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Evaluation of Efficacy of Conservative Management in The Treatment of Impacted Esophageal Food Bolus

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ABSTRACT

Introduction: Acute food bolus obstruction in esophagus is common emergency in otorhinolaryngology. It is a distressing condition and most patient present with complaint of dysphagia. Various methods are used to remove the impacted esophageal food bolus. Conservative management is safe and effective method of treating such cases. **Objective:** We determine the frequency of patients passing the impacted esophageal food bolus spontaneously by conservative management. **Study period:** Duration of study was six months from 1-10-2010 to 30-03-2011. **Sample size:** Sample size was calculated by using WHO sample size calculator taking level of significance 95% and P value 68% and margin of error 10%. The sample was 85. **Study design:** Descriptive case series. **Sampling technique:** Non-probability consecutive sampling. **Methodology:** We admitted in our department, all the patients presenting with esophageal food bolus obstruction, fulfilling the inclusion criteria. We confirm the diagnosis by asking the patient about their feeling of obstruction and giving them a glass of water to drink. Then all the patients were given conservative management for 24 hrs. Within 24 hrs, all those patients who felt that their food bolus has passed and were able to drink a glass of water easily, were considered as successful cases. **Results:** 67 patients out of 85 (78.8) % passed their impacted esophageal food bolus spontaneously by conservative management.49 / 85 patients were male while 39/85 were females. The age range in the patients was 17 to 81 years. **Conclusion:** The conservative management is safe, cost effective and effective method in managing the patients presenting with esophageal food bolus obstruction.

Keywords: esophagus, food bolus obstruction, conservative management

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INTRODUCTION

Acute Foreign body obstruction is a common emergency in otolaryngology.[1] One third of foreign bodies retained in gastrointestinal (GI) tract are present in esophagus.[2] Obstruction tends to occur at three areas of physiological narrowing. The first and most common is at the junction of striated and smooth muscles, just below the cricopharyngeus muscle. The next level is where aortic arch crosses the esophagus while third level is lower esophageal sphincter.[1] The most common foreign body in esophagus in children is coin while in adults it is food bolus with meat being the most common food stuff encountered.[1,3,4,5] Presence of foreign body in esophagus could result in perforation of esophagus.[2]

Esophageal food impaction is a distressing condition6 and most of these patients present with the complaint of dysphagia.[4,7] Many of them have underlying esophageal pathology.[4] The prevalence of dysphagia, (which is the most common symptom in esophageal food impaction)[4,7] was found to be 5% of all ENT cases, in a study conducted in a tertiary care hospital at Peshawar.[8]

Various methods are used to remove the impacted food bolus which include the use of Maloney dilator and nasogastric tube, esophagoscopy, push technique, pharmacological therapy e.g. hyoscine.[1,2,7,9,10] Rigid esophagoscopy is the most commonly used method but it requires general anesthesia and also carries the significant risk of perforation of esophagus.[1,2,11] Many clinicians do not proceed to esophagoscopy first. Conservative management consisting of observation and i/v hyoscine, for 24 hrs to induce spontaneous passage of impacted food bolus is a common practice.[1,10] The success rate of conservative management varies between 68% to 82% in previous studies.[9,10] But these studies are unable to answer the question about approximate time taken for spontaneous passage of impacted food bolus and proportion of cases needing esophagoscopy.[10]

Only a few studies on conservative management of impacted esophageal food bolus has been conducted internationally with variable results but no such study has been done in Pakistan and other neighbouring countries. The success of my study, based on its results, will not only save the patients from undergoing unnecessary general anesthesia and esophagoscopy but will also lessen the burden on our operation theatres.

Objectives/Aims of Study

We determined the frequency of patients passing the impacted esophageal food bolus spontaneously by conservative management of 24 hrs

METHODOLOGY

Study Design: Cross-sectional study.

Place of Study: Department of ENT, Allied Hospital Faisalabad
Duration of Study: 6 months 1-12-2010 to 31-05-2011.
Sample Technique: Non – probability consecutive.
Sample Size: 85 (By using WHO sample size calculator).
Inclusion Criteria: 1) The patients having history of impacted esophageal food bolus, 2) All the patients above 16 years of age 3) Patients of both gender, male and female were included 4) The patients having first episode of food bolus impaction. 5) Patients having history of food bolus impaction less than 24 hrs.
Exclusion Criteria: 1) The patients having history of ingestion of other types of foreign bodies rather than food bolus 2) The patients having history of progressive dysphagia and recurrent food bolus impaction.

