

Original article

Study of aerodigestive tract foreign bodies

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Abstract

Aero digestive tract foreign bodies are very common in ENT practice. They cause a lot of distress and lead to complications if not attended to. Various foreign bodies can be found in patients of different age groups. Removal by several techniques has been described before. Here we studied retrospectively sane patients with aero digestive tract foreign bodies excluding nasal foreign bodies who attended our ENT department in KIMS & RF, Amlapuram for a period of one year between January 1, 2014 to December,31 2014

Key words: Foreign body, Aerodigestive tract, Oesophagus, Pharynx, Hypopharynx, Throat.

Introduction

Foreign body in aero digestive tract are commonly encountered problems in both children and adults in emergency departments. After nose and ear the esophagus is the commonest site for foreign body impaction. The common signs and symptoms in patient with a foreign body that has been retained for less than 24 hour tend to be gastrointestinal .Major respiratory symptoms are more common weeks or months after ingestion. Various complications can be encountered with the foreign bodies or with procedures done to remove them. Here in this study we intend to present our experience with aerodigestive tract foreign bodies with emphasis on recommendations regarding management of the same.

Aim: 1. To study foreign bodies in aero digestive tract.

2. To study regarding complications encountered

3. To recommend management principles to deal with aerodigestive tract foreign bodies.

Materials All patients attending the OPD in the department of ENT at KIMS &RF , Amlapuram for a period of one year between January 1, 2014 to December,31 2014.

Inlcusion criteria

All patients with chief complaints of pain and difficulty during swallowing of sudden origin after intake of food or with history of swallowing objects .

Exclusion criteria

All mentally challenged patients, patients with nasal foreign bodies.

Methods

All patients were thoroughly examined on admission.

All patients subjected to plain X-ray AP/Lateral view

neck. Other Investigations and procedures done for these patients are noted. Type of foreign bodies retrieved are also tabulated. Complications if any

either preoperative , intraoperative or postoperative have been documented.

Results

Table no. 1 –Age and sex wise distribution

SR.NO.	AGE GROUP	MALE	FEMALE	TOTAL
1.	0-10 YEARS	1	3	4
2.	11-20 YEARS	5	2	7
3.	21-30 YEARS	4	1	5
4.	31-40 YEARS	2	5	7
5.	41-50 YEARS	4	4	8
6.	51-60 YEARS	2	2	4
7.	61-70 YEARS	0	0	0
8.	71-80 YEARS	2	1	3

There is no significant age and sex predilection associated with foreign bodies. Males are 20, Females 18 and total of 38 patients studied.

Table no.2- Type of procedure

SR.NO.	PROCEDURE	TOTAL
1.	Direct Laryngoscopy	10
2.	Rigid Esophagoscopy	24
3.	Flexible Esophagoscopy	4

The main procedure used for the removal of foreign bodies in our study was Rigid Esophagoscopy.

Table no. 3- Type of foreign body

SR.NO.	TYPE OF FOREIGN BODY	TOTAL
1.	Coin	6
2.	Fish Bone	8
3.	Chicken bone piece	20
4.	No foreign seen during procedure	4

The majority type of foreign bodies retrieved in our study was Chicken bone piece.

Table no. 4- complications

SR.NO.		TOTAL
1.	Pre-operative	12
2.	Intraoperative	5
3.	Post-operative	3
4.	Without complications	18

Majority number of cases in our study presented without any major complications. Complications which were encountered though were mainly recognized pre-operatively. Various complications seen are bleeding (spitting of blood), infection with haziness (pus) in X-Ray, fever preoperatively, Bleeding and abscess recognized intraoperatively and Fever, dysphagia, odynophagia for few days in postoperative period. All were dealt successfully with antibiotics and supportive feeding. Ryles tube inserted for all patients with pus recognized before or during procedure. No other major complication were seen.

Discussion:

Foreign body ingestion is a commonly encountered problem in both children and adults in emergency departments (Akhtar & haq,2008; Elyas & Ahmad,2008)^(1,7).After nose and ear ,the esophagus is the commonest site for foreign body impaction as reported by Akhtar & Haq (2008)⁽¹⁾. Impaction of a foreign body in the esophagus causes edema of the mucosa, and the esophageal wall becomes weakened. Retention leads to perforation, which is only a matter of time. Therefore, all foreign bodies retained in the esophagus should be removed as soon as diagnosed (Weisberg & Refaely,2007).⁽¹⁰⁾

Besides history and physical examination, radiological examination is a very important diagnostic tool to identify the foreign body and its location as cited by Athanassiadi et al (2002)⁽¹¹⁾.

