ORIGINAL ARTICLE

ESOPHAGEAL FOREIGN BODIES: EXPERIENCE WITH RIGID ESOPHAGOSCOPY AT DERA ISMAIL KHAN

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ABSTRACT

Background: Foreign body ingestion is a common presenting problem in our society. Rigid esophagoscopy for extraction of ingested foreign bodies is the recommended treatment. The purpose of this study was to present our experience with rigid esophagoscopy in removal of esophageal foreign bodies.

Material & Methods: This descriptive study was carried out from 1st January 2007 to 31st December 2011, in Department of ENT, Head & Neck Surgery, DHQ Teaching Hospital, D.I.Khan. One hundred and fifty five patients with suspected esophageal foreign bodies, irrespective of age and gender were included in the study. Rigid esophagoscopy under general anesthesia was performed by experienced ENT consultant. Each patient was studied for age, gender, symptomatology, site of impaction, type of foreign body extracted, and complications encountered. All patients were observed for 24 hours in the ward after procedure.

Results: A total of 155 suspected cases of esophageal foreign bodies were managed successfully, comprising 97(62.6%) males and 58(37.4%) females. Mean age of the patients was 32.55+26.66, range1-80 years. Dysphagia was the major complaint 131(84.5%) by these patients. Coins were the predominant FB in children 64(41.3%), while meat bolus 38(24.5%), fish bones 12(7.75%), chicken bones 9(9.5%) and dentures 14(9.05%) were predominant in adult population. Most of the objects 98(63.22%) were lodged in upper esophagus. No mortality encountered in our series.

Conclusion: Rigid esophagoscopy is still useful and relatively safe procedure in management of accidental esophageal foreign bodies.

Key Words: Esophagus, Foreign body, Esophagoscopy.

This article may be cited as: Iqbal K, Khan MI, Marwat M. Esophageal foreign bodies: experience with rigid esophagoscopy at D.I. Khan. Gomal J Med Sci 2012; 10: 194-7.

INTRODUCTION

The accidental ingestion of foreign body is a common occurrence especially in an underdeveloped society. The estimated annual incidence of FB ingestion in the United States is about 120 per million population, with approximately 1500 deaths each year.[1]

Oesophagoscopy has been in vogue since the middle of the 19th century as a means of visualizing and treating certain esophageal disorders.[2] Usually, two types of FBs are encountered, true FB (coins, buttons) and food related FB.[3] Most FBs are seen in children in the upper end of esophagus (cricopharynx), which is the narrowest portion of the alimentary tract and thus, the most common site for lodged foreign bodies.[4,5]

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Radiography can be helpful in localizing coins, button batteries, and other radiopaque objects, but most FBs, including fish bones, are radiolucent.[6]

Potential complications of upper gastrointestinal FBs include abrasion, laceration, puncture with associated abscesses, perforations, and infection of the surrounding structures including mediastinitis, pneumomediastinum, pneumothorax, pericarditis or temponade, fistula or even vascular injuries to the aorta or pulmonary vasculature.[7]

The best method of removal of an esophageal FB remains controversial. Over the past decade, the flexible fiber optic esophagoscopy has gained popularity, mainly owing to its safety. However the rigid esophagoscopy is equally safe and effective in the hands of an experienced surgeon.[8]

The purpose of this study was to present our experience with rigid esophagoscopy in removal of ingested foreign bodies.

MATERIAL AND METHODS

The study was conducted at Department of ENT, District Headquarter Teaching Hospital/ Gomal Medical College, D.I.K, Pakistan. One hundred and fifty-five cases of suspected esophageal foreign bodies were selected from both genders irrespective of the age limit that came to the outpatient or emergency department and admitted to the ENT unit from 1st January 2007 to 31st December 2011. A written informed consent containing terms about inclusion in study, benefits and risks involved, was obtained from each patient. A lateral neck in extension plain radiograph and a posterior-anterior view that included the neck and chest were made routinely before esophagoscopy. Routine screening tests for HBsAG and Anti-HCV were done preoperatively. Each patient was studied for age, gender, mode of presentation, site of impaction, type of foreign body extracted, and complications encountered on a computerized performa. Rigid esophagoscopy was performed for removal of FB under general anesthesia with endotracheal intubation by ENT consultant. All patients were observed for 24 hours after the procedure in the ward. Results were expressed in terms of frequency using SPSS version 17.

