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Original Research Article

Ear, nose, throat foreign bodies: experience in the tribal population

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ABSTRACT

Background: Foreign bodies (FB) in the ears, nose or throat are a common occurrence in otorhinolaryngology (ENT) emergency services. The management calls for prompt & precise intervention which in turn decreases the overall morbidity and mortality. The aim of the study was to study the age & gender distribution, modes of presentation, management & complications of various foreign bodies in patients attending emergency & ENT OPD.
Methods: It is a prospective, interventional clinical study conducted in a tertiary Care Hospital – Shri Vasantrao Naik government medical college situated in tribal region of Yavatmal, Maharashtra. About 200 patients from the tribal population with foreign body in ear, nose & throat region from November 2012 to October 2014 were included in the study.
Results: Out of 200 patients, the commonest location of FB was in ear with 103 patients (51.5%) followed by nose with 72 patients (36%) and throat 25 patients (12.5%). 203 FB were removed from 200 patients. Throat cases include digestive tract (21 cases) and tracheobronchial (4 cases) FB. Amongst the FB in throat the commonest was fish bone and the commonest site being cricopharynx. Seeds were the commonest FB in ear & nose. A greater proportion of cases - 109 (54.5%) were below 10 years of age.
Conclusions: A great degree of suspicion, prompt diagnosis and timely intervention can reduce the overall mortality and morbidity associated with ear, nose and throat foreign bodies.

Keywords: Foreign body, Ear, Nose, Throat, General anaesthesia

INTRODUCTION

The problems of foreign bodies, their identification and management have posed a great challenge to a medical practitioner since time immemorial. Ear, nose, and throat (ENT) foreign bodies (FB) are more common among children, although adult age groups are involved. The etiological factor responsible for FB 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.[1] The reasons for the insertion of FB include curiosity, boredom, imitation, irritation, rhinitis, otalgia, fun making, and the wish to explore the orifices of the body.[2] It may be accidental or deliberate self-harm especially in adults.

The presentation may be life-threatening in airway FB. FB in other aero-digestive tract may present as mild to severe discomfort, pain, blockage, bleeding, discharge, and impaired functioning of the involved site. Despite the relative frequency of presentation of FB, most of the literature on this subject consists of isolated studies in case of FB either in ear or nose or tracheobronchial tree or aero-digestive tract.

Similar studies were done in urban & rural region but the same was lacking in tribal region. In this study, an attempt is made to analyze some of the key issues about the presentation, management and complications arising out of FB in the ear, nose and throat as a whole in the tribal population.

METHODS

This prospective study was conducted in the department of otorhinolaryngology, Shri Vasantrao Naik Government medical college & hospital, Yavatmal. It comprises of 200 patients with FB in ear, nose & throat attending both OPD and emergencies. Consecutive 200 patients from November 2012 to October 2014 presenting with FB in ENT were included in the study. All the patients were evaluated carefully with thorough history and a complete ENT examination. Radiological investigations like X-ray were done when the foreign body was not visible. CT scan was done wherever necessary. This was followed by removal of foreign body. Demographic data as well as site were obtained from the patient or the relatives in case of Child. The type of anaesthesia, type of procedure and complications are presented in Table and Figures.

RESULTS

Of the total of 200 cases (103 ear cases, 72 nose cases, 25 throat cases), 109 (54.5%) [(32 (31%) ear, 69 (95.9%) nose, 08 (32%) throat] accounted for children 10 years or less of age. There were 108 males [(54 (52.4%) ear, 38 (52.7%) nose, 16 (64%) throat] & 92 females [(49 (47.6%) ear, 34 (47.3%) nose, 09 (36%) throat]. Total 203 FB were removed from 200 cases of FB ENT. Out of 103 ear cases, 100 cases (97.1%) had unilateral FB & 3 (2.9%) cases had bilateral FB. Out of 100 unilateral cases, 54 cases had FB in the right ear and 46 cases had FB in left ear. All 72 nose cases (100%) were unilateral. FB in 39 (54.2%) cases was in the right nasal cavity and 33 cases (45.8%) in left nasal cavity. Thus slight right sided predominance was seen in case of FB ear and FB nose. In the present study all digestive tract and tracheobronchial FB were included as throat FB. FB throat cases 25 included digestive tract FB-21 (84%) cases & tracheobronchial FB- 4 (16%) cases. In case of FB throat 9 cases (36%) were in cricopharynx, 5 cases (20%) each in oropharynx and oesophagus while in 2 cases (8%) the site was oral cavity. Left main bronchus constituted 2 cases (8%) followed by right main bronchus- 1 case (4%). Most common clinical features in ear FB cases were pain 96 (93.2%) & FB sensation 96 (93.2%) while nose FB had unilateral nasal discharge 66 (91.6%) & nasal obstruction 58 (80.6%).

