Bangladesh J Otorhinolaryngol 2015; 21(2): 102-109

Original Article

Experience of management of nasal foreign bodies in Out patient department of a Tertiary Hospital

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Abstract

Objectives: *To evaluate 113 cases of nasal foreign body removal with regard to type of foreign body, location, complications, techniques for removal, age , genderand to present the results of theevaluation.*

Methods: *Between April 2009 to May 2011, a total of 113 nasal foreign bodies were attended inOutpatient Department ofENT, Head and Neck Surgery in Sir Salimullah Medical College, MitfordHospital,Dhaka. A retrospective reviewwas undertaken to evaluate the parameters related to the nasal foreign body and their removal and the data wereanalyzed.*

Results:*113 cases of nasal foreign bodies were attended in Outpatient department of ENT, Head and Neck Surgery in Sir Salimullah Medical College, Mitford Hospital, Dhaka. Of these 113 cases, 101cases were removed in outpatient department and 12 cases were admitted and were removed under general anaesthesia. We found higher incidence in patients between ages 2 and 5 years. The distribution of nasal foreign body was 44.25% in male and 55.75% in female.*

Conclusion:Nasal foreign bodies are encountered daily in our routine clinical practice in the pediatric age group. General anaesthesia is required in uncooperative agitated patients or impacted foreign body to avoid complications.Button batteries and penetrating foreign body must be treated immediately.

Keywords: *Nose, Foreign body, Pediatrics, General anaesthesia.*

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Introductlon

When children start moving by themselves, they have access to many objects that have to be explored. This process can cause the placement of objects in orifices[1]. The etiology of nasal foreign body has been attributed to curiosity or playful insertion of foreign bodies into their own or others' body parts, accidental entry of foreign bodies and habitual cleaning of the nose with objects.

Nasal Foreign body is not uncommon in Bangladesh, especially in paediatric age

group. Children usually introduce foreign body in nose when playing with toys, household or other things.Nasal foreign body may present with foul smell in nose,unilateral purulent nasal discharge,bleeding from nose and nasal obstruction.

The patients may present asymptomatically after having been witnessed inserting the item. The presence of a foreign body in nose may not be life-threatening but it may cause morbidity. Complications may arise from the foreign body itself or from attempt to remove it out. The method of removal usually depends on the type of foreign body, its position and co-operation of the patient[2].

Nasal foreign body is relatively easily removed in an outpatient department; if theforeign body is a battery or is impacted, however, special precautions have to be taken. In addition, if the child is nonco-operative,general anaesthesia is usually required to prevent complications. Due to their small size, batteries can easily be inserted into various orifices such as nose, ear or mouth.Batteries are the type of foreign body most commonly associatedwith early complications despite improvements in product safety[3].

Aim of study

The aim of this study is to analyze nasal foreign body in terms of type, site, age and gender distribution and method ofremoval.

Methods

A retrospective study was performed in the Outpatient Department of ENT &Head and Neck Surgery, Sir Salimullah Medical College, Mitford Hospital, Dhaka. The study population includes thenumber of patients with nasal foreign body who presented in the Outpatient Department (OPD) from April 2009 to May 2011. The data were obtained from the hospital recordbooks. Anterior rhinoscopywas done to diagnose nasal foreign body.

Most of the nasal foreign bodies were removed in OutpatientDepartment, some were admitted for removal under general anaesthesia. Instruments such asNasal foreign body hook, Jobson Horne probe, Tilleyforceps were used in foreign body removalfrom the nose.

Removal of foreign body is not always easy. It requires proper instrumentsand skill. In our study, most of the nasal foreign bodies were removed in the Outpatient Department with orwithout Local Anaesthesia. Out of 113 nasal foreign bodies, 12 (10.62%) required General Anaesthesia andrest 101 (89.38%) were removed with or without Local Anaesthesia.

A co-operative patient is needed to detect and remove a nasal foreign body successfully. The patient is usually examined in the upright sitting position carried out for routine otorhinological examination. A child may be best examined by tilting the head back slightly so that the floor of the nose is visible to the examiner. For this an adult may need to restrain a child and hold the head steady.

