



Research Article

Review of Nasal Foreign Bodies in Children at a Rural Federal Medical institution in South West, Nigeria

*Olajide T. Gabriel, * Olayade K. Okunade, § Dunmade A. David and ** Agboola S. Mathew

*Department of Ear, Nose and Throat Surgery, Federal Medical Centre, Ido-Ekiti, Nigeria.

§ Department of Ear, Nose and Throat Surgery, University of Ilorin Teaching Hospital, Ilorin.

** Department of Family Medicine, Federal Medical Centre, Ido- Ekiti, Nigeria.

Corresponding Author's Email: toyeolajide@yahoo.co.uk

Abstract

Otolaryngologist frequently encountered nasal foreign bodies particularly among children. This study reviews the types of nasal foreign bodies, clinical presentation, treatment options, and outcome in children seen at Ido-Ekiti, South West Nigeria. This was a retrospective review of all children with nasal foreign body that were managed over a period of 5 years, at the Federal Medical Centre, Ido-Ekiti, Nigeria. A total of 52 out of 65 patients with nasal foreign bodies had complete data for analysis. The male: female ratio was 1.4:1, aged 1-11 years with a mean of 3.4 years \pm 1.6 SD. The age group 0-5 years was mostly affected in 90.4%. The commonest foreign bodies were stones in 19.2% of cases. Right nasal cavity was mostly affected in 78.8% patients. Source of referral of patients to ENT Clinic was from general outpatient department (GOPD) in 42.3%. Attempt at removal of foreign body before presentation was made in 26.9 % of our patients. Rhinorrhoea was commonest form of presentation in 24 patients with 6 of them having associated foul smelling. Majority, 34.6% present in our clinic within one day of foreign body insertion. Most of the foreign bodies (76.9%) were removed under direct vision with Jobson-Horne probe or Nasal forceps. General anaesthesia was used in 23.1% cases. Minimal bleeding was noticed in 23.1 % of the patients. No mortality was recorded. Nasal foreign bodies are common in pediatric setting usually below the age of 5 years. Early recognition and referral of difficult cases to Otolaryngologist will prevent morbidity and mortality. Health education and public awareness on the danger of foreign body in the nose, keeping small objects away and constant watchful with monitoring of these children at home and schools is advocated.

Key words: Nasal, foreign body, Children, Nigeria

INTRODUCTION

Children are known to put small objects into their body orifices especially nasal cavity. This is because of their curiosity to explore, lack of

supervision and availability of such objects around them. Although more frequently seen in the pediatric setting, they can also affect adults especially those with mental retardation or psychiatric illness (Fischer and Dronen 2013). Nasal foreign bodies tend to go unrecognized for longer periods of time than do foreign bodies in the ear because they usually produce fewer symptoms and are more difficult to visualize (Fischer and Dronen 2013). Patients often present with unilateral, foul - smelling nasal discharge (Kadish and Corneli 1997).

Physicians need to have a high index of suspicion for foreign bodies in children with unexplained symptom of nasal obstruction. Common nasal foreign bodies includes beads, buttons, toy parts, pebbles, candle wax, paper, wrist watch batteries, stone, bean / maize seed , nuts, chalk (Chan et al., 2004; Kalan and Tariq 2000). Foreign bodies in the nasal cavity, however, can be a great challenge and management may require great skill. Various methods of removing nasal foreign bodies that has been described includes; direct instrumentation, balloon catheters, positive pressure, suction, glue, posterior displacement, magnet and irrigation (Fischer and Dronen 2013; Kalan and Tariq 2000; Kiger et al., 2008; Benjamin and Harcourt 2007; Fox 1980) . The keys to successful removal are adequate vision, appropriate equipment, a cooperative patient and a skilled physician. The aim of this study was to review the types of nasal foreign bodies, clinical presentation, treatment options, and outcome in children seen at Ido Ekiti, south western, Nigeria. Such study has not been conducted in this environment.

