Research Paper

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Foreign Bodies in Otorhinolaryngology Practice : our Experience

Medical Science

KEYWORDS : Foreign Bodies, Ear, Nose, Pharynx

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ABSTRACT

Objectives-To study the incidence, types, management and complications of foreign bodies encountered in the ear and upper aerodigestive tract.

Methods-100 patients with foreign bodies in the ear/upper aerodigestive tract,consenting to photographic documentation,investigations and removal of foreign body were included.Foreign body beyond the oesophagus/in lung was excluded.History,examination,investigation and documentation,followed by appropriate removal was done.Complications,if any,were noted.

Results-Majority(55%) were aged 0-10years.87% presented with complaints of foreign body; incidental finding in 13%.Commonest sites in descending order of frequency in children were ear,nose,pharynx,oesophagus and trachea-bronchi. In adults,the sites of occurrence were ear,pharynx,oesophagus,nose and trachea-bronchi in descending order.100% of foreign bodies were successfully removed.16% required general anaesthesia for removal; 84% were removed on an outpatient basis.15% had complications secondary to the foreign body; no mortalities were noted.

Conclusion-Foreign bodies in ENT are more common in children.Appropriate and early intervention minimises complications.Prevention is essential by increasing awareness about its dangers.

INTRODUCTION

A foreign body is an endogenous substance incongruous with the anatomy of site of impaction. Ear, nose and throat foreign bodies are commonly encountered in ENT clinical practice[1].

Accidents with foreign bodies are more common in the paediatric population[2] (0 – 10 year age group)[1]. In children, inanimate objects[3] are most commonly found in the external auditory canal[4]. In adults, fish bones[5] are most commonly seen in the pharynx (tonsils)[6].

Pharyngeal or tracheal foreign bodies are medical emergencies[7]. They tend to present earlier and are more promptly removed compared with ear and nose foreign bodies[3].

Approximately 90% of foreign bodies can be removed without significant complications in an outpatient setting with simple equipment[8]. The remainder require sedation and/ or specialized equipment.. Prompt removal and adherence to the general principles of foreign body removal result in successful removal rates as high as 98% overall, with minimal or no complications[9].

Our study aims to demonstrate the incidence, types, management and complications of foreign bodies encountered in the ear and upper aerodigestive tract, in our setting.

MATERIALS AND METHODS

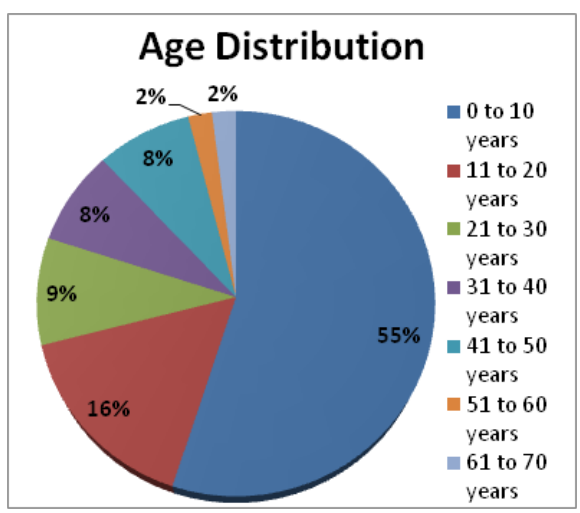
A prospective observational study was conducted at the Department of ENT and Department of Emergency Medicine, Kempegowda Institute of Medical Sciences, Bangalore, from January 2014 to August 2014.

100 patients with foreign bodies in the ear or upper aerodigestive tract, consenting to photographic documentation, investigation confirming the presence and/ or location of the foreign body and appropriate procedure for its removal, were included in the study. Foreign bodies located beyond the oesophagus or in the lung, were excluded.

A detailed history was obtained, followed by clinical examination, investigation, radiographic and/ or photographic documentation and removal of the foreign body by appropriate standard method/s. Those requiring general anaesthesia for removal were admitted while the remainder were treated on an outpatient basis. The presence of complications, if any, was noted.

