

Original Research Article

DOI: <http://dx.doi.org/10.18203/issn.2454-5929.ijohns20190772>

Panorama of foreign body in upper digestive tract in the population of Uttarakhand

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Received: 09 November 2018

Revised: 28 December 2018

Accepted: 29 December 2018

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ABSTRACT

Background: Foreign body aspiration is more common in children than adults because they explore the world with their hands and mouth and also have incomplete control and immature judgment. Foreign bodies in ENT are a medical emergency as their removal demands great skill due to unpredictability in the procedure and the complications associated with it.

Methods: A prospective study was conducted on 40 cases of digestive tract foreign bodies in relation to age, sex, type, site, clinical presentation, extraction and complications.

Results: Youngest child was 5 months old. Most predisposed age group was 0-5 years (60% of cases). Cricopharynx (24 cases) was the most common site of impaction for foreign body. In the present study toys (22.5%) were most common foreign bodies followed by coins (15%) ingestion.

Conclusions: Avoid carelessness. Avoid hasty drinking, eating, talking and running with anything in the mouth. Keep the things out of reach of the children. Be particular in sleep, anesthesia, coma or delirium. Avoid putting objects into mouth.

Keywords: Foreign body, Oesophagoscopy, Direct laryngoscopy

INTRODUCTION

Nature determined that we possess seven orifices. The otolaryngologist deals with five. Children are naturally curious about their surroundings and about these orifices.¹ They are inclined to place toys, foodstuff and household articles in the ear, nose or the oral cavity. Sometimes the culprit is a sibling or a playmate or parents.

Foreign body ingestion is a common finding in ENT emergency. However in certain cases it can get impacted or can be penetrating or can cause abscess formation which can cause serious complications in otherwise unnoticeable disease as these accounts for about one third of the Emergencies seen in ENT. Thus though common and easy to treat, the treating doctor (who are mostly residents or junior consultants) should be very much

aware of these certain conditions which otherwise can cause serious morbidity and mortality to the patient (which is usually a child) and also in today's changing time save the doctor from medico legal case.

The main objective of this study is to analyse the current impact of ingested foreign bodies in the hilly population of Uttarakhand.

METHODS

A prospective study was conducted at Department of Otorhinolaryngology of Shri Guru Ram Rai Institute of Medical & Health Sciences, Dehradun for a period of 3 years from May 2013 to June 2016. The data was reviewed for preoperative diagnosis, site, type, duration of retention, extraction and complications.

A total number of 40 patients were included in this study after taking prior written informed consent.

Inclusion criteria: all patients presenting to ENT OPD with ingested foreign body and giving consent for removal of foreign body.

Exclusion Criteria: patients with ingested foreign body not giving consent for foreign body removal.

Patients depending on the basis of site of impaction of foreign body and severity of symptoms were planned accordingly for extraction of foreign body on outpatient basis or in patient basis under local or general anaesthesia and were followed up for a period of 3 month for any post-operative complications. Patient presenting with poor general condition, not cooperative for removal under local anesthesia, with impacted or sharp foreign body were admitted and underwent oesophagoscopy or direct laryngoscopy under general anesthesia. Those presenting in OPD with no compromise of general condition, where site of impaction was oral cavity were dealt as cases of office based procedures. The patients were observed for 1-2 hours for bleeding.

All patients with the provisional diagnosis of foreign body ingestion underwent X-ray neck and chest both antero-posterior and lateral views. All patients were observed post operatively either in OPD or IPD for complications and improvement.

Statistical analysis

The data was entered into Microsoft Excel and analysed using SPSS (Statistical Package for Social Sciences) package version 21.0 (IBM inc. Chicago, USA) for relevant statistical comparisons. Results are presented in the form of tables and graphs. The Categorical variables are summarized as frequencies and percentages. Inferential statistics was done using the chi-square test for the categorical variables. Level of statistical significance was set at p-value less than or equal to 0.05.

RESULTS

Out of forty patients of foreign body ingestion in this study, 30 were males and 10 were females with a male preponderance of 75% (Table 1). Youngest child was 5 months old. Most predisposed age group was 0-5 years (60% of cases). Cricopharynx (24 cases) was the most common site of impaction for foreign body (Table 2). In the present study toys (22.5%) were most common foreign bodies followed by coins (15%) ingestion (Table 4; Figures 1-6). About 52.5% of cases presented immediately after ingestion of foreign body within first 24 hours (Table 3).

