



**ORIGINAL RESEARCH PAPER**

**ENT**

**SPECTRUM OF FOREIGN BODIES IN EAR, NOSE & THROAT AT TMC & DR. BRAM TEACHING HOSPITAL – A RECORD BASED STUDY**

**KEY WORDS:** Foreign Body (fb), Earache, Nasal.

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**ABSTRACT**

**INTRODUCTION:** Foreign bodies (FB) lodging in ear, nose & throat is commonly encountered in ENT practice. Adequate knowledge & skill about FB removal is a must in order to avoid possible complications.

**OBJECTIVE:** Categorizing the FB encountered, clinical features & management.

**METHOD:** Record-based study.

**RESULTS:** Overall 710 patients' data from the previous medical records were scrutinized for the study, out of males were 400(56.33%) & females were 310(46.33%) with a sex ratio of male: female as 1.2:1. FB ear accounting 320 patients (45%) followed by FB in pharynx/esophagus with a total of 191 patients (26.9%). Clinical presentation of FB ear cases shows more cases presenting with earache(56.25%). Age wise distribution shows between 11-20Y, total 211 cases (29.71%).

**CONCLUSION:** More cases of FB in ENT around second decade of life with decreasing trend as the age increases while nasal FB more common around pediatric age-group.

**INTRODUCTION**

In medical terms, a foreign object is something that is in the body but doesn't belong there.<sup>[1]</sup>In younger children, the natural curiosity causes them to intentionally or unintentionally insert foreign bodies into their nose, ears and mouth.<sup>[2]</sup> According to several authors,<sup>[3,4,5,6]</sup> the FB correspond, on average, to 11% of the cases of Emergencies in Otorhinolaryngology and may evolve with complications in 22% of the cases. Such complications are mostly simple, but eventually more severe pictures such as tympanic perforations and bronchoaspiration may occur.<sup>[6,7]</sup> Otorhinolaryngology foreign body is commonly encountered in daily practice by primary care physicians, pediatricians, casualty officers and Otolaryngologists worldwide.<sup>[8]</sup>The present study is meant to find out the different types of Foreign bodies commonly encountered in ENT in the Department of ENT at TMC & Dr. BRAM Teaching Hospital & also to analyze their clinical presentation & management in our tertiary care hospital.

**OBJECTIVES**

- 1) To categorize the various types of foreign bodies in ENT.
- 2) To study the clinical presentation of different types of foreign bodies.
- 3) To study the management of different types of foreign bodies.

**METHOD & MATERIALS**

- 1) **Study Type:** Record Based Study
- 2) **Study Duration:** 24 months (1<sup>st</sup> August 2017 to 31<sup>st</sup> July 2019)
- 3) **Study Area:** Department of ENT, TMC & Dr. BRAM Teaching Hospital, Agartala, Tripura, pin -799014.
- 4) **Study Population:** Patients presented with symptomatic complain of Foreign Body insertion in Ear or Nose or Throat to the Department of ENT at TMC & Dr. BRAM Teaching Hospital, Agartala, Tripura, pin - 799014.
- 5) **Study Population:** All patients who presented with symptomatic complain of Foreign Body insertion in Ear or Nose or Throat to the Department of ENT at TMC & Dr. BRAM Teaching Hospital during 1<sup>st</sup> August 2017 to 31<sup>st</sup> July 2019 & also received treatment in the hospital for the same.

6) **Study Size:** All patients were included in the study who presented with symptomatic complain of Foreign Body insertion in Ear or Nose or Throat to the Department of ENT at TMC & Dr. BRAM Teaching Hospital during 1<sup>st</sup> August 2017 to 31<sup>st</sup> July 2019 & also received treatment in the hospital for the same.

**7) Selection Criteria:**

- **Inclusion Criteria:**
- All age group will be included.
- Patients with symptomatic complaint of foreign body insertion in Ear or Nose or Throat & confirm diagnosis was made for the so.

Ø **Exclusion Criteria:** Patients with previous history of Foreign Body insertion.

(8) **Study Tools:** Previous hospital based Out-door patients records of the ENT Department, In-door patients records of the ENT Department, Operation Theatre records of the ENT Department, etc

(9) **Data Collection Procedure:** All previous records from 1<sup>st</sup> August 2017 to 31<sup>st</sup> July 2019 of Department of ENT comprising of Out-door patients records of the ENT Department, In-door patients records of the ENT Department, Operation Theatre records of the ENT Department, etc will be analyzed for the study to sort of the patients presenting with Foreign Body insertion in Ear or Nose or Throat. Detailed study will be done in categorizing the cases depending on their clinical presentation & final diagnosis. Also study was done on how the above patients were treated in our tertiary care hospital.

