ISSN (Print): 2663-9491 ISSN (Online): 2789-6897

Original Article

Socio-demographic Profile of Patients with Foreign Body in Upper Aero-Digestive Tract

DOI: dx.doi.org

Kamrun Nahar Hurain[1*], Bahauddin[2], Md Iqbal Hossen[3], Rozina Akter Lata[4], Nibash Chandra Ghosh[5], Nasima Aktar[6]

Received: 21 November 2023
Accepted: 26 November 2023
Published: 28 November 2023

Published by:
Sheikh Sayera Khatun Medical College (SSKMC), Gopalganj, Bangladesh

*Corresponding Author

ABSTRACT

Introduction*: Otolaryngologists face significant diagnostic and therapeutic challenges when dealing with foreign bodies (FBs) in the upper aero-digestive tract. Most ENT surgeons will eventually have to deal with a patient who has lodged a foreign body in their Upper Aero- Digestive Tract (UADT), which can cause serious complications if immediate measures are not taken.* ***Objectives****: To study different types of foreign bodies (FB) that impacted in Upper Aero- Digestive Tract (UADT) in patients of different sociodemographic area that help in further management plan.* ***Methods and Materials:*** *A hospital based cross-sectional study was done in Department of Otolaryngorhinology and Head- Neck surgery, Dhaka Medical College Hospital from23rd March 2019 to 22nd September 2019. Purposive sampling technique was applied for study. Data were collected from the informant and recorded in structured case report form. Data was processed and analysed with the help of computer program SPSS version-22 and Microsoft excel.* ***Result****: In this study majority of patients 35(70.0%) belongs to age 0 to 10 yrs (Mean age 6.1±2.8). Male to female ratio was 1.7:1. In this study 21 (60.0%) children attended in hospital with foreign body impacted in nose, whereas in all patients of age group 21-30 year were found oesophageal foreign body. In this study, foreign body were commonly impacted in nose (42%), in oesophagus (20%) and throat (38.0%).Types of foreign bodies include metallic foreign bodies (36.0%), Non-metallic*

(The Insight 2023; 6(1): 266-276)

1. *Consultant, ENT & Head-Neck cancer hospital & Institute, Agargaon, Dhaka, Bangladesh*
2. *Senior consultant, ENT & Head-Neck cancer hospital & Institute, Agargaon, Dhaka, Bangladesh*
3. *Registrar, Anwer Khan modern medical college & hospital, Dhaka, Bangladesh*
4. *Assistant Professor, General Surgery, Central Dental College, Sylhet, Bangladesh*
5. *MBBS (C U) MS ENT, Associate Professor Department of Otolaroingology & Head Neck Surgery, Dr. Sirajul Islam medical college &Hospital, Dhaka, Bangladesh*
6. *Otolaryngology & Head-Neck surgery department, BSMMU, Dhaka, Bangladesh*

(44.0%) and living FB (20.0%). Among them rural subjects were predominant (68.4% vs. 25.8% in rural and urban respectively). ***Conclusion:*** *Otorhinolaryngeal foreign bodies remain frequent occurrence particularly in the younger age group 9 years old or less and high index of suspicion suggested and early intervention to prevent the morbidity and mortality from complications.*

Keywords: *Foreign bodies, Otolaryngorhinology, Upper Aero-Digestive*

INTRODUCTION

Foreign bodies (FB) into the upper aero-digestive tract, either accidentally or deliberately, often constitute otolaryngologic emergencies. The type of the foreign body and the site of obstruction depend on various factors. Foreign body aspiration is commonly seen in children.[1] Apart from nose and ear, pharynx and oesophagus are the next most common site for lodgement of foreign body. Most of the ingested foreign bodies pass spontaneously on crossing lower esophageal sphincter. But few become impacted during its passage through GI tract and require intervention. Epidemiological data shows that among all foreign bodies in upper aero-digestive tract, most common is fish bone (43.75%). Apart from fish bone others include coin(18.23%), meat bone(18.23%), and denture(7.29%). Less common foreign bodies are meat bolus(2.08%), foreign body in bronchus(2.60%), button type battery(1.56%).[2] The cases present with a wide spectrum of clinical problems. In general the treatment of a foreign body in the upper aero-digestive tract is a reasonably prompt endoscopic removal under conditions of maximum safety and minimum trauma.[3]