RESULTS

A total of 155 patients were included in the study. Males 97 (62.6%) out-numbered the females 58 (37.4%). Mean age of the patients was 32.55±26.66, range 1-80 years. The maximum number of patients in the study group was in the age group 1-10 years. (Table 1)

The most common presenting symptoms of the disease were dysphagia in 131 (84.5%) and odynophagia 119 (76.75%). (Table 2).

Different types of foreign bodies recovered are given in Table 3. Majority of the FBs (63.22%) were recovered from cervical esophagus. (Table 4 and Figures 1, 2, 3)

Table 1: Age distribution of patients

Age (years)	No. of patients	Percentage
1-10	61	39.35%
11-20	11	7.1%
21-30	7	4.5%
31-40	9	5.8%
41-50	12	7.75%
51-60	16	10.35%
61-70	29	18.7%
>71	10	6.45%
Total	155	100%

Table 2: Frequency of presenting symptoms in patients with esophageal foreign bodies

Symptoms	No. of patients	Percentage
Dysphagia	131	84.5%
Odynophagia	119	76.75%
Drooling of saliva	37	23.85%
Pain in neck	28	18.05%
1 Vomiting	18	11.6%
Foreign-body sensation in throat	23	14.85%

Table 3: Type of foreign bodies recovered from esophagus (n=155)

Foreign body extracted	No. of patients	Percentage
Coins	64	41.30%
Meat bolus	38	24.50%
Dentures	14	9.05%
Chicken bones	9	5.80%
Fish bones	12	7.75%
Battery cell	3	1.93%
Miscellaneous	15	9.67%
Total	155	100%

DISCUSSION

Esophageal FBs, after nose and ear, are the most commonly presented in ENT department.[9] All FBs in the esophagus should be removed as soon as diagnosed, because retention leads to perforation which is only a matter of time.[8,10] Accidental foreign body ingestion is common in extreme of age groups i.e. children and old age. The reason is that children put everything in their mouth while edentulous old patients swallow edible objects without chewing them properly, large bolus thus gets stuck. Also wearing artificial dentures, especially the full upper denture, can obliterate tactile sensation in the roof of the mouth so that bones and other sharp objects are not detected until they have reached oropharynx.[11,22] In this study the most commonly affected age group was 1 to 10 years. Similar high prevalence of foreign body ingestion has also been reported both in local and international literature as well.[12-14] On the other hand in the study by Nadeen

Table 4: Site of impaction of foreign bodies in esophagus.

Site of impaction	No. of patients	Percent-age
Cervical esophagus	98	63.22%
Mid-esophagus	36	23.23%
Distal end	21	13.55%
Total	155	100%

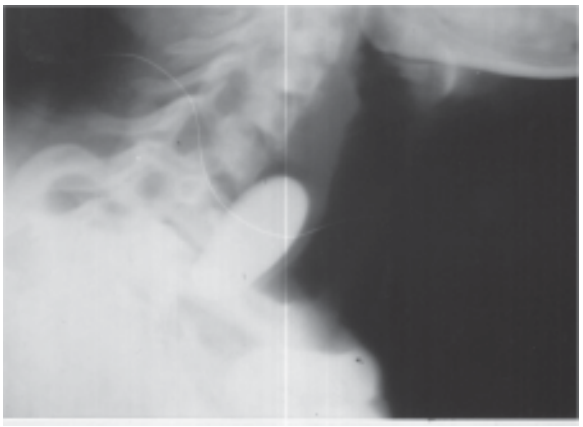

Fig. 1: X-ray Neck lateral view showing F.B Stone upper end of esophagus.