Most of patients presented in emergency with history of ingestion of foreign body (92.5%), where odyanophagia (95%) and dysphagia (80%) were the common presenting

complaints (Table 5). On clinical examination pooling of saliva (95%) was the most common finding. Radio-opaque foreign bodies were seen in 24 cases where coins were most commonly seen (Table 6). Foreign body in lower oesophagus was associated with underlying achlasia cardia. 3 cases were removed as OPD procedure under local anaesthesia whereas rest of the 37 cases required admission and removal under general anaesthesia (Table 7). All the foreign body was removed with complications of esophageal mucosal breach in 3 cases (7.5%) and stricture in one case post operatively (Table 8). Oesophageal mucosal breach in these 3 cases was managed by keeping the patient nil per oral for 48 hours with intravenous fluid support. One patient with an impacted toe ring which went unnoticed for four months and found incidentally on X-ray chest developed stricture in esophagus which was managed surgically.

Table 1: Demographic distribution.

Age (years)	Sex		No. of patients (%)
	Male	Female	
0-5	18	6	24 (60)
5-15	4	1	5 (12.5)
15-50	1	0	1 (2.5)
>50	7	3	10 (25)

Table 2: Site of impaction.

Site	No. of cases
Oral cavity	3
Above cricopharynx	24
Upper esophagus	8
Mid esophagus	4
Lower esophagus	1

Table 3: Duration of impaction.

Time	No. of patients	%
Within 24 hours	21	52.5
After 24 hours	19	47.5

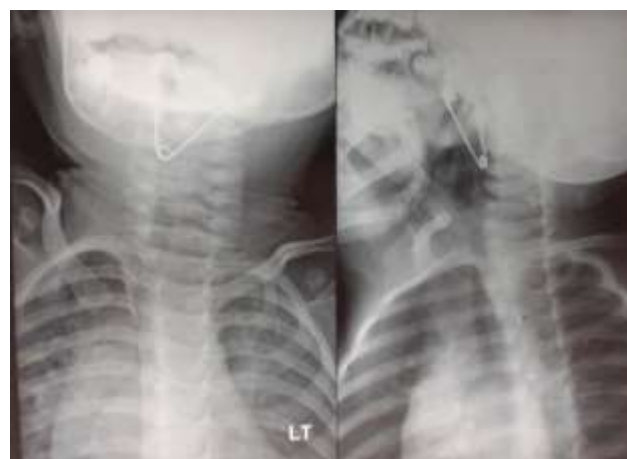


Figure 1: Ingested safety pin.

Table 4: Description of retrieved foreign body.

Type	No. of cases	%
Pins	3	7.5
Bones	4	10
Toys	9	22.5
Blade	1	2.5
Battery cells	5	12.5
Mutton pieces	5	12.5
Coins	6	15
Wire	1	2.5
Buttons	2	5
Rings	2	5
Dentures	2	5



Figure 2: Ingested impacted bone chip.



Figure 3: Ingested toy part.



Figure 4: Ingested blade.



Figure 5: Battery cell after removal.



Figure 6: Removed mutton pieces.

Table 5: Clinical presentation.

Symptoms	No. of cases	Percentage
History of ingestion	37	92
Foreign body sensation	19	47.5
Dysphagia	32	80
Odynophagia	38	95

Table 6: Radiological findings.

Findings	No. of cases
Radio-opaque foreign bodies	24
Radio-lucent foreign bodies	16

Table 7: Managed in.

Management	
OPD	3
IPD	37 (Direct laryngoscopy-24 Esophagoscopy-13)

Table 8: Complications.

Onset	No. of cases	Percentage
Immediate	3	7.5
Late	1	2.5

DISCUSSION

Inhaled and swallowed exogenous foreign bodies in air and food passages include almost all the substances of parts of substances with which human beings commonly come in contact. Most of the foreign bodies in the ENT are due to the carelessness of the children, their parents and people staying with them. The most common foreign bodies encountered are seeds, dals, groundnuts, stones, toys, coins and sticks in children.²

Foreign bodies lodged within the pharynx or oesophagus may present as a minor irritation or as a life-threatening problem. The impact of foreign body depends on its size, shape and its nature (irritating and non-irritating).^{2,3} The pre-disposing factors include age of less than five years, unconscious state like coma, deep sleep, alcoholic intoxication and anesthesia and also the cases of disturbed swallowing during coughing, laughing, talking, crying and cases of vagus and glosso-pharyngeal nerve palsy.