MATERIALS AND METHODS

This was a retrospective review of children with foreign body insertion into the nose over a period of 5-years from January, 2005 to December, 2010,

treated at the Federal Medical Centre, Ido-Ekiti located in a rural setting of south west, Nigeria. Records of all children with nasal foreign body who were seen and treated through the Accident and Emergency unit, ENT clinic and operating theatre were retrieved from the hospital medical record department. The data extracted included age, sex, type of foreign body, side affected, duration between insertion of foreign body and presentation, clinical features/presentation, previous attempt at removal, mode of referral, treatment modalities and outcome. Inclusion criteria include all patients with complete data. Ethical approval to conduct this study was obtained from the hospital ethical and research committee. A simple descriptive analysis of the data obtained was carried out using SPSS version 14.0

RESULTS

A total of 52 patients had complete data for analysis made up of 30 males (57.7%) and 22 females (42.3%). The male to female ratio was 1.4:1. Their ages ranged from 1 to 11 years; with a mean age of 3.4 years \pm 1.6 SD. The age group 0-5 years was mostly affected in 90.4%, followed by age group 5 to 10 years in 7.7 % and 1.9 % in age group 10 -15 years as depicted in Table 1 .

Table 1: Age and Sex distribution of patients with nasal foreign body

Age range Years	Male n %	Female n %	Total n %
0 -5	26 50.0	21 40.4	47 90.4
5 -10	3 5.8	1 1.9	4 7.7
10-15	1 1.9	0 0.0	1 1.9
Total	30 57.7	22 42.3	52 100.0

The commonest foreign body that was mostly inserted into nasal cavity was stone in 10 cases (19.2%) of the patients. Other type of foreign

bodies removed were piece of eraser, metal object/iron bolt, wrist watch battery accounted for 3 cases (5.8%) each; coca cola foil, back stopper of biro, chalk, piece of wooden stick accounted for 2 cases (3.8%) each; bead accounted for a case

(1.9%); in 5 cases (9.6%) of the patients, the type of the foreign body inserted were not stated can be seen in Table 2. Sources of referral of patients was from general outpatients department (GOPD) of the hospital in 22 (42.3%) of patients, 12

Table 2: Types of foreign body

Type of foreign body	Right nasal cavity		Left nasal cavity		Total	
	n	%	n	%	n	%
Stone	5	9.6	5	9.6	10	19.2
Biscuit wrapper/piece of paper	7	13.5	1	1.9	8	15.4
Maize/beans seed	4	7.7	3	5.8	7	13.5
Foam piece	4	7.7	0	0.0	4	7.7
Metal object/iron bolt	3	5.8	0	0.0	3	5.8
Piece of eraser	1	1.9	2	3.8	3	5.8
Wrist watch battery	3	5.8	0	0.0	3	5.8
Coca cola foil	2	3.8	0	0.0	2	3.8
Back stopper of a biro	2	3.8	0	0.0	2	3.8
Chalk	2	3.8	0	0.0	2	3.8
Piece of wooden stick	2	3.8	0	0.0	2	3.8
Bead	1	1.9	0	0.0	1	1.9
Not stated	5	9.6	0	0.0	5	9.6
Total	41	78.8	11	21.2	52	100.0

Table 3. Sources of referral of patients with nasal foreign body

Source	Frequency	
	N	%
General Outpatient Department (GOPD)	22	42.3
Emergency Pediatric Unit (EPU)	12	23.1
Primary Health care center	8	15.4
Non referral	6	11.5
Secondary Health care center	4	7.7
Total	52	100.0

(23.1%) from emergency pediatric unit (EPU), 8 (15.4%) from primary health care center, 4 (7.7%) from secondary health care center and 6(11.5%) were without referral as illustrated in Table 3. Right nasal cavity was mostly affected in 41(78.8%) patients. About 14(26.9%) of our patients had made various attempt at removing their foreign bodies either at home or from referral hospitals. Twenty four of our patients presented with rhinorrhoea, out of which 6 had associated foul smelling, 21 of the patients gave voluntary history of insertion of foreign bodies, there was associated nasal blockage and difficulty in breathing in 10 patients, incidental findings of foreign body was noticed by parents in 7 patients while cleaning their nostrils, bleeding was reported in 4 patients and 3 patients had pain. Majority of our patients, 18 (34.6%) presented in the clinic within one day of insertion of foreign body, 15(28.8 %) within seven days, 10 (19.2%) within fifteen days and 6 (11.5%) before thirty days. Only three (5.8%), of the patients presented to us after thirty days of insertion of foreign bodies. One of them had metal object in the right nostril for about four months. It was removed under general anaesthesia. Majority 40(76.9%) had their foreign bodies removed successfully in the clinic through the anterior nares under direct visualization with instruments (Jobson-Horne probe or nasal dressing forceps) and head light or head mirror . However 12(23.1%), required sedation in the theater for removal because of previous attempt with associated trauma from referred hospital, deeply impacted foreign body and uncooperative child as shown in Table 4. Epistaxis is only complication recorded in our study and it occurred only in 12 (23.1%) cases. No morbidity/mortality was recorded.