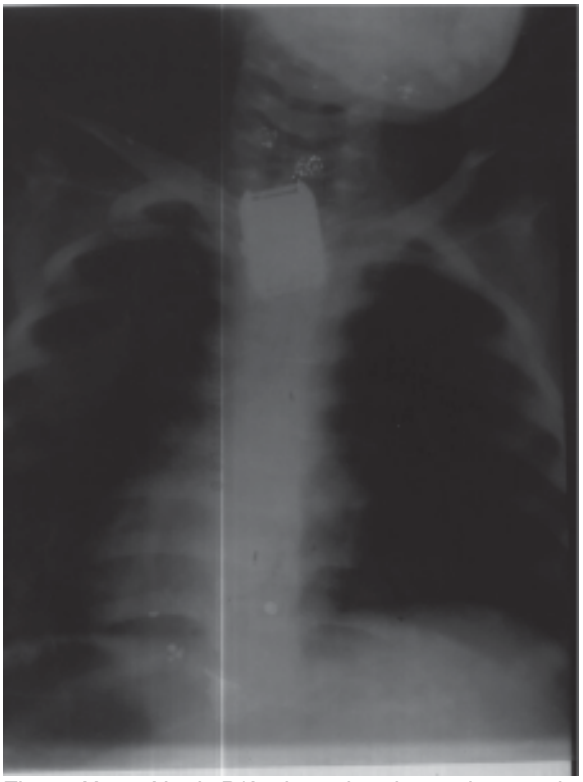

Fig. 2: X-ray Neck P/A view showing wrist watch, upper end of esophagus

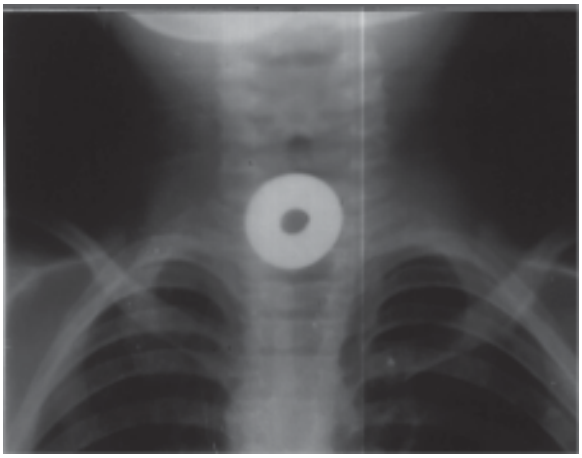

Fig. 3: X-ray Neck posterior-anterior view showing metallic F.B, upper end of oesophagus

et al, the commonly affected age group was 61-70 years.[15] All the above studies also had male preponderance like our study. The probable reasons were a more jerky motion in males, their eating habits, and taking bigger food pieces morsels.[21] But a study from Iran has reported an equal distribution between the two sexes.[21]

In this study dysphagia was the most common presenting symptom followed by odynophagia and drooling of saliva after ingestion of esophageal FBs. Similar results are also reported in another local study by Ahmed et al, as well.[16] Foreign bodies just inferior to the crico-pharyngeus muscle, produce dysphagia and pain in the supra-sternal area during swallowing.[17]

Commonest esophageal foreign body found to be coin in this study, which is in line with local and world literature.[12,18] All smooth FBs such as coins require urgent removal, as coins may become sagitally oriented and can encroach on the trachea, causing biphasic stridor.[25] Other studies in different countries have shown that the most common foreign bodies are big food pieces.[19,20] On the other hand, fish bone has been reported to be the commonest FB in a local study.[17] This difference could be due to the careless eating habits and combined meat bone cooking styles. Another reason may be the cooking of rice with meat which is then served together.

Foreign bodies were most commonly identified in the cervical esophagus usually immediately below the crico-pharynx followed by lodgment in the mid-esophagus and distal end. Similarly other studies have also revealed that the most common place for foreign body was the upper part of esophagus.[21,22] In children, the foreign body is usually impacted in the upper esophagus at the level of the cricopharyngeus muscle, which is the narrowest part of the esophagus, while in adults it is usually impacted in the lower third of the esophagus.[24]

We found no major morbidity or mortality in our series. These findings are in line with those of Hussain et al[12] and Ekem.[22] Contrary to these results, another local study has reported a morbidity and mortality rates of 4.5% and 1.5% respectively.[15] Esophageal FBs have a greater complication rate when the diagnosis is delayed. The relative risk for complications has been found to be greater than 1% when the duration of lodgment is longer than 24 hours and increases to 6.83% for duration of lodgment longer than 72 hours. In case of sharp objects like bone and dentures the complications will be magnified.[23]

We noted 85.7% success rate in our series, where as 14.3% FBs were pushed down into the stomach. Almost similar results are also reported in another local study as well.[12] We removed few interesting FBs like a wrist watch, a full upper denture with a metallic hook and a large marble stone stucked in the upper end of esophagus. We removed all of them uneventfully.

CONCLUSION

Rigid esophagoscopy is still useful and relatively safe procedure in management of accidental esophageal foreign bodies.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
GRANT SUPPORT AND FINANCIAL DISCLOSURE
None declared.