The presentation of foreign bodies may be life-threatening in case of airway foreign bodies. Foreign bodies in other aerodigestive tract may present as mild to severe discomfort, pain, blockage, bleeding, discharge, and impaired functioning of the involved site.[4] Blunt or smooth foreign bodies generally do not cause any harm and pass easily. But for sharp foreign bodies like fish bone, meat bone, denture, pin etc penetrate the intestinal wall followed by impending complications. Without treatment, complications like perforation, retropharyngeal and para-pharyngeal abscess formation, obstruction, oesophageal-aortic fistula, tracheaoesophageal fistula may occur. The common symptoms of the foreign bodies retained less than 24 hours are dysphagia, drooling of saliva, vomiting, gagging and anorexia. Respiratory symptoms like cough, stridor and chest pain may arise within minutes of foreign body entry into tracheo-bronchial tree; delayed complications like pneumonia may also occur.[2]

Otorhinolaryngeal foreign bodies are continuing medical problem and their referral to the otorhinolaryngologist for removal is a common occurrence.[5-7] Ear, nose, and throat (ENT) foreign bodies are more common among children, although adult age groups are involved.[8] The etiological factors responsible for foreign bodies insertion into the ENT varies among children and adult. Children are inclined to place toys, foodstuff and household articles in the ear, nose or oral cavity.[9] The reasons for the insertion of foreign bodies include curiosity, boredom, imitation, irritation, rhinitis, otalgia, fun making, and the wish

to explore the orifices of the body.[5-9] It may be accidental or deliberate self-harm especially in adult.

There are many studies carried out looking into the prevalence, management, and complications of ENT foreign bodies. In Sokoto, there were few studies conducted on otorhinolaryngeal foreign bodies in both children and adult. The three studies from Sokoto were carried out about a decade ago by Iseh et al. on pharyngo-esophageal foreign bodies, laryngo-trachaeobronchial foreign bodies and ear foreign bodies [10-12] Hence, it may be necessary to determine the present pattern.

Radiological localisation of foreign body is an essential part of management. Antero-posterior and lateral X-ray of affected part is the basic radiological investigation performed. Barium studies should be used when there is suspicion of partial obstruction of oesophagus by radiolucent foreign body as complete obstruction of oesophageal lumen by foreign body may lead to aspiration of contrast material. Positive findings on the esophagogram are irregularity in contrast medium column, deviation in expected course of oesophagus. Computed tomography scan and ultrasonography may be used as a tool for diagnosing radiolucent foreign body.[2] A positive history, detailed clinical examination and radiographic search often lead to a diagnosis, while negative history and/or normal chest radiographs can be misleading. Successful retrieval of foreign bodies requires excellent teamwork between the endoscopist, anaesthetist and the nursing staff because the airway of the patient is tended by all these personnel. A well ventilated, unconscious and relaxed patient affords the best prospects for the successful removal of a foreign body from the airway. Rigid bronchoscopy using ventilation bronchoscopes offers good visualization and is the preferred mode of treatment. As reported, flexible fibre-optic bronchoscopes also have good rate of success.[13] The present study was conducted to see the clinical presentation & management of Foreign Body (FB) in the Upper Aero-Digestive Tract (UADT) at our setting.

OBJECTIVE

To study different types of foreign bodies (FB) that impacted in Upper Aero-Digestive Tract (UADT) in patients of different sociodemographic area that help in further management plan.

METHODS AND MATERIALS

A hospital-based cross-sectional study was carried out at the Department of Otolaryngorhinology and Head-Neck surgery at the Dhaka Medical College Hospital from the 23rd of March 2019 until the 22nd of September 2019. Patients who had a history of either inhalation or impaction of a foreign body, as well as patients who had a history of dysphagia, were enrolled in the study, and they were required to give informed written consent. Patients who had a history of dysphagia were also eligible to participate in the study. The research looked at a total of fifty distinct cases in their entirety. For the purposes of this investigation, a method known as purposeful sampling was utilized.

