitate removal.

Keywords: Parents kiss, Mothers kiss, Nasal foreign body

INTRODUCTION

Toddlers (1-3 years) and preschoolers (3-6 years) are literally darting away from infancy in search of new adventures. They're learning to talk, to walk and run, and to explore their surroundings, asserting their independence. Exploring the surrounding things with their hands, mouths and other orifices predisposes them to various kinds of accidental ingestion, inhalations and lodging foreign bodies in nose.

Nasal foreign bodies are a commonly encountered problem in pediatric and ENT acute practice. Personal

experience and previous studies have shown that they occur predominantly in children between 2-5 years old.¹ The reasons for children placing foreign bodies in orifices such as the ears and nose include discovery, curiosity, mimicry, boredom, mental retardation, and attention deficit and hyperactivity disorder (ADHD).² Foreign bodies are classified as organic and inorganic. Generally, inorganic materials are beads, toys, foam, batteries and magnets, and organic foreign bodies are often paper, sponge, nuts and beans.²

Leaving a nasal foreign body has the potential risk of epistaxis, purulent rhinorrhea, erosion of septum in case

of button batteries and metals and, rarely, aspiration into the tracheobronchial tree. Nasal foreign bodies are characterized by early onset of nasal discharge, which becomes purulent and offensive after a few days.³ Also, nasal obstruction and epistaxis may occur. It is a classical axiom that unilateral foul-smelling nasal discharge in children is highly suggestive of nasal foreign bodies.³ Various methods of nasal foreign body removal have been described such as using a wax hook, old Eustachian tube catheter, Foley and Fogarty catheters, cupped forceps, haemostats, wire ear loops, and cyanoacrylate glue. Table 1 shows various techniques for removal of nasal foreign bodies and their possible complications. All these methods are invasive, can cause trauma to the nasal mucosa, and have the potential risk of further displacing the foreign body with possible aspiration (Table 1).⁴ Several positive pressure techniques have also been described (e.g. using bag-valve-mask apparatus, oxygen tubing attached to the nonoccluded nostril), but none have been widely accepted for regular use.^{5,6} These maneuvers aim to build up positive pressure behind the foreign body, which would then force it out of the nostril. Some positive pressure methods offer advantage of being noninvasive, quick and do not require procedural sedation; they however require a relatively calm and cooperative child. Positive pressure through mouth to mouth blowing offers such advantage. The 'parents' kiss' or 'mother's kiss' is a unique noninvasive method which works on the principle of building positive pressure behind the foreign body, but does not require the child to be restrained, and can be performed by the parent without any physical contact from the attending doctor. The "mother's kiss" is a technique first described in 1965 for nasal foreign body removal in children. A trusted adult occludes the unaffected nostril and blows into the child's mouth gently until they feel resistance caused by closure of the glottis, and then they blow more forcefully to expel the foreign body.⁷

Aim and objectives

The aim of current study was to evaluate the effectiveness of the 'parent's kiss' for removal of nasal foreign bodies in children. The primary objective was to determine removal of the foreign body by repeating the procedure at maximum of three times while the secondary objective was to determine the causes of failure to expel foreign body with parents kiss.

METHODS

This was a prospective interventional study conducted on 46 children aged 2-6 years who had presented to our department of Pediatric emergency at Sher-I-Kashmir institute of medical sciences with a history of unilateral foreign body nose of less than 72 hour duration visible with anterior rhinoscopy (or visible with an otoscope). Those children who had a history of insertion of foreign body in the nose that was not visible with anterior rhinoscopy were also included in the study. The study

was conducted for a period of 3 years between February 2016 to January 2019. Children with nasal foreign body of more than 72-hour duration and those with significant nasal discharge or significant bleeding were excluded from the study.

Parents gave verbal consent for participation in the study. For observation of foreign body, the child was made comfortable on the examination table or in the parents lap and a rhinoscope or otoscope was used to observe the foreign body. The procedure was then clearly explained to the parents and to the child. A firm seal was then made by placing index finger and thumb in a circular fashion on child's lips and after occluding the noninvolved nostril with other hand, a short and rapid puff of air was blown into child's mouth. This was repeated up to a maximum of three times. For those children in whom the procedure was unsuccessful after three attempts, Jobson Horne probe or forceps were used to remove the foreign body. Failure of instrumental removal prompted referral to ENT department. Data analysis was done with statistical description in the form of tables and charts which included age of patients, gender, type of foreign body, methods of removal, success of procedures and number of referrals to ENT department.

RESULTS

Out of 46 children, 16 of the children were girls and 30 were boys. Age distribution is shown in the table and chart (Table 2, Figure 1).

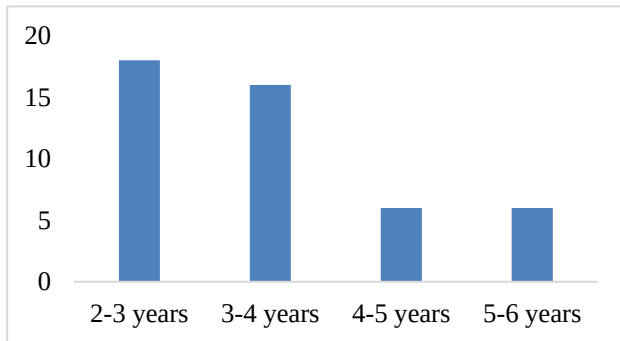
Table 1: Techniques for removal of nasal foreign bodies with complications.