Results

In this study, 113 patients visited this hospitalwithnasal foreign body. Mainly pediatric age group wasinvolved, commonly 2-5 years age group 88 (77.88%). 2-3 years age group40 (35.40%) followed by 3-4 years 26 (23%) and 4-5 years 22 (19.47%). The incidence is decreasing after 5 years, still 2 cases were found after 10 years of age.

Table-I
Age Variation (n=113)

Age	No.			Percentage
	Male	Female	Total	
	0	2	2	1.77
2-3 yrs.	17	23	40	35.40
3-4 yrs.	13	13	26	23.00
4-5 yrs.	7	15	22	19.47
5-6 yrs.	5	4	9	7.96
6-7 yrs.	3	1	4	3.54
7-8 yrs.	3	2	5	4.42
8-9 yrs.	1	1	2	1.77
9-10 yrs.	0	1	1	0.88
> 10 yrs.	1	1	2	1.77
Grand Total	50	63	113	100

In this study, 50 (44.25%) were male and 63 (55.75%) were female. The sex ratio showed femalepredominance with Male to female ratio is M : F 1 : 1.26 showed in figure 1.

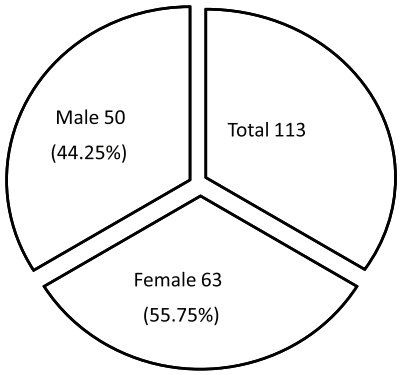

Fig.-1: *Sex Variation (n=113)*

Majority of the patient with the nasal foreign body in this study group presented with no symptoms 39 (34.51%), followed by foul smelling nasal odour 34 (30.09%) and unilateral nasal discharge 31 (27.43%). A small proportion presented with nasal obstruction 2 (1.77%), bleeding from nose 2 (1.77%) and discomfort in only one case (0.88%). (Table-II)

Table-II
Mode of presentation (n=113)

Mode of presentation	No.	%
Discomfort	1	0.88
Unilateral nasal discharge	31	27.43
Foul smelling odor in nose	34	30.09
Bleeding from nose	2	1.77
Nasal obstruction	2	1.77
Asymptomatic	39	34.51
Total	113	100.00

We found the most common typeof foreign body was seed 39(34.51%), followed by plastic ball 19 (16.81%), others 13(11.50%) and batteries 10(8.84%). Foam 8 (7.08%), papers 8(7.08%), Rubber 6 (5.31%), buttons 5 (4.42%) are also found. (Table-III)

Table-III

Type of foreign body (n=113)

Type of foreign body	No.	%
Seed	39	34.51
Rubber	6	5.31
Plastic Ball	19	16.81
Battery	10	8.84
Foam	8	7.08
Button	5	4.42
Paper	8	7.08
Chalk	1	0.88
Nose Ring	4	3.54
Other (Undifferentiated)	13	11.50
Total	113	100

In the majority of patients, the foreign body had been inserted in the right nasal cavity 66 (58.41%), compared to the left nasal cavity 46 (40.71%), with 1 case of insertion of foreign body in both nasal cavity was found (0.88%). (Table-IV)

Table-IV

Site of the nasal foreign body (n=113)

	No.	%
Unilateral		
Right Nasal Cavity	66	58.41%
Left Nasal Cavity	46	40.71%
Bilaterial	1	.88%

There was various duration of residence of nasal foreign body. Most of the cases came within 1 week 63 (55.75%), 27(23.89%) recent cases with soon after introduction within 24 hours were attended. Surprisingly, 10 (8.85%) cases of nasal foreign body came after one month. (Table-V).