Inclusion Criteria:

- Patients with history of inhalation or impaction of foreign body or with history of dysphagia.

- Patients with history of aspiration or dyspnea or with history of stridor.
- Patients with history of insertion of foreign body in the nose.

Exclusion Criteria:

- Patient who refused to be included in this study
- Patients with stridor or dysphagia not caused by FB will be excluded from the study

Data Collection:

Patients were only considered for participation in the study if they fulfilled both the inclusion and the exclusion criteria. The data came from the informant, and they were recorded in a structured case report form. The clinical examination as well as any relevant investigations were carried out with great care. Each and every questionnaire that was collected was examined very thoroughly in order to spot any errors in the data. Documentation of the patient's history, signs and symptoms, clinical data, and investigative findings were all included in a standardized questionnaire.

Data Analysis:

All of the data was laid out in the tables and graphs that were the most appropriate given their relationship to the subjects. In order to make the tables and graphs more straightforward to comprehend, explanations were offered for each one. The tasks involved in the processing of data include the creation of registration schedules, the editing and computerization of data, the preparation of dummy tables, and the matching and analysis of data. Both SPSS version-22 and Microsoft excel were utilized throughout the processing and examination of the aforementioned data. Quantitative data are typically written out using mean and standard deviation, while qualitative data are typically written using frequency and percentage. Tabulation and graphical presentation of the comparison were done in the form of tables, pie charts, graphs, and bar diagrams, among other graphical representations.

RESULTS

The patients' ages are broken down in Table 1, which you can find here. The total number of patients who were examined was fifty. The majority of patients, 35, or 70.0%, are between the ages of 0 and 10 years old. Patients' Mean age was 6.1±2.8 years.

Table- 1: Age distribution of the study subjects

Age (years)	Frequency	Percentage (%)
0-10	35	70.0
11-20	12	24.0
21-30	3	6.0
Mean ± SD	***6.1±2.8***	

The area of residence of the patients was shown in the Figure 1. The majority of respondents came from urban areas (31, or 62.0%), while the remaining 19, or 38.0%, came from rural areas.

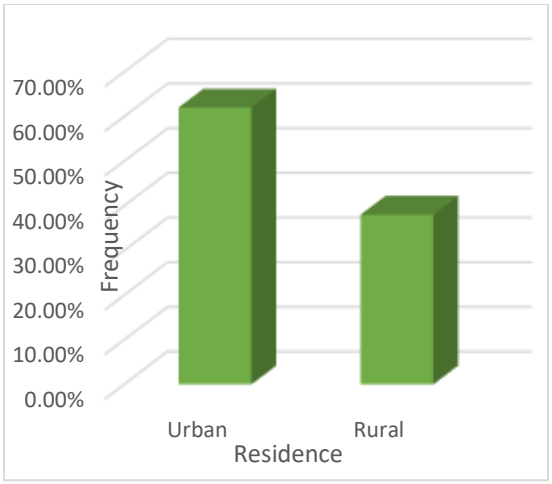

Figure- 1: Residence of study subject

The gender breakdown of those who responded is presented in Table 2. The majority of patients were male (64.0%), while the percentage of female patients was 36.0%. The ratio of males to females was 1.7: 1.

Table- 2: Gender distribution of respondents

Gender	Frequency	Percentage (%)
Male	32	64.0
Female	18	36.0

Patients are divided into three classes based on their socioeconomic status. The majority of patients, which comprised 54.0% of the total, were classified as belonging to the lower socioeconomic class, while the remaining 16.0% were classified as belonging to the middle or upper socioeconomic class. (See Table 3).