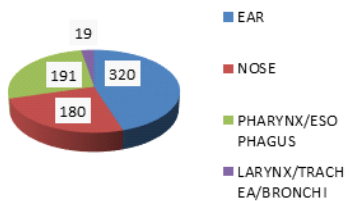
(10)**Statistical Analysis:** Done using Microsoft Excel.

(11)**Ethical Clearance:** Prior Ethical Clearance was taken from the concerned Ethical Committee of the Institute.

**Table 1: Distribution of FB [FB- Foreign Body]**

SITE OF FB	NO OF PATIENTS
EAR	320 (45%)
NOSE	180 (25.35%)
PHARYNX/ESOPHAGUS	191 (26.9%)
LARYNX/TRACHEA/BRONCHI	19 (2.67%)
TOTAL	710

**Pie-Chart 1: Distribution of FB**

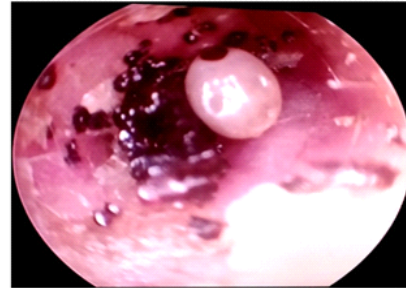


PHARYNX/ESOPHAGUS	DYSPHAGIA	23 (12.04%)
	ODYNOPHAGIA	29 (15.18%)
	F.B SENSATION	172 (90.05%)
	THROAT PAIN	57 (29.84%)
	DROOLING OF SALIVA	10 (5.23%)
LARYNX/TRACHEA/BRONCHI	OTHERS	0
	DYSPNEA	19 (100%)
	COUGH	12 (63.15%)
	BLOOD STAINED EXPECTORATION	3 (15.78%)
	OTHERS	0

**Table 2: Clinical features of FB**

SITE OF F.B	CLINICAL FEATURES	FREQUENCY
EAR	DEAFNESS/HARD OF HEARING	41 (12.8%)
	NOISE/TINNITUS	39 (12.18%)
	PUS DISCHARGE	63 (19.68%)
	EARACHE	180 (56.25%)
	BLEEDING PER EAR	31 (9.68%)
	CRAWLING SENSATION/IRRITATION	102 (31.87%)
	OTHERS	0
NOSE	PAIN	39 (21.66%)
	U/L NASAL DISCHARGE	142 (78.88%)
	SNEEZING	37 (20.5%)
	OTHERS	0