Table 1: Type of foreign body.

Ear		Nose		Throat	
Type of FB	**No. Of FB**	**Type of FB**	**No. Of FB**	**Type of FB**	**No. Of FB**
Organic	80 (75.5%)	**Organic**	44 (61.1%)	**Organic**	20 (80%)
Seeds	30 (28.3%)	Seeds	35 (48.6%)	Fish bone	8 (32%)
Groundnut	8 (7.6%)	Groundnut	8 (11.1%)	Chicken bone	4 (16%)
Jowar grain	3 (2.8%)	Tamarind seed	5 (6.9%)	Mutton bone	2 (8%)
Green pea	3 (2.8%)	Custard apple seed	4 (5.5%)	Groundnut	2 (8%)
Dal	3 (2.8%)	Soyabean	4 (5.5%)	Betelnut	1 (4%)
Tamarind seed	2 (1.9%)	Greenpea	3 (4.2%)	Thread	1 (4%)
Custard apple seed	2 (1.9%)	Betelnut	3 (4.2%)	Tooth	1 (4%)
Soyabeen	2 (1.9%)	Bengal gram	3 (4.2%)	Bengal gram	1 (4%)
Wheat grain	2 (1.9%)	Sagograin	2 (2.8%)	**Inorganic**	5 (20%)
Betelnut	2 (1.9%)	Corn	3 (4.2%)	Coin	2 (8%)
Corn	2 (1.9%)	Wooden toy	4 (5.5%)	Plastic piece	1 (4%)
Cowpea	1 (0.9%)	Cotton	2 (2.8%)	Denture	1 (4%)
Insects	28 (26.4%)	Thermacol ball	2 (2.8%)	Metallic locket	1 (4%)
Cotton	10 (9.4%)	Paper	1 (1.4%)		
Wooden stick	8 (7.6%)	**Inorganic**	28 (38.9%)		
Paper	4 (3.8%)	Chalk piece	6 (8.2%)		
Inorganic	26 (24.5%)	Plastic	4 (5.5%)		
Plastic	10 (9.4%)	Eraser	3 (4.2%)		
Stone	5 (4.7%)	Button	3 (4.2%)		
Chalk piece	4 (3.8%)	Stone	2 (2.8%)		
Metal	4 (3.8%)	Ball bearing	2 (2.8%)		
Soap	2 (1.9%)	Battery	2 (2.8%)		
Crayon	1 (0.9%)	Nose ring	2 (2.8%)		
		Crayon	2 (2.8%)		
		Metallic nut bolt	1 (1.4%)		
		Naphthalene ball	1 (1.4%)		
Total	106	Total	72	Total	25

Table 2: Age wise distribution.

Age group (years)	Ear	Nose	Throat	No. of cases
0-10	32(31%)	69(95.9%)	8(32%)	109(54.5%)
11-20	17(16.5%)	2(2.8%)	1(4%)	20(10%)
21-30	15(14.6%)	—	4(16%)	19(9.5%)
31-40	13(12.6%)	—	5(20%)	18(9%)
41-50	12(11.7%)	1(1.3%)	4(16%)	17(8.5%)
51-60	10(9.7%)	—	2(8%)	12(6%)
>60	4(3.9%)	—	1(4%)	5(2.5%)
Total	103	72	25	200

FB sensation 21 (84%), odynophagia 19 (76%) and dysphagia 19 (76%) were commonest presentation in throat FB cases.