Table-3: Socioeconomic status (SES) of study population

Income classes	Frequency	Percentage (%)
Poor class	27	54.0
Middle class	15	30.0
High income class	8	16.0

Pain, difficulty swallowing, and nasal obstruction were the most common symptoms among all of the other symptoms. These four symptoms were present in 100.0%, 76.0%, 58.0%, and 42.0% of patients, respectively. The symptom of H/O introducing a foreign body was present in all patients. Other common symptoms included nasal discharge (36.0% of patients), excessive salivation, difficulty swallowing, and nasal obstruction, which were the most common symptoms, present in 100.0%, 76.0%, 58.0%, and 42.0% of patients respectively. Other common symptoms included difficulty breathing through the nose (42.0% of patients), which was present in 42.0% of patients. Other common symptoms included excessive salivation (24%) and respiratory distress (20%). Nasal discharge accounted for 36.0% of all cases. (See Table 4)

Table- 4: Distribution of the patients according to clinical manifestation

Clinical manifestation	Frequency	Percentage (%)
H/O introducing foreign body	50	100.0
Nasal discharge	18	36.0
Epistaxis	5	10.0
Pain	38	76.0
Difficulty in swallowing	29	58.0
Nasal obstruction	21	42.0
Foul smelling	18	36.0
Excessive salivation	12	24.0
Foreign body sensation	15	30.0
Respiratory distress	10	20.0
Change of voice	11	22.0

As shown in Figure 2, foreign bodies most frequently entered the body through the nose (42%), the oesophagus (20%), and the throat/larynx (38%).

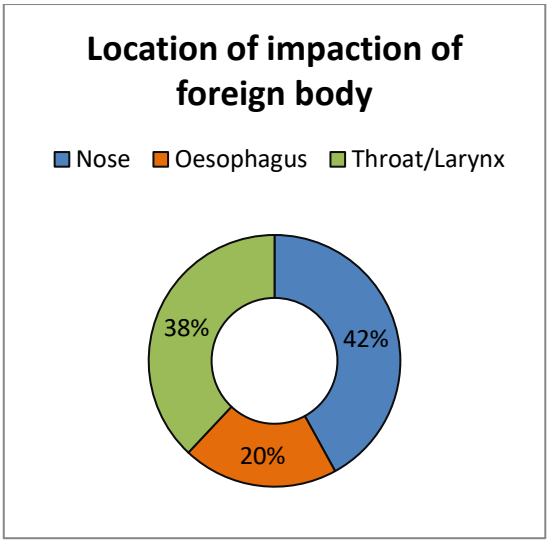

Figure- 2: Distribution of cases according to location of impaction of foreign body

The various types of foreign bodies are outlined in Table 5. The percentage of metallic foreign bodies was 36.0%, the percentage of non-metallic foreign bodies was 44.0%, and the percentage of living FB was 20%.

Table- 5: Types of foreign bodies

Types of foreign bodies	Frequency	Percentage (%)
Metallic	18	36.0
Non-metallic	22	44.0
Living FB (insect, cockroach, mosquito, ant, etc.)	10	20.0

42.0 percent of the people who participated in the study reported having an impaction of a foreign body in their nose; among these people, subjects from rural areas were more

common (68.4% versus 25.8% in rural and urban areas respectively). 38.0 percent of the patients in this study had an impaction of foreign body in their nose, and the majority of those patients lived in urban areas (31.5% versus 41.9% in rural and urban areas respectively). Only 20.0 percent of the patients were found to have a foreign body in their oesophagus, and every single one of these patients lived in an urban setting. (See Table 6)

Table- 6: Relationship of site of foreign body impaction with residence distribution

Site of impaction	Frequency		Total
	Rural (n=19)	Urban (n=31)	
Nose	13(68.4%)	8(25.8%)	21
Throat/ larynx	6(31.5%)	13(41.9%)	19
Oesophagus	0	10(32.2%)	10

It was evident from this study is that early age is most vulnerable to foreign body aspiration in airway (e.g., nose & throat). With ageing the pattern is shifted towards digestive tract. In this study 21 (60.0%) children attended in hospital with foreign body impacted in nose, whereas in all patients of age group 21-30 year were found oesophageal foreign body.(Table 7)