Radiolucent objects will require direct visualization or contrast radiographs for location specification in the study conducted by Degghani & Ludemann(2008)⁽¹²⁾. Many alternative methods for removal of foreign bodies have been described in the literature, such as dislodgment by a Foley catheter, advancement with bougie, papain or carbonated fluid treatment, glucagon therapy, balloon extraction during fluoroscopy but rigid endoscopy remains the gold standard treatment as cited by Athanassiadi et al (2002)⁽¹¹⁾.

In a study by Hussain et al (2010)⁽¹³⁾, sixty percent of the patients in their study were of less than 10 years age. In a study by Saki N, et al (2007)⁽¹⁴⁾, it was observed that sixty five percent of patients were four years or less in age at the time of admission. The patients in our study were in all age groups contrary to other studies [range 1-80].

The youngest patient was aged around 4 years and the oldest patient was 80 years old. In a study by Gilyoma et al (2011;p2-5)⁽¹⁵⁾, it was observed that the ages ranged from 1 year to 63 years (mean 7.04 ± 14.62 years). Patients aged ten years and below were the majority and accounted for 88.8%. The results of the above studies suggest that majority of the patients with ingested foreign bodies in esophagus are children. This can be explained by the explorative nature of the children.

In the general population, the most common ingested foreign bodies in children are coins but meat bone,

marbles, safety pins, hair clips, batteries and screws are also reported while impacted meat or other types of food bolus, fish bone and dentures are common in adults.

Major respiratory symptoms are more common weeks or months after ingestion, such as coughing, stridor, fever, chest pain wheezing, chronic upper respiratory tract infections, pneumonia and hemoptysis. The prognosis of untreated esophageal foreign body is catastrophic due to high rate of complications including esophageal perforation, fistula formation and pleural empyema. Methods for removal of foreign bodies have been described in the literature, such as dislodgement by a Foley catheter, advancement with bougie, papain or carbonated fluid treatment, glucagon therapy, balloon extraction during fluoroscopy but rigid esophagoscopy remains the gold standard treatment.

Eighty percent of impacted foreign objects are held up at cricopharynx (Han et al ,2009)⁽²⁾. Annual incidence of foreign body ingestion is 13 episodes per 100,000 population (Ko & Enns,2008)⁽⁴⁾. The majority of foreign object ingestions occur in pediatrics population with a peak incidence between six months and six years of age while in adults true foreign object ingestion more commonly occurs among those patients with psychiatric disorders, mental retardation or impairment caused by alcohol and old age as reported by Lee et al (2007)⁽³⁾. In the general population, the most common ingested foreign bodies in children are coins but meat bone, marbles, safety pins, hair clips, batteries and screws are also reported while impacted meat or other types of food bolus, fish bone and dentures are common in adults (Lee et al.,2007; Pokharel et al.,2008; Haidary & Leider,2007)^(3,5,6)

Although most foreign objects are passed spontaneously, 10 to 20 % of these patients need treatment and approximately 1% will require surgery as reported by Lee et al (2007)⁽³⁾. Patients with esophageal foreign bodies require prompt diagnosis and therapy (Ekim, 2010)⁽⁸⁾. The common signs and symptoms in patient with a foreign body that has been retained for less than 24 hour tend to be gastrointestinal and include dysphasia, drooling, vomiting, gagging and anorexia. Major respiratory symptoms are more common weeks or months after ingestion, such as coughing, stridor, fever, chest pain wheezing, chronic upper respiratory tract infections, pneumonia and hemoptysis as reported by Chang, Chang & Wu(2009)⁽⁹⁾. Posteroanterior, lateral cervical and chest radiographs are basic radiological methods of foreign body detection. since most foreign bodies are radiolucent, for non opaque objects, indirect findings such as larynx and tracheal deviation, as well as computerized tomography, can add in the diagnosis (Han et al ,2009; Elyas & Ahmad,2008).^(3,5)

Rigid esophagoscopy under general anesthesia remains the effective and safe method of removal of foreign bodies from oesophagus as cited by Akhtar & Haq(2008)⁽¹⁾. Endoscopic treatment is a reliable and safe procedure in skilled, expert hands with a high success rate and low morbidity and mortality as reported by Ko & Enns (2008)⁽⁴⁾. The prognosis of untreated esophageal foreign body is catastrophic due to high rate of complications including esophageal perforation, fistula formation and pleural empyema. In the 1900s, the mortality rate was around 50%. The vast majority of foreign bodies were seen in the paediatric age groups, followed by edentulous adults, prisoners and psychiatric patients.

Of all the factors, dentures is most commonly associated with foreign body in adults.

Conclusion

Foreign body in aero digestive tract continues to be a common problem affecting adults and children alike. Rigid endoscopies with forceps removal under general anaesthesia are the preferred management

modality. From their experience, the authors recommend that no foreign body in the aerodigestive tract should be left alone with the hope that it will come out spontaneously. Delay in diagnosis and management can lead to life threatening complications.

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