DISCUSSION

This study showed that the age range of the patients were from 1 to 11years with a mean of 3.4 years \pm 1.6 (SD). Majority (90.4 %) of our patients were below the age of 5 years. This was similar to previous studies by Ogunleye and Sogebi 2004; Okoye and Onotia 2006; Roland et al., 2005; Afolabi et al., 2009 and Bhatia 1987. The male to female ratio in this study was 1.4:1. Male preponderance was also reported in a similar study carried out in Ilorin^[11]. Nasal foreign bodies found in this study were similar to the earlier studies (Ogunleye and Sogebi 2004; Okoye and Onotia

2006; Afolabi et al., 2009; Bhatia 1987); however, the commonest foreign body in this study was stone. This might be due to the fact that children in Nigeria have more access to stones and often play with them, especially during school recess periods (Olajide et al., 2011). Special mention should be made of wrist watch battery; it represents 5.8 % of foreign body in this study. It must be removed from the nose as soon as possible because of the danger of liquefaction necrosis of the surrounding tissue, which may eventually lead to septal perforation (Loh et al 2003; Guidera and Stegehuis 2010). In this study, majority (42.3%) of the patients were referred to ENT Clinic from general outpatient department of our hospital. In our study, the right nasal cavity was more often (78.8 %) affected than the left. This is similar to findings in other studies (Ogunleye and Sogebi 2004; Okoye and Onotia 2006; Roland et al 2005 Afolabi et al., 2009). This may be due to a preference of right-handed individuals to insert objects into their right nostril (Loh et al 2003). This however is in contrast to Bhatia who recorded left sided in his study (Bhatia 1987). Only about 26.9% of our patients had made attempt at removal of foreign bodies at home by parents or from referral health facility. It is not surprising as many parents are often worried when their children had foreign body lodgment in the nose. Majority of our patient admitted to our clinic within one day of insertion of foreign body, while another 32.7% were able to do so within seven days. One of the three (5.8%) patients that presented to us after three months of foreign body insertion into his right nostril had a metal object removed under general anaesthesia. This patient had been receiving treatment for chronic sinusitis from referral hospital. Majority of our patient presented with nasal discharge and 6 of them was with foul smelling. Positive history of insertion of foreign body was obtained in 21 cases of our patients. Nasal blockage and difficulty with breathing was reported in 10 of our patients. It is important for physician to have a high index of suspicion for foreign bodies in children with unexplained symptom of nasal obstruction especially when there is unilateral offensive nasal discharge. Some of these foreign bodies are inert and may remain in the nose for years without mucosa changes. Unlike those that initiate congestion and swelling of the nasal mucosal, with

Table 4. Side affected, previous attempt, clinical presentation, interval between presentation, modality of removal of foreign body from subjects

Parameter	n = 52	
Side of nose affected	frequency (n) (%)	
Right nasal cavity	41	78.8
Left nasal cavity	11	21.2
Previous attempt at home/referral center		
Yes	14	26.9
No	38	73.1
Clinical presentation of patient with foreign body	frequency n = 52	
Rhinorrhoea	24	
Insertion	21	
Nasal blockage/difficulty with breathing	10	
Bleeding	4	
Pain	3	
Asymptomatic (incidental)	7	
Foul odor	6	
NB : Some of our patients had more than one presentation/complaints		
Interval before presentation (days)	Frequency (n) (%)	
≤ 1 day	18	34.6
1 – 7 days	15	28.8
8 – 15 days	10	19.2
16 – 30 days	6	11.5
≥ 30 days	3	5.8
Mode of removal		
Instrumentation under direct vision	40	76.9
Light general anesthesia	12	23.1
(deeply impacted foreign body, uncooperative patient)		