Foreign bodies are of grave concern to the surgeon as their removal not only demands great skill but there is unpredictability in the degree of difficulty of the procedure. A foreign body is an endogenous or exogenous substance in congruence with anatomy of the site of implication.^{2,3} Poor patient cooperation makes the examination or airway manipulation even more challenging. The management of these patients depends on the size, characteristic, location of injury, and neurologic signs.⁴

Symptoms in certain cases are absent and at sometimes become so urgent that life depends directly on accurate diagnosis and speedy safe retrieval of the foreign body. A 5-year retrospective study done in 1997 at the Children's medical center of Dallas, Texas, identified 48 patients with documented injuries to the tonsil, lateral soft palate, or tonsillar pillars that posed significant risk for ICA injury.⁵ Loss of sensation, motor disturbances of pharynx, larynx or oesophagus sometimes act as predisposing factors.

Extraction of FB is preferred with rigid laryngoscope or oesophagoscope with foreign body removal forceps. Flexible esophagoscopy is not preferred as the patient tends to swallow during the procedure and scope does not distend the area for disimpaction of FB. The foreign body forceps are too small to grasp a big foreign body. If foreign body is difficult to remove endoscopically then external approaches like pharyngotomy or thoracotomy are performed.⁶ Complications of foreign body includes fluid and electrolyte imbalance, oesophagitis, retro-pharyngeal abscess, parapharyngeal abscess, mucosal laceration, surgical emphysema, mediastinitis, pneumothorax and oesophagus stenosis. Therefore foreign body in children needs urgent investigations and treatment.

Foreign body removal is quiet safe in the hands of an experienced surgeon, if removed carelessly can cause great amount of morbidity and mortality. Dislodgement of the objects before intubation could cause bleeding and compromise of the airway.⁶ Foreign body removal from throat is most difficult and associated with large number of complications in inexperienced hands; most common of them are injury to the surrounding structures, perforations and injury to the vessels.

Non removal or delayed removal of the foreign bodies from throat can cause life threatening complications depending on the site like acute laryngotracheobronchitis, acute oesophagitis, abscess, mediastinitis, tracheal compression, granulation, strictures, obstructive emphysema, perforation, erosion of large vessels and oesophago-tracheal or oesophago-bronchial fistula.⁶

In a similar study conducted on 32 cases by Weissberg et al, 16 foreign bodies were retained at the crico-pharyngeus, 14 in the thoracic esophagus, and 2 at the lower esophageal sphincter.⁷

There were 13 male and 19 female patients between 9 months and 73 years of age, among them were 10 children aged from 9 months to 11 years. The mean age of all patients was 23 years, 5 months. Bones, fruit pits, and food were retained in 13 patients, of these, one fruit pit was found and extracted at a thoracotomy, after earlier perforation. There were nine coins, all in children; six fish bones, all in adults; one razor blade; and one spring of a laundry peg.

The length of retention in the esophagus ranged from 4 hours to 6 days (mean, 16 hours). Foreign bodies had been extracted by esophagoscopy, using the rigid instrument. Two patients had their foreign bodies removed at thoracotomy. Of these, 1 was admitted to the intensive care unit, where she remained 14 days, until her death. There was 1 complication (tear of esophageal mucosa) and 1 death.⁷

In another study conducted by Alberto et al, which is a prospective study on 320 of esophageal foreign body with regard to age and sex distributions, type, dimensions and consistency, location, clinical presentation, removal and complications.⁸ In the majority of cases injuries happened while children were playing and in 85.3% adults were present.

Children most frequently ingested coins (83.8% cases). Removal was performed in all cases under general anaesthesia. Just one case showed complications, presenting esophageal perforation.⁸ Our study showed similar results.

CONCLUSION

Avoid carelessness. Avoid hasty drinking, eating, talking and running with anything in the mouth. Keep the things

out of reach of the children. Be particular in sleep, anaesthesia, coma or delirium. Avoid putting objects into mouth.

When foreign body is ingested, proper diagnosis and treatment should be given immediately, by ascertaining with the physical examination and location from the specialist doctor concerned.

Funding: No funding sources

Conflict of interest: None declared

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

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Cite this article as: Bansal C, Bharti P, Singh VP. Panorama of foreign body in upper digestive tract in the population of Uttarakhand. Int J Otorhinolaryngol Head Neck Surg 2019;5:416-20.