Table-V

Duration of foreign body residence (n=113)

Removal	No.	%
Within a day	27	23.89
Within 1 week	63	55.75
Within 1 month	13	11.50
More than 1 month	10	8.85
Total	113	100

Out of 113 cases of nasal foreign bodies, 101 (89.38%) wereremoved in outpatient department with or without local anaesthesia, rest 12(10.62%) were admitted and removal of foreign body were required general anaesthesia.In all cases, removal was done with direct instrumentation either by extraction or by suction. Other techniques like posterior displacement, irrigation or positive pressure either by parent kissing or Ambu bag were not required. (Table-VI)

Table-VI

Techniques of Removal (n=113)

Types of Techniques for removal			Type of nasal foreign body No.	%
Direct Instrumentation	Extraction		109	96.46
	Suction		4	3.54
Others	Posterior Displacement			
	Irrigation			
	Positive-pressure	Parental Kissing	Not applied/required	
		Ambu bag		

Discussion

Nasal foreign bodies are common problems in the pediatric age group[4,5], encountered in our daily practice.

In our series, 88 cases of nasal foreign body is found out of 113 (77.88%) between 2-5 years of age, of this 40 cases (35.40%) in 2-3 years, 26 cases (23%) in 3-4 years and 22 cases (19.47%) in 4-5 years of age respectively. Total 42 (37.17%) cases were found in 0-3 years and up to 10 years of age it was found 109 (96.46%) cases. It is close toGregori D. et. al.[6],where it is 43% within 0-3 years age group but not similar to some studies like 50% by Kadish HA et. al.[5], 55.1% by Alberto Chinskiet. al.[7] and 85.7% by Tong MC et. al.[8]

In one series by A.A. Yaroko et.al.[9], the most common pediatric age groupinvolved was 3 years (48.83%) followed by 2 years (18.6%)and theleast common was 7 to 9 years (2.33%) similar to our study. In another study by Ramesh Parajuliet. al.[10], of the total 28 patients with foreign body in the nose, 27 (96.42%)were of the age group < 10 years which is similar to our study. In another study by Rahul K. Shahet. al.[11],55% were younger than 2 years, is not similar to our study.

In our study, it was female preponderance, male 50 (44.25%) and female 63 (55.75%) with a male female ratio is 1: 1.26. It is similar with male to female ratio 1:1.18 by Alberto Chinskiet. al.[7],M:F 1:1.05 by Gregori Det. al.[6],and byOgunleye AOet. al.[12]where male to female ratio was 1:1.26 (Male47;Female 59)and not similar with Tong MCet. al.[8] where M:F ratio is 1.05:1.

In our series, majority of presentation we found asymptomatic in 39 (34.51%) cases, followed by 34 (30.09%) cases with foul smelling odor and unilateral nasal discharge in 31 (27.43%) cases. In one large series with 1559 cases of nasal foreign body by Alberto Chinskiet. al.[7],themost frequent symptoms were cacosmia (96, 6.16%) and rhinorrea (59, 3.78%), however, in the majority of cases (1342, 86.08%) children were asymptomatic which is similar to us. In another series by Ogunleye AOet. al.[12], the mode of presentation are mainly mucopurulent nasal discharge 25 (23.6%), foul nasal odour 10 (9.4%), epistaxis6 (5.7%), nasal obstruction and mouth breathing 3 (2.8%) and 2 (1.9%) cases respectively which is like our study.

In our series in the type of foreign body we found seeds 39 (34.51%), plastic ball 19 (16.81%), other undifferentiated 13 (11.50%), battery 10(8.84%), paper 8 (7.08%), foam 8 (7.08%), rubber 6(5.31%) mainly. Interestingly we found 4 cases of nose ring. In a large series of nasal foreign body by Alberto Chinskiet. al.[7] found Pearls (399, 25.59%), Pins, nails, screws, floats (119, 7.63%), Paper (93, 5.97%), Stones (92, 5.90%), Rubber (82, 5.26%), Seeds (63, 4.04%) mainly with only one cases of battery was found (0.06%). In another series by Ogunleye AOet. al.[12] the type of foreign body were found as the most common nasal foreign bodies were seeds 34 (32.1%),polyurethane foams12 (11.3%), stones 11 (10.4%), plastic 10 (9.4%), beads 6 (5.7%) and erasers 6 (5.7%). There is a little variation of object selection by children in insertion in different studies. Button batteries are not uncommon as nasal foreign body. Children always choose it because of its shape, size and shiny character thinking like a toy. Button batteries as foreign bodies are dangerous because of their ability to cause liquefaction necrosis on contact with moist tissue. Prompt identification and rapid removal of these foreign bodies is recommended[13].