Table- 7: Relationship of foreign body impaction with different age groups

Site of impaction	Age group with frequency			Total
	Age 0-10 year (n=35)	*Age 11-20 year (n=12)*	*Age 21-30 year (n=3)*	
Nose	21(60.0%)	0	0	21
Throat/ Larynx	12(34.2%)	7(58.3%)	0	19
Oesophagus	2(5.7%)	5(41.7%)	3(100.0%)	10

The results of this study made it abundantly clear that children are at the greatest risk for aspirating foreign bodies into their airways (e.g., nose and throat). As people get older, the pattern begins to shift toward the digestive tract. In this particular study, twenty-one children, or sixty percent, were found to have a foreign body lodged in their nose. On the other hand, oesophageal foreign bodies were discovered in all patients aged 21 to thirty years old. (See Table 7)

Table- 8: Distribution of cases according to treatment modality (n=50)

Treatment modality	Frequency	Percentage
Direct vision	21	42.0
Esophagoscopy	7	14.0
Laryngoscopy	19	38.0
Endoscopy	3	6.0

The results of the cases after management are presented in Table 9. The condition of the patient after receiving the appropriate treatment, the symptoms, the degree of abnormalities or dependence in the daily physiological activity, and the clinical outcome had been evaluated and measured by following up closely and closely monitoring the patient. According to the study, 94.0% of patients made a full recovery without experiencing any complications. Within the scope of this study, three patients experienced postoperative complications such as pain, bleeding, and complications related to the anesthesia.

Table-9: Distribution of the study subjects according to outcome (n=50)

Outcome	Frequency	Percentage
Recovered without complication	47	94.0
Complications	3	6.0

DISCUSSION

This hospital based cross-sectional study was conducted in Department of Otolaryngorhinology and Head- Neck surgery, Dhaka Medical College Hospital, Dhaka to evaluate the sociodemographic characteristics and clinical profile of patients with foreign body in upper aero-digestive tract. Patients with history of inhalation or impaction of foreign body or with history of dysphagia were enrolled for study and who has given informed written consent. Overall demographic features of 50 patients revealed that, majority of patients 35(70.0%) belongs to age 0 to 10 yrs. Mean age of patients was *6.1±2.8* years. Large numbers of respondents came from urban area 31(62.0%), and poor class 27(54.0%) comprising the major percentage of the patients.

Findings of this study accordance with result of other studies. Total of 48 cases 37 (77%) accounted for children 9 years or less of age. 20 (41.6%) were between the ages 5 and 9 years, 17 (35.4%) were between 0 and 4 years and 4 (8.3%) between 15 and 19 years. Two (4.2%) cases were between 10 and 14 years age group, 2 (4.2%) cases in 20 and 29 years age group, 3 (6.3%) cases between 30 and 39 years age group. Maximum patients hailing from urban area.[4] Tracheobronchial foreign bodies were commonly seen in children whereas the food passage hosted foreign bodies in all the age groups. Common age group was 0-10 years.[1] The patients ranging from 8 months to 84 years. Most common age group is 0-5 years (26.56%), followed by 6-10 years (11.97%). Incidence in age groups ranging from 11 to 30 years was found to be similar (interval of 5 years).[2]

The study showed that 62.9% of patients fall in the age group of 0-5 years.[14] Most of the studies show pediatric age group is most commonly affected by foreign body in upper aerodigestive tract compare to other age group. This can be explained by explorative nature of children. In this study maximum numbers of patients (64.0%) were male, females were 36.0% patients. Male to female ratio was 1.7:1.