The most commonly employed methods of FB removal were ear syringing in 62 (60.2%) cases of ear FB, Jobson Horne probe in 47 (65.3%) cases of FB nose while cricopharyngoscopy, oesophagoscopy & bronchoscopy were done in 9 (36%) cases, 5 (20%) cases & 4 (16%) cases respectively of FB throat cases. In cases of ear FB 80 (75.5%) FB removed were organic while 26 (24.5%) were inorganic. Seeds/ nuts 30 (28.3%), insects 28 (26.4%) and plastic 10 (9.4%) were the commonest among the list. In cases of nose FB 44 (61.1%) FB removed were organic while 28 (38.9%) were inorganic. Seeds 35 (48.6%), chalk piece 6 (8.2%), plastic 4 (5.5%) were the commonest among the list. Groundnut was the commonest FB removed from ear & nose cases.

In cases of throat FB 20 (80%) FBs removed were organic while 5 (20%) were inorganic. Fish bone 8 (32%), chicken bone 4 (16%), coin 2 (8%) were the commonest among the list. About 155 cases (ear-89, nose- 62, throat- 4) required no anaesthesia while 43 cases (ear-14, nose- 10, throat- 19) were managed under GA and 2 cases (1%) under LA. The commonest complications in ear FB cases were Canal wall oedema 12 (11.6%) & otitis externa 6 (5.8%); epistaxis 8 (11.1%) & nasal mucosal tear 6 (8.3%) in nasal FB cases & bronchospasm 1 (4%) & bronchopneumonia 2 (8%) in throat FB cases.

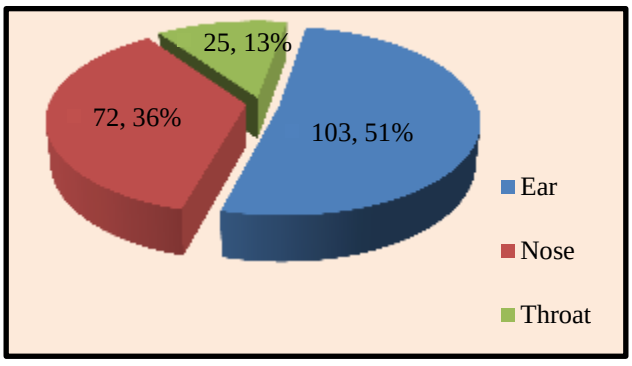

Figure 1: Case distribution.

Figure 2: Foreign body in ear.

Figure 3: Foreign body in nose.

Figure 4: X-ray of neck- (AP, lateral view) showing radio-opaque circular FB in the cricopharynx at the level of c6-c7.

Figure 5: Various types of FB extracted.

DISCUSSION

In this study, ear FB had the highest incidence (51.5%) followed by the nose (36%), and throat (12.5%). This is comparable to study done by Ahmad et al, Breno de Silva et al, Endican et al.[3-5] In contrast, the study conducted by Hon et al showed that aero-digestive FB constituted the highest incidence followed by ear and nose.[6] This difference happened because we recruited all the inpatients and outpatients whereas Hon et al only included inpatients in his study.[6]

In the present study, out of 200 cases of FB- ear, nose and throat, the youngest patient was 10 month old and the oldest patient was of 70 year old. The maximum number of cases i.e. 54.5% (109) were seen in first decade (0-10 age group) while the least number of cases i.e. 2.5% (5) were seen in greater than 60 age group. Similar results of 0-10 age group preponderance were seen in the study of Ray et al & Shreshtha et al.[7,8] Children are common victims due to their tendency to put things in their natural orifices like ear, nose and mouth, inability to masticate well and inadequate control of deglutition, as well as the tendency to cry, shout, play during eating. Edentulous and poor masticating habits are predisposing factors. In FB ear patients over 20 years age group, FB was introduced accidentally in patients ears such as during the act of scratching the ear [Wooden sticks and paper- 12 (11.6%) cases] or by introducing ear plugs [cotton- 10 (9.4%) cases]. The 27 out of 28 (26.4%) cases in which the FB was an insect were over 20 years of age. In FB nose patients, the incidence fell with age and only one patient was seen over 20 years of age. With growth and cognitive development, placing FB in the nose becomes rare in adults and is seen only in psychiatric patients (1 case).[9] In FB throat patients over 20 years age group, the incidence of FBs in adult was more consistent which did not show any peak in a specific age group. The apparent male preponderance, which though was not statistically significant could be attributed to the adventurous trait of male gender. There were similar finding by authors who reported higher incidence in male, but some reported no significant gender distribution.[5-7,10]