**Fig 1: Foreign Body Right Ear- Insect (Tick).**



**Table 3: Distribution of FB according to Age-group.**

Site Of F.B	Type Of F.B	AGE GROUP							TOTAL
		0-10Y	11-20Y	21-30Y	31-40Y	41-50Y	51-60Y	≥61Y	
Ear	Insect (Living/Non-living)	0	10(12.19%)	21(25.60%)	15(18.29%)	18(21.95%)	10(12.19%)	8(9.75%)	82(25.62%)
	Cotton Buds	0	8(7.27%)	30(27.27%)	29(26.36%)	13(11.81%)	13(11.81%)	7(6.36%)	110(34.37%)
	Stone Pieces	0	3(15%)	3(15%)	7(35%)	7(35%)	0	0	20(6.25%)
	Seed Grains & Vegetable Seeds	30(42.25%)	37(52.11%)	2(2.81%)	2(2.81%)	0	0	0	71(22.18%)
	Others	3(8.10%)	18(48.64%)	5(13.51%)	3(8.10%)	1(2.70%)	7(18.91%)	0	37(11.56%)
Nose	Paper Fragments	27(51.92%)	25(48.07%)	0	0	0	0	0	52(28.88%)
	Sponge Fragments	6(75%)	2(25%)	0	0	0	0	0	8(4.44%)
	Seed Grains & Vegetable Seeds	49(53.84%)	40(43.95%)	2(2.19%)	0	0	0	0	91(50.55%)
	Metallic F.B	9(47.36%)	8(42.10%)	1(5.26%)	1(5.26%)	0	0	0	19(10.55%)
	Others	2(20%)	7(70%)	1(10%)	0	0	0	0	10(5.55%)
Pharynx/Esophagus	Fish Bone	2(1.80%)	18(16.21%)	23(20.72%)	27(24.32%)	31(27.92%)	7(6.30%)	3(2.70%)	111(58.11%)
	Coin	6(33.33%)	8(44.44%)	2(11.11%)	1(5.55%)	1(5.55%)	0	0	18(9.42%)
	Chicken Bone/Meat Bone	0	1(5.55%)	5(27.77%)	4(22.22%)	4(22.22%)	3(16.66%)	1(5.55%)	18(9.42%)
	Denture	0	0	0	1(12.5%)	1(12.5%)	1(12.5%)	5(62.5%)	8(4.18%)
	Metallic F.B	2(13.33%)	3(20%)	5(33.33%)	3(20%)	1(6.66%)	1(6.66%)	0	15(7.85%)
	Plastic F.B	2(20%)	4(40%)	1(10%)	2(20%)	1(10%)	0	0	10(5.23%)
	Others	0	2(18.18%)	3(27.27%)	1(9.09%)	3(27.27%)	1(9.09%)	1(9.09%)	11(5.75%)
Larynx/Trachea/Bronchi	Coin	4(40%)	5(50%)	0	1(10%)	0	0	0	10(52.63%)
	Seed Grains & Vegetable Seeds	0	0	0	0	0	0	0	0
	Denture	0	0	0	0	0	0	1(100%)	1(5.26%)
	Metallic F.B	1(50%)	1(50%)	0	0	0	0	0	2(10.52%)
	Plastic F.B	1(50%)	1(50%)	0	0	0	0	0	2(10.52%)
	Others	1(25%)	0	1(25%)	0	1(25%)	1(25%)	0	4(21.05%)
TOTAL		145(20.42%)	211(29.71%)	105(14.78%)	97(13.66%)	82(11.54%)	44(6.19%)	26(3.66%)	710(100%)

**Table 4: Management of FB Ear. [FB-Foreign Body,SYR-Syringing,CF-Crocodile Forceps,JHP-Jobson Horn Probe,OTO-Otoendoscopy]**

TYPE OF F.B	SYR	CF/JHP	OTO	TOTAL
Insect (living/non-living)	19(23.17%)	40(48.78%)	23(28.04%)	82
Cotton Buds	0	108(98.18%)	2(1.8%)	110
Stone Pieces	15(75%)	5(25%)	0	20
Seed Grains & Vegetable Seeds	0	50(70.42%)	21(29.57%)	71
Others	11(29.72%)	19(51.35%)	7(18.91%)	37

**Table 5: Management of FB Nose. [TF-Tilley's Forcep,EC-Eustachian Tube Catheter,NE-Nasal endoscopy]**

TYPE OF F.B	TF/CF	JHP/EC	NE	TOTAL
PAPER FRAGMENTS	25(48.07%)	15(28.84%)	12(23.07%)	52
SPONGE FRAGMENTS	7(87.5%)	1(12.5%)	0	8
SEED GRAINS & VEGETABLE SEEDS	27(29.67%)	43(47.25%)	21(23.07%)	91

METALLIC F.B	3(15.78%)	7(36.84%)	9(47.36%)	19
OTHERS	0	0	10(100%)	10

**Table 6: Management of FB pharynx/esophagus. [RH-Rigid Hypopharyngoscopy,RE-Rigid endoscopy,LP-Lateral Pharyngotomy,TH-Thoracotomy]**

TYPE OF F.B	TF/CF	RH/RE	LP/TH	TOTAL
FISH BONE	100(90.09%)	11(9.90%)	0	111
COIN	0	18(100%)	0	18
CHICKEN BONE/MEAT BONE	0	18(100%)	0	18
DENTURE	0	8(100%)	0	8
METALLIC F.B	0	15(100%)	0	15
PLASTIC F.B	0	10(100%)	0	10
OTHERS	0	11(100%)	0	11

**Table 7: Management of FB larynx/trachea/bronchi. [DL-Direct laryngoscopy,RB-Rigid Bronchoscopy]**

TYPE OF F.B	DL/RB	TH	TOTAL
COIN	10(100%)	0	10
SEED GRAINS & VEGETABLE SEEDS	0	0	0
DENTURE	1(100%)	0	1
METALLIC F.B	2(100%)	0	2
PLASTIC F.B	2(100%)	0	2
OTHERS	4(100%)	0	4