Technique	Complications
Instrumentation	Trauma, displacement, aspiration
Balloon catheter	Trauma, displacement, aspiration
Suction	Trauma, displacement
Positive pressure	Barotrauma
Nasal wash	Aspiration, nasal saline reflux

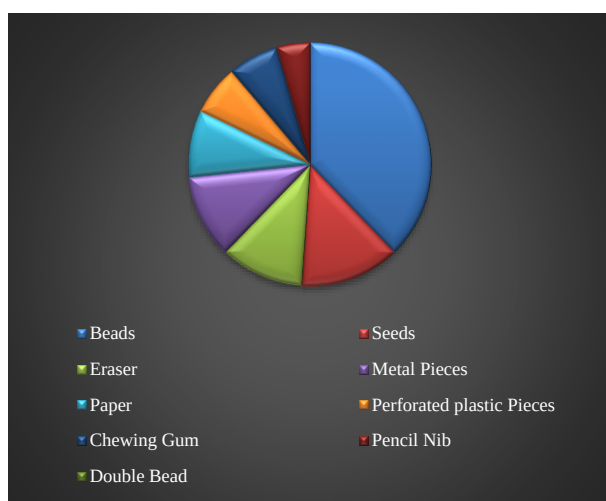
Beads or beaded objects, both inorganic and organic were the most common types of foreign bodies (36.96%). Other foreign bodies were seeds, paper, eraser, metal pieces, plastic pieces, chewing gum and pencil nibs. A double bead was found in one child (Table 3, Figure 2). The most common presentation was report of accidental placement of something in the nose, other presentations were bleeding from the nose and unilateral Discharge. The procedure was successful in 34 (79.31%) children, mostly in the first attempt only. On the basis of complexity of foreign body, they were divided into two types, simple foreign bodies which included small/regular/solid/ non-fenestrated and complex foreign bodies which included large/irregular/tubular/fenestrated.

Table 2: Age distribution of nasal foreign bodies.

Age (years)	Male	Female	Total, N (%)
2-3	12	6	18 (39.13)
3-4	11	5	16 (34.78)
4-5	5	1	6 (13.04)
5-6	2	4	6 (13.04)
Total	30	16	46 (100)

**Figure 1: Age based distribution.****Table 3: Percentage distribution of types of foreign bodies.**

Type of foreign body	N	%
Beads (plastic/peas/beans)	17	36.96
Seeds	6	13.04
Rubber/eraser	5	10.87
Metal pieces	5	10.87
Paper	4	8.70
Tubular plastic pieces	3	6.52
Chewing gum	3	6.52
Pencil nib	2	4.35
Double bead connected in middle	1	2.17
Total	46	100

**Figure 2: Percentage distribution of types of FB.**

Total 22 of 27 (81.48%) simple foreign bodies were removed by parents' kiss while 12 of 19 (63.15%) complex foreign bodies were removed by parents kiss (Table 4). Therefore, even though the success of removal of foreign body by parents kiss was high, it was higher for Simple foreign bodies. Out of 12 foreign bodies that could not be removed by parents' kiss, 7 (58.33%) were removed with probe or forceps. 5 children were referred to department of ENT who had failed both parents kiss and Instrumental removal.

DISCUSSION

Lodging of foreign body in the nose are commonly encountered accidents in toddlers, preschoolers and school going children, the incidence in this age group reflective of their nature to explore surrounding objects with their hands and orifices.

The parents kiss as a method for removal of nasal foreign body offers various advantages: Firstly, the technique can be instigated by the paediatric emergency department triage nurse, with a good chance of success (one-half of patients). Secondly, it reduces the need for more invasive and distressing techniques such as instrumentation. Thirdly, success of the kissing technique means that the patient can be discharged from the ED within minutes of arrival.⁸

Current study showed higher rate of incidence among males (65.21%) vs. 34.78% in females. Similar findings of higher incidence in males were seen in other studies.^{1,9} However, one study showed higher incidence in females.³ Beads were the most common foreign bodies in our study (36.96%) followed by seeds (13.04%). Beads as the most common foreign bodies followed by seeds as second most common were also seen by Francis et al in their study.³ We did not see any button battery as a nasal foreign body in our study. Button batteries as nasal foreign bodies have been reported by Francis et al and Hong et al.^{3,10}

Parents kiss was seen to be an effective method for removal of nasal foreign body. However, effectiveness of parents kiss was seen to be affected by the type of foreign body; in general a smaller, smooth, foreign body that did not allow the air to pass through it had higher chances of removal by 'mouth to mouth blows' than a larger, irregular foreign body that allowed the air to pass through it. Similar differences in the success of removal of nasal foreign bodies was seen based on the shape in the study conducted by Purohit et al.⁴ However Cook et al did not see any difference in success of technique when used to remove smooth regular vs. irregular nasal foreign bodies.⁷

Most of the nasal foreign bodies that were removed by parents kiss were dislodged in the first attempt of mouth to mouth blows only.

Table 4: Types of foreign bodies on the basis of morphology and removability with different methods.

Parameters	Simple (small /regular /solid/non perforated), N (%)	Complex (large/irregular/tubular/perforated) , N (%)	Total), N (%)
Successful removal with parents' kiss	22/27 (81.48)	12/19 (63.15)	34/46 (73.91)
Removal with instruments	3/5 (60)	4/7 (57.14)	7/12 (58.33)
Referral to ENT	2	3	5 (10.87)

CONCLUSION

The parents kiss because of its unique advantages in offering a quick, noninvasive, highly acceptable and effective removal of nasal foreign bodies should be the first technique employed for facilitating their removal.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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