RESULTS

Male : female ratio was 2:1. Patients aged 11 months to 69 years were studied with majority of cases i.e. 55%, aged 0-10 years (Graph 1).



Graph 1 – Age distribution of patients with foreign body in the ear/ upper aerodigestive tract.

65% of cases presented within 24 hours of foreign body entering the ear/ upper aerodigestive tract and 22% presented between 25-48 hours. In 13% of those studied, a foreign body was found incidentally on examination/ investigation.

Foreign bodies were seen in the ear, nose, pharynx, oesophagus and laryngotracheobronchial tree. (Table 1)

Age group	0-18 years	>18 years	Total

Ear	36 (52.9%)	15 (46.9%)	51 (51%)
Nose	23 (33.8%)	2 (6.3%)	25 (25%)
Pharynx	7 (10.3%)	9 (28.1%)	16 (16%)
Oeso-phagus	1 (1.5%)	5 (15.6%)	6 (6%)
Laryngo tracheo bronchi	1 (1.5%)	1 (3.1%)	2 (2%)
Total	68 (100%)	32 (100%)	100 (100%)

Table 1- Distribution of foreign bodies in the ear and upper aerodigestive tract according to age

Of 36 children with aural foreign bodies, majority were aged less than 12 years. The right ear was more commonly involved. 5 children had insects and 31 had inanimate objects such as seeds, grain, cotton, chalk, paper, pencil lead, eraser, beads, toys, pebbles etc in the external auditory canal. Among adults with aural foreign bodies, 7 patients were found to have various insects and 8 had inanimate objects in the external auditory canal such as ear bud cotton tips in 5 cases, ear stud in 1 case, thermocole in 1 case and sand in 1 patient. Irrigation, suction or instrumentation with forceps/cerumen loop were used in their removal. (Fig 1)

Fig 1- Foreign bodies in external auditory canal - (a) Multiple foreign bodies removed from a 6 year old girl during syringing, (b) Beads, (c) Cotton ear bud, (d) Paper, (e) Seed, (f) Thermocole, (g) and (h) Insect.

Nasal foreign bodies were seen most commonly in children aged less than 7 years. The right nostril was more commonly involved. The various nasal foreign bodies seen in children were seeds, chalk, eraser, pebbles, batteries, toys, buttons and ornament beads. Only 2 adults presented with nasal foreign body, both of which were due to accidental slippage of nose stud. Instrumentation with forceps or cerumen loop, suction, magnets or forced expiration was used extrude these. (Fig 2)

Fig 2 – Foreign bodies in nose – (a) and (b) X ray skull lateral and posteroanterior views showing magnets in both nasal cavities, (c) Stone, (d) Eraser, (e) Battery, (f) Bead, (g) to (j) Traumatic loss of right upper canine followed by migration through hard palate and found in floor of right nasal cavity

Among pharyngeal foreign bodies i.e. involving the oropharynx and hypopharynx, the cricopharynx was the commonest subsite where foreign bodies were found in children. A metal coin was found in the cricopharynx of 4 children, a metal ring in 1 child and a plastic bottle cap in 1. Fish bone was lodged in the oropharynx (tonsil) of 2 children .The oropharynx was the commonest subsite of involvement in adults with pharyngeal foreign bodies as 7 adults presented with fish bone lodged in this site.

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2 adults were found to have mutton/chicken bone lodged in the cricopharynx. Foreign bodies in the hypopharynx were removed by direct laryngoscopy or hypopharyngoscopy, while those in the oropharynx were removed under direct vision or videolaryngoscopic guidance using forceps.

The various oesophageal foreign bodies were mutton/chicken bones in both children and adults, and 2 adults presented with dislodged dentures. All of these were removed by oesophagoscopy.