Findings consistent with result of other studies. There were 27 males and 21 females with male to female ratio of 1.3:1.[4] A study among 192 patients, 104 patients were males (54.16%) remainder

females (45.83%).[2] Other relevant studies also support male preponderance. As most of the foreign bodies occur in children, and as male children are overactive than female, this probably explain the male preponderance.[24] In this study among all the symptoms, H/O introducing foreign body, pain, difficulty in swallowing and nasal obstruction were most common symptoms, present in 100.0%, 76.0%, 58.0% & 42.0% patients respectively. Other common symptoms were nasal discharge (36.0%), excessive salivation (24.0%), and respiratory distress 20.0%) of patients. Findings of this study accordance with result of other study. Common presenting symptoms were dysphagia in 8 (72.7%) cases, odynophagia 2 (18.2%) cases and blood-stained vomiting in 1 (9.1%) case in a study.[4]

Clinical features of ear Foreign body were 31 (64.6%) presented with ear discomfort, ear discharge 5 (10.4%), impaired hearing 4 (8.3%), pain and discomfort 4 (8.3%), noise and movement in the ear 1 (2.1%) only. 2 (4.2%) of the patients had no symptoms. 37 (77.1%) presented within 1 week of onset of symptoms and 4 (8.3%) after a week. In 30 (62.5%) cases, foreign bodies were removed by ear syringing and in case of 18 (37.5%) with Jobsons Horne probe and Hartman alligator ear forcep. Only 2 (4.2%) cases were complicated by otitis externa.[4] In this study, foreign body commonly were impacted in nose (42%), in oesophagus (20%) and throat (38.0%).Types of foreign bodies includes, metallic foreign bodies (36.0%), Non-metallic (44.0%) and living FB (20.0%).

Similar study by Amuttaet al (2013) noted, Ear foreign bodies 48 (53.3%) were the most common, followed by the nose 16 (17.8%), bronchus 15 (16.7%) and esophagus 11 (12.2%).[4] Among all foreign bodies in upper aero-digestive tract, most common is fish bone in 84 patients (43.75%). Apart from fish bone others include coin- 35 (18.23%), meat bone- 35 (18.23%), denture- 14(7.29%). Less common foreign bodies are meat bolus- 4 (2.08%), foreign body in bronchus- 5 (2.60%), button-type battery- 3 (1.56%). Least common things like cotton thread, rubber cover of TV jack, pen cap, tooth brush, ear ring, hair pin, plastic cap together constitute the group 'others'-12(6.25%).[2] Previous study types of ear Foreign bodies were plant seed 12 (25%), followed by unidentified (not specifically stated) foreign bodies 9 (18.2%), beads 8 (16.6%), cotton bud 8 (16.6%), insect 3 (6.3%), maggot 2 (4.2%), pen cover 2 (4.2%), stones 2 (4.2%), eraser and sponge, 1 (2.1%) each.[4] On evaluation of site of impaction, right bronchus was more likely to have a foreign body than the left. Scarf pins were the commonest. Oesophagus had more foreign bodies than the hypopharynx.[1]

Present study demonstrated that noninvasive measures such as direct vision only (42.0%) were the main intervention methods. Laryngoscopy was required in 38.0% patients; esophagoscopy was given in 14.0% cases. In this study Endoscopic removal of FB was performed in 6.0% cases. Study shows that 94.0% of the patients recovered without any complication. In this study 3 patients developed postoperative complications, e.g, pain, bleeding and anesthetic complication.

In previous study many methods of foreign body removal have been developed like

bougie, Foley's catheter, carbonated fluid or Papain, glucagon therapy, hypopharyngoscopy and esophagoscopy. Amongst these, hypopharyngoscopy and rigid esophagoscopy remain the most useful methods.[2]

The pediatric patient the foreign bodies were removed by rigid esophagoscopy with appropriate size esophagoscope and grasping foreign body forceps. Adult with the meat bolus impaction were managed conservatively with intravenous rehydration, nil per oral, and light sedation with diazepam and pentazocine. The meat bolus disimpacted into the stomach within 24-48 h of instituting this treatment regime. There were no major complications.[4] Foreign body related complications such as retropharyngeal abscess, pulmonary oedema and lung collapse were seen in three patients (5.2%). No complications accountable to endoscopy were encountered.[1]