the possibility of pressure necrosis producing ulceration, mucosal erosion, and epistaxis (Kalan and Tariq 2000). Several techniques for removal

of foreign body in the nasal cavities are available; and the choice of a particular method depends upon the experience of physician, the type or

nature of foreign body, the location of the foreign body, availability of instruments, and proper positioning is vital in achieving optimal visualization and stability of the head. Most of the foreign bodies in this study (76.9%) were removed in the clinic with instruments (Jobson-Horne probe or nasal dressing forceps) and head light or head mirror under direct visualization through anterior nares. Even in a cooperative patient, assistance should be obtained to stabilize the head. Repeated attempts at removal may result in increased trauma and potential movement of the object into a less favorable location and the object may even dislodge into airway. Therefore mechanical removal of a foreign body should not be attempted if the object appears to be out of range for instrumentation. Twelve (23.1%) of our patient had their foreign body removed under light general anesthesia in the theater because of previous attempt with associated trauma, deeply impacted foreign body, and in an uncooperative patient. Uncooperative patients in whom procedural sedation cannot be used must be securely immobilized. Even in a cooperative patient, assistance should be obtained to stabilize the head. This will reduce trauma, and risk of dislodgement of the foreign body into airway.

CONCLUSION

In conclusion, nasal foreign bodies are common in pediatric setting usually below the age of 5 – years. Majority of cases can be removed in the clinic and emergency department, however early recognition and referral of difficult cases to Otolaryngologist, especially by the primary care providers who make up the first contacts with the patients, will prevent morbidity and mortality. Greater health education and public awareness on the danger of foreign body in the nose, keeping small objects away and constant watchful with monitoring of these children at home and schools would be helpful.

REFERENCES

- Afolabi OA, Suleiman AO, Aremu SK, Elleta AP, Alabi SB (2009). An audit of Paediatric nasal foreign bodies in Ilorin, Nigeria. *SAJCH*. 3(2):64-67
- Benjamin E, Harcourt J (2007). The modified parents kiss for the removal of paediatric nasal foreign bodies. *Otolaryngol*. 32:120-121
- Bhatia PL (1987). Aural and Nasal Foreign bodies. *Nig. Med. Pract.* 14(1/2):17-20
- Chan TC, Ufberg J, Harrigan RA, Vilke GM (2004). Nasal foreign body removal. *J. Emerg med*. 26:441-5
- Fischer JI, Dronen SC (Assessed on 24th May, 2013). Nasal Foreign bodies. www.emedicine.medscape.com/article/763767-overview
- Fox JR (1980). Fogarty catheter removal of nasal foreign bodies. *Am. Emerg Med*. 9(1):37-38
- Guidera AK, Stegehuis (2010). Button batteries: the worst case scenario in nasal foreign bodies. *Jour. of the New Zealand med. Ass.* 123(1313): 1-5
- Kadish HA, Corneli HM (1997). Removal of Nasal foreign bodies in the pediatric population. *Am. J. Emerg Med*. 15:54-6.
- Kalan A, Tariq M (2000). foreign bodies in the nasal cavities: a comprehensive review of the aetiology, diagnostic pointers, and therapeutic measures *Postgrad. Med. J.* 76:484-7
- Kiger JR, Breukert TE, Losek JD (2008). Nasal Foreign body removal in children. *Pediatr. Emerg. Care*. 24(11):785-792
- Loh WS, Leong JL, Tan HK (2003). Hazardous foreign bodies: Complications and management of button batteries in nose. *Ann Otol Rhinol Laryngol*; 112: 379 -83
- Ogunleye AOA, Sogebi OA (2004). Nasal foreign body in African children. *Afr. J. Med. Sci.* 33:225-228
- Olajide TG, Ologe FE, Arigbede OO (2011). Management of foreign bodies in the ear: A retrospective review of 123 cases in Nigeria. *Ear Nose Throat J*. 90(11): E16
- Okoye BC, Onotia LO (2006). Foreign bodies in the Nose. *Niger J. Med.* 15(3):301-4
- Roland NJ, McRae RDR, Mc Combe AW (2005). *Key Topics in Otolaryngology and Head and Neck surgery*, 3rd ed. Oxford: BIOS Scientific Publisher. 104