2 cases of laryngotracheobronchial foreign body presented - a child with the broken piece of the outer Fuller's metallic tracheostomy tube in the right bronchus and an adult with accidental aspiration of metallic jacket rivet in the left bronchus. Both foreign bodies were extruded using a rigid bronchoscope. (Fig 3)

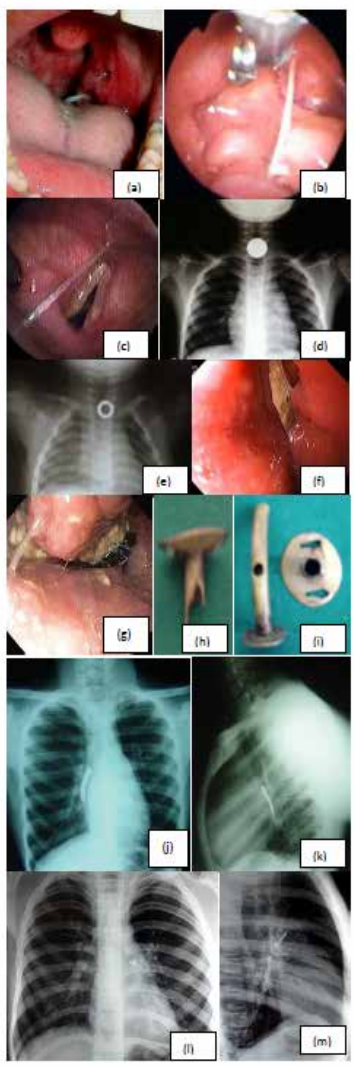

Fig 3 – Foreign bodies in pharynx, oesophagus and bronchi – (a) Fish bone in palatine tonsil, (b) Fish bone in lingual tonsil, (c) Fish bone in hypopharynx, (d) Coin in cricopharynx, (e) Metal ring in cricopharynx, (f) Chicken bone in oesophagus, (g) Leather piece in oesophagus, (h) to (k) Broken piece of outer tube of Fuller's metallic tracheostomy tube found in right bronchus (l) and (m) Jacket rivet in left bronchus.

In 100% of the cases, the foreign body was successfully removed. 16% of patients required removal of the foreign body under general anaesthesia and were therefore admitted, while 84% were treated on an outpatient basis.

Complications were seen in 15% of cases i.e 11 cases with aural foreign bodies developed otitis externa, 1 case had traumatic tympanic membrane perforation, 2 cases with nasal foreign body developed nasal septal perforation secondary to battery impaction and 1 case presented with retropharyngeal abscess. No mortalities occurred.

DISCUSSION

Foreign bodies in ENT are a more common occurrence in children and certain high risk groups of adults such as those with psychiatric illnesses[9]. Unlike in adults, the diagnosis in children is often delayed because the causative event is usually unobserved, the symptoms are nonspecific and the patients are misdiagnosed[7].

A study by Hon et.al. demonstrated a significantly higher proportion of foreign bodies in the right ear and nostril compared to the left[4], as was seen in our study. In children, the most involved sites in descending order of frequency are the ear, nose, pharynx, oesophagus and the trachea-bronchi[10,11] ,while in adults, the pharynx, ear, oesophagus, nose and trachea-bronchi are most commonly involved[1], as was observed in our study. Certain studies have demonstrated that among adults, fish bone in the oropharynx(tonsils) is the commonest [1,5,] while others have shown that ear bud cotton tips[12] and insects in the external auditory canal[13] are common.

Most ear and nose foreign bodies can be removed in the outpatient department with minimal risk of complications. Pharyngeal and tracheal foreign bodies are medical emergencies requiring surgical consultation and endoscopic guided remova[17] , as was practised in our study. Successful removal depends on several factors including location of the foreign body, type of material, whether the material is graspable (ie.soft and irregular) or non graspable (ie.hard and spherical), physician dexterity and patient cooperation[7]. In our study, 100% of foreign bodies were successfully removed, with only 16% having complications and no mortalities were reported.

CONCLUSION

Foreign bodies in the ear and upper aerodigestive tract are relatively common, particularly in children. Its type, shape, size and location determined the type of attempted removal.

Appropriate and early medical intervention to remove the foreign body minimised complications. Prevention is essential through increasing awareness of the dangers of foreign bodies.

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