**DISCUSSION**

Overall 710 patients' data from the previous medical records were scrutinized for the study, out of which males were 400(56.33%) & females were 310(46.33%) with a sex ratio of male: female as 1.2:1 showing male predominance like majority of the available literature.<sup>[5,9,10]</sup>

As for the majority of the available studies<sup>[5,9,10,11,12,13]</sup>, ear was the predominant site of FB location followed by nose. However, in my present study, predominant site of FB is ear accounting 320 patients (45%) followed by FB in pharynx/esophagus with a total of 191 patients (26.9%).

Clinical presentation of FB ear cases shows more cases presenting with earache(56.25%) followed by crawling sensation/irritation (31.87%). However, study of Da Silva BSR et al<sup>[14]</sup> showed FB ear presenting with more of hypacusis(39.53%) followed by earache(24.41%). Like the study of Da Silva BSR<sup>[14]</sup>, our study also reveals unilateral nasal discharge to be the most common complaint associated with FB nose accounting for 78.88%. However, study made by Oreh AC et al<sup>[15]</sup> showed more frequency of asymptomatic cases with nasal FB. As per study of Da Silva BSR et al<sup>[14]</sup>, for FB oropharynx, most common complaint was odinophagia (88.88%). However, for the present study, FB sensation of throat is the most common presenting complaint with 90.05% cases. For FB larynx/trachea/bronchi, dyspnea was present in all 19 cases recorded for the study.

Age wise distribution shows more number of cases for second decade of life between 11-20Y accounting for 211 cases (29.71%), followed by first decade between 0-10Y with a total of 145 cases (20.42%). However study made by Shrestha I et al,<sup>[16]</sup> shows majority of cases for first decade (0-10Y) followed by second decade (11-20Y). Data reveals FB nose was common in pediatric age-group, whereas adults have more of FB pharynx/esophagus & FB larynx/trachea/bronchi. More or less equal distribution of FB ear among all age-groups is revealed from the study.

For the frequency of the type of FB ear, the most common FB was cotton buds as 34.37% followed by insect(living/non-living) as 25.62%. This matches with the study of Da Silva BSR et al<sup>[14]</sup> showing more FB ear as cotton buds. FB Seed grains & vegetable seeds ear (22.18%) was much more common in pediatric age-group due to more tendency to playfully put stuffs in ear in children. Majority of the FB ear was removed in Out- door department with techniques like syringing or using crocodile forceps/Jobson Horn Probe. But some of the deeply impacted FB ear of hygroscopic vegetable seeds (29.57%) &

insects (28.04%) were Otoendoscopically removed.

For the frequency of the type of FB nose, the most common FB was seed grains & vegetable seeds as 50.55% followed by paper fragments as 28.88%. However, the study of Da Silva BSR et al<sup>[14]</sup> shows more cases of FB nose with paper fragments & sponge fragments. Overall, FB nose cases were concentrated in first & second decade of life due to natural tendency of kids to insert small objects in the nose playfully. Majority of the nasal FB which were lodged anteriorly & visible, were removed in out-door department using tilley's forceps/crocodile forceps or by blunt Eustachian tube catheter or using Jobson Horn probe. Some of the posteriorly lodged FB which were not visible in anterior rhinoscopy were removed using nasal endoscopy procedure.

For the frequency of the type of FB pharynx/esophagus, the most common FB was fish bone accounting 58.11% & majority of them was removed in out-door department using tilley's forceps/crocodile forceps. Rest of the FB cases like coin/ chicken bone/ meat bone were managed using rigid hypopharyngoscope/rigid esophagoscope.

Although rare in comparison to other sites of FB lodgement in ENT aspect, the frequency of type of FB larynx/trachea/ bronchi shows more cases with coins lodging in the airway, more so seen in the paediatric age-group which were removed using rigid bronchoscope/direct laryngoscopy.

**CONCLUSION**

The present study reveals more cases of FB in ENT around second decade of life with decreasing trend as the age increases. As for the site of location, FB ear reported the most while nasal FB more common around pediatric age-group. The study also concludes that, majority of the FB ear can be managed with less effort in out-door department in contrast to the FB larynx/trachea/bronchi & FB lodged in esophagus which requires much more cumbersome procedures like rigid-bronchoscopy or rigid-esophagoscopy.

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