In the present study, high proportion of FB were seen on right side 54 cases (52.4%) in case of FB ear and 39 cases (54.2%) in case of FB nose as compared to left side 46 cases (44.7%) in case of FB ear and 33 cases (45.8%) in case of FB nose with 3 cases (2.9%) of FB ear bilateral. Similar observation of right side laterality were made by Hon et al and Prayaga et al which postulated that it was contributed by right handedness.[6,11] In addition, a study conducted by Peridis et al also demonstrated significant result of handedness affecting the site of ear FBs in children.[12] In the present study, 70.9% of FBs were found to be of organic in nature while 29.1% inorganic. The present study is comparable with other studies conducted by Hon et al & Tiago et a1.[6,13] The types of the ear & nose FB encountered in this study vary with the age group. Plant seed/nut, followed by beads and small toys were the commonest. This is in agreement with numerous reports.[6-8] Groundnut was the most common FB removed in the present study. It is commonly given to children for its high protein and caloric value. It is known as poor man's almond in India. In contrast with adult, cotton bud was the dominant foreign body. In our opinion, the explanation of the impacted cotton bud in adult age group was probably due to habitual cleaning of the external auditory canal or itchy external ear lesion. Fish bone was the commonest foreign body in throat cases. The reason attributed was that the fish bone forms an integral part of diet in the tribal population. Also multiple, small and sharp nature of fish bones compared to chicken bone and mutton bone makes them vulnerable for impaction in digestive tract.

Most common presenting features were earache, ear discomfort, itching in FB ear cases while nasal discharge, nasal obstruction in FB nose cases. This is in agreement with numerous reports.[2-5,8-10,13-15]. FB in digestive tract presented with dysphagia, odynophagia & pooling of saliva while fever, cough, dyspnoea were the presenting complaints of bronchial FB cases. Cricopharynx was the most common site in digestive tract FB cases while left bronchus was common site compared to right in bronchial FB cases. This is in contrast to studies conducted by Amutta et al, chai et al, Endican et al where FB in right bronchus were common than in left bronchus.[14,15,5] The reason attributed could be the small sample size of FB bronchus patients (3 cases).

Radiological investigations like X-ray, CT scan and MRI are very useful diagnostic tool. In our study we advised X-ray in patients whose FB were not visible from outside. CT scan was done in most of throat cases. Most of the ear cases were managed by syringing 62 cases (60.2%), 21 (20.4%) cases by Hook, 11 (10.7%) cases by Jobson horne probe, 5 cases (4.8%) by Hartmans forceps. The present study is comparable with the studies conducted by Tiago et al, Amutta et al for management of FB ear.[13,14] Most of the nose i.e. 47 (65.3%) cases were managed by Jobson horne probe, 13 cases (18%) by Tilleys forceps, 8 cases (11.1%) by FB Hook, 4(5.6%) cases by DNE & Eustachian catheter. The present study

is comparable with the studies conducted by Ahmad and Amutta for management of FB nose.[3,14] Most of ear & nose FB were managed in OPD without any anaesthesia. In the present study, 25 patients presented with FB throat, 9 (36%) cricopharyngeal FB cases were managed by cricopharyngoscopy, 5 (20%) oesophageal FB cases by oesophagoscopy, 5 (20%) oropharyngeal cases by Tilleys forceps, 4 (16%) tracheo- bronchial FB cases by bronchoscopy, 2 (8%) oral cavity FB cases by incision & extraction and Tilleys forceps respectively. Removal methods in the present study were similar to studies conducted by Ahmad and Amutta.[3,14] Most of the throat FB cases were managed in OT under GA.

Sharp FB of neck like needle, wire etc. may migrate extraluminally as their position changes with each act of deglutition. We report a similar case of extraluminal migration of 2.5 cm linear fish bone managed via an external approach under local anaesthesia. Our low complication rate was due to the fact that no attempt at removal of removal was done before the presentation to the ENT trained resident doctors, and otorhino-laryngologist. No death was reported in the present study. Adequate visualization, appropriate equipment, a co-operative patient and a skilled physician are the keys to successful FB removal. The site of impaction, size and shape of FB is important to plan the management protocol.

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

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