In our study, we found nasal foreign body mainly unilateral with only one case of bilateral. Among the unilateral, 66 (58.41%) cases were found in right nasal fossa and 46 (40.71%) in left. The right to left ratio is R:L

1.43: 1. It is similar with R:L 1.23: 1 by Alberto Chinski et. al.[7]and R:L 1.46: 1 by Ogunleye AO et. al.[12]

The time elapsed after insertion of objects in nose has a great significance because of complication. Metallic button batteries, commonly included in many toys, are small and shiny, making them strong candidates for nasal insertion. Once inserted into the nose, they cause destruction because of the low-voltage electrical currents, electrolysis induced electrolysis induced release of sodium hydroxide and chlorine gas; if their alkaline contents leak they could also induce tissue liquefactive necrosis. Complications are common, therefore button batteries require prompt removal.[13,14,15] The use of small powerful magnets as imitation earrings could have dramatic consequences[16].When children attempt to imitate bilateral nasal piercing with magnet-backed jewelry, the intranasal magnets may attract each other and become joined across the nasal septum, resulting in substantial pressure on the nasal septum and its delicate capillary network. This presents a timedependent risk of septal ischemia, necrosis and perforation, with pressure necrosis beginning within hours. Therefore, magnets across the septum should be treated as an urgent medical condition and managed in the emergency department.[1 7,18,19,20,21]

In our study, time of residence of nasal foreign body, i.e., majority are removed within 1 week (63, 55.75%), followed by within a day (27, 23.89%), with rest are removed after a week. In a study by Okoye BCet. al.,119 (88.81%) out of 134 patients presented within the 1st day with only 15 (11.19%) presenting late[22].

Nasal foreign bodies are removed by a number of techniques. Positive-pressure expulsion is accomplished by orally applied pressure via a parent's mouth or an Ambu bag or by nasally applied pressure via a catheter or an oxygen source. The object can be washed out with nasally applied saline. Direct mechanical extraction is possible with a variety of tools, including forceps, hooks, or balloon-tipped catheters. In our study all the cases nasal foreign body were removed by direct instrumentation, 109 (96.46%) by extraction and 4 (3.54%) by suction. Other techniques such as posterior displacement, irrigation or positive pressure by parent kissing or by Ambu bag were not required. Out of 113 cases, 101 were removed with or without local anaesthesia and in 12 (10.62%) cases general anaesthesia were required. In a study byOkoye BCet. al. 6 (4.48%) cases out of 134 required general anaesthesia[22].

Quite often, nasal foreign body can be easilyremoved; however, unsuccessful attempts at removal may causebleeding, pain or local injury, hindering further attempts[23]. Anumber of factors have been associated with the success of foreignbody removal, including duration of foreign body residence, foreignbody characteristics (size, shape and texture), patient co-operationduring removal, trauma to the nasal cavity, ability to visualize theforeign body and surrounding structures, available equipment andthe skill of the attending physician[4].

Conclusion

Foreign bodies in nose were found more frequently in children. Removal of nasal foreign body is one of the commonest procedures which can be done in otolaryngology outpatient department and most of the nasal foreign bodies can be easily removed in the Outpatient department. Parents/caretaker should not allow children to play with toys, household objects or other small objects to prevent the risk of insertion of foreign body in natural orifices. For easy removal and to prevent serious complications, avoid attempts in unskilled hand and repeated removal attempts. Timely referral is very important.