CONCLUSIONS

Foreign bodies (FB) into the upper aero-digestive tract, either accidentally or deliberately, often constitute otolaryngologic emergencies. Sociodemographic diversity has impact on incidence of FB in UADT. This study demonstrates that foreign body lodged in upper aero digestive tract occurs more commonly in children than adult. Proper evaluation and early management prevent the complications of Foreign bodies (FB) into the upper aero-digestive tract. Direct vision with forceps is more useful and safer method. As the commonest type of foreign body encountered in children which requires removal under anaesthesia is metallic object. Impaction of foreign body in esophagus leads to edema of mucosa and esophageal wall becomes weakened. Sometimes esophageal peristalsis is not able to remove the esophageal foreign body. Long standing retention of esophageal foreign body may lead to perforation. So it should be removed as early as possible. In symptomatic patients, it should be diagnosed early and urgent removal should be done to prevent unnecessary complications.

REFERENCES

1. *Murty PS, Ingle VS, Ramakrishna S, Shah FA, Varghese P. Foreign bodies in the upper aero-digestive tract. Journal for scientific research. Medical sciences/Sultan Qaboos University. 2001 Oct;3(2):117.*
2. *Maiti AB, Hembrom R, Sinha R, Mandal S, Nair MM, Patra S. Epidemiological profile of foreign body in upper aero-digestive tract in a peripheral tertiary-care hospital. Bengal Journal of Otolaryngology and Head Neck Surgery. 2018;26(3):165-70.*
3. *Holinger LD. Management of sharp and penetrating foreign bodies of the upper aerodigestive tract. Annals of Otology, Rhinology & Laryngology. 1990 Sep;99(9):684-8.*
4. *Amutta SB, Iseh KR, Aliyu D, Abdullahi M, Abdulrahaman GA. Ear, nose, and throat foreign bodies in a tertiary health institution in Sokoto, Nigeria. Sahel Medical Journal. 2013 Jul 1;16(3):87.*
5. *Ijaduola GT, Okeowo PA. Foreign body in the ear and its importance: the Nigerian experience. Journal of tropical pediatrics. 1986 Feb 1;32(1):4-6.*
6. *Endican S, Garap JP, Dubey SP. Ear, nose and throat foreign bodies in Melanesian children: an analysis of 1037 cases. International journal of pediatric otorhinolaryngology. 2006 Sep 1;70(9):1539-45.*
7. *Aracy P, Tanit G, Ossamu B, Marcia A, Fernando V, Claudio M, et al. Ear and nose foreign body removal in children. Int J Pediatr otorhinolaryngol 1998;46:37-42.*

8. *Chai CK, Tang IP, Tan TY, Jong DE. A review of ear, nose and throat foreign bodies in Sarawak General Hospital. A five year experience. Med J Malaysia. 2012 Feb;67(1):17.*
9. *Carney A, Patel N, Clarke R. Foreign bodies in the ear and the aerodigestive tract in children. InScott-Brown's otorhinolaryngology, head and neck surgery 2008 (pp. 1184-1193). Hodder.*
10. *Iseh KR, Oyedepo OB, Aliyu D. Pharyngo-oesophageal foreign bodies: Implications for health care services in Nigeria. Annals of African Medicine. 2006 Oct 30;5(1):52-5.*
11. *Iseh KR, Abdullahi M, Aliyu D. Laryngo-Tracheo-Bronchial foreign bodies: Indication for endoscopic evaluation of sudden or persistent respiratory symptoms. Sahel Medical Journal. 2008;11(3):97-101.*
12. *Iseh KR, Yahaya M. Ear foreign bodies: Observations on the clinical profile in Sokoto, Nigeria. Annals of African Medicine. 2008 Mar 1;7(1):18.*
13. *Cunanan OS. The flexible fiberoptic bronchoscope in foreign body removal: experience in 300 cases. Chest. 1978 May 1;73(5):725-6.*
14. *Singh RB, Dubey RK, Pandey V, Kumar V, Sharma SP, Annavi B. Foreign bodies in digestive tract of children: A tertiary care hospital experience. International Journal of Medicine and Public Health. 2014;4(4).*