References

1. H.Rodrý´guez, G.C. Passali, D. Gregori, A. Chinski, C. Tiscornia, H. Botto, et al., Management of foreign bodies in the airway and oesophagus, Int. J. Pediatr. Otorhinolaryngol.14 (76 Suppl. 1) (2012) 84–91.
2. S.T. Baluyot, Foreign bodies in the nasal cavity, in: M.M. Paparella, D.A. Shumrick (Eds.), 2nd ed., Otolaryngology, vol. 3, WB Saunders, Philadelphia, PA, 1980, pp. 2009–2016.
3. Loh WS, Leong JL, Tan HKK. Hazardous foreign bodies: complicationsand management of button batteries in nose. Ann PtplRhinol Laryngol2003;112:379–83.
4. Botma M, Bader R, Kubba H. 'A parent's kiss': evaluating an unusual methodfor removing nasal foreign body in children. J LaryngolOtol 2000;114:598–600.
5. Kadish HA, Corneli HM. Removal of nasal foreign bodies in paediatric population. Am J Emerg Med 1997; 15:54–6.
6. Gregori D, Salerni L, Scarinzi C et al. Foreign bodies in the nose causing complications and requiring hospitalization in children 0–14 age: Results from the European survey of foreign bodies injuries study. Rhinology 2008; 46: 28–33.
7. Alberto Chinskiet. al.,Francesca Foltran, Dario Gregori, Desiderio Passaliand Luisa Bellussi. Nasal foreign bodies: the experience of the Buenos Aires pediatric otolaryngology clinic. Pediatrics International (2011) 53, 90–93.
8. Tong MC, Ying SY, van Hasselt CA. Nasal foreign bodies in children. Int. J. Pediatr. Otorhinolaryngol. 1996; 35: 207–11.
9. A.A. Yaroko , A. Baharudin.Patterns of nasal foreign body in northeast Malaysia: A five-year experience.European Annals of Otorhinolaryngology, Head and Neck diseases xxx (2015) xxx–xxx
10. Ramesh Parajuli. Foreign Bodies in the Ear, Nose and Throat: An Experience in a Tertiary Care Hospital in Central Nepal. Int Arch Otorhinolaryngol 2015;19: 121–123.
11. Rahul K. Shah, MD; Anju Patel, BA; Lina Lander, ScD; Sukgi S. Choi, MD , Management of Foreign Bodies Obstructing the Airway in Children.Arch Otolaryngol *Head Neck Surg.* 2010;136(4):373-379.
12. Ogunleye AO, Sogebi OA.Nasal foreign bodies in the African children.Afr. J. Med. Med. Sci.2004;33: 225–8.
13. Capo JM, Lucente FE. Alkaline battery foreign bodies of the ear and nose. Arch. Otolaryngol. Head Neck Surg. 1986; **112**: 562–3.
14. Hong D, Chu YF, Tong KM, Hsiao CJ. Button batteries as foreign bodies in the nasal cavities. *Int. J.* Pediatr. Otorhinolaryngol. 1987; **14**: 15–19.
15. Gomes CC, Sakano E, Lucchezi MC, Porto PR. Button battery as a foreign body in the nasal cavities. Special aspects. Rhinology1994; **32**: 98–100.
16. Bledsoe RD. Magnetically adherent nasal foreign bodies: A novel method of removal and case series. Am. J. Emerg. *Med.* 2008; **26**:839 e1–2.
17. Brown L, Tomasi A, Salcedo G. An attractive approach to magnets adherent across the nasal septum. CJEM2003; **5**: 356–8.
18. McCormick S, Brennan P, Yassa J, Shawis R. Children and minimagnets:

An almost fatal attraction. Emerg. Med. J. 2002; **19**:71–3.

19. Pitetti RD, Mishra S, Hickey R. Magnet-backed earrings: Not just for decoration. Pediatr. Emerg. Care1998; **14**: 208–9.
20. Karkos PD, Karagama YG, Manivasagam A, El Badawey MR. Magnetic nasal foreign bodies: A result of fashion mania. Int. J. Pediatr. Otorhinolaryngol.2003; **67**: 1343–5.
21. Lancaster J, Mathews J, Sherman IW. Magnetic nasal foreign bodies. Injury2000; **31**: 123.
22. Okoye BC , Onotai LO. Foreign bodies in the nose. Nigerian Journal of Medicine : Journal of the National Association of Resident Doctors of Nigeria[2006, 15(3):301-304]
23. Kiger JR, Brenkert TE, Losek JD. Nasal foreign body removal in children. Pediatr Emerg Care 2008;24(11):785–92.