The study was approved by the hospital ethical committee. The patients meeting the inclusion criteria were taken from ENT department, presenting through accident and emergency department of hospital. The patients were admitted in hospital. Name, age, gender and address of the patients were documented. The procedure and possible outcome was explained and informed consent was taken from patients. The history, clinical examination relevant to study was done. History and clinical examination was done by the researcher himself. The history about the type of food bolus, duration of impaction and any previous such episode and history of progressive dysphagia was taken. In clinical examination, we asked the patient to drink a glass of water and saw the ability of the patient to drink it or not. The history of food bolus impaction and inability of patient to drink a glass of water confirmed the diagnosis. After confirmation, the conservative management, consisting of observation, i/v hyoscine 20 mg 8 hourly and i/v fluids according to their requirement, for 24 hrs, was started. The patients were advised to inform the researcher as soon as they felt that impacted food bolus had passed. At that time, the patient was given a glass of water to drink and ability of patient to drink it, was noted. The patient's feeling that food bolus had passed and his or her ability to drink a glass of water easily within 24 hrs of start of conservative management was considered as spontaneous passage of impacted food bolus and success of conservative management. While those patients who felt that their impacted food bolus has not passed and remained unable to drink a glass of water easily after 24 hrs of conservative management, were considered unsuccessful cases and candidates for esophagoscopy under general anesthesia. The time taken for spontaneous passage of impacted food bolus was also noted for each patient inclusive in study. The whole procedure was monitored and information was recorded on a specially designed performa by researcher himself. Data was entered and analyzed on SPSS V-10. Descriptive statistics were calculated for all variables. Mean and standard deviation were calculated for all quantitative variables like age and duration of passage of obstructed food bolus. Frequency and percentage were calculated for all qualitative variables like gender and success of treatment. All the data has been presented in the form of tables.

RESULTS

Sample size of patients for study was 85. All of the patients were given conservative management for 24 hrs and were assessed after 24 hrs whether they had passed the impacted esophageal food bolus or not. Mean and standard deviation for age was 45.49 ±18.52(table 1) Mean and standard deviation for duration of food bolus impaction was 8.89 ± 3.31. (Table 1) Mean and standard deviation for duration of passage of impacted esophageal food bolus was 16.13 ± 3.27. (Table 1)48 (56.5 %) patients were male while females were 37(43.5%) of the total 85 patients (table 2) After 24 hrs of conservative management 67/85 (78.8%) patients felt that their food bolus has passed while 18/85 (21.2%) felt that their food bolus has not passed. (Table 3) For further confirmation all the patients were given a glass of water to drink in the front of researcher.71/85 (83.5%) were able to drink a glass of water easily while 14/85 (16.5%) were unable to drink a glass of water easily. (Table 4) so on the basis of above mentioned data, there were 67/85 (78.8%) patients who were feeling that their impacted food bolus has passed and were also able to drink a glass of water easily after 24 hrs of conservative management. So, they were labeled as successful cases. There were 18/85 (21.2%) patients in which the conservative management was failed to pass the impacted esophageal food bolus and were labeled as unsuccessful cases and referred for esophagoscopy (Table 5)

Table 1: Age, duration of food bolus impaction and duration of passage of impacted food bolus

Variables	N	Minimum	Maximum	Mean	SD deviation
Age	85	17	81	45.49	18.52
Duration of food bolus impaction (in hrs)	85	3.00	19.00	8.89	3.31
Duration of passage of impacted food bolus (in hrs)	67	8.00	23.00	16.13	3.27

Table 2: Gender distribution

	Frequency	percent
Male	48	56.5
Female	37	43.5
Total	85	100.0

Table 3: patient feels that food bolus has passed

	Frequency	percent
Yes	67	78.8
No	18	21.2
Total	85	100.0

Table 4: patient able to drink a glass of water easily

	Frequency	percent
Yes	71	83.5
No	14	16.5
Total	85	100.0

Table 5: Success rate of the patients

	Frequency	percent
Yes	67	78.8
No	18	21.2
Total	85	100.0

DISCUSSION

Food bolus obstruction is one of the common emergencies the meat being the most common. It may cause symptoms such as diffuse chest pain or pressure, dysphagia, odynophagia, a sensation of choking, and neck or throat pain.[12] The most common site of impaction is in the cervical oesophagus.[13] In the past, all patients with food bolus obstruction would undergo rigid esophagoscopy under general anesthesia and this remains true for the patients with a sharp foreign body such as a fish bone, pins, needles. However, in a proportion of patients with a non-sharp food bolus it is known to eventually pass spontaneously. Uncertainty remains over how long to wait before taking a patient to theatre.[1] The American Society for Gastrointestinal Endoscopy recommends that food bolus obstruction can be safely managed conservatively within 24 hours after impaction.[10] Numerous techniques of inducing "spontaneous" resolution of the obstruction, without resorting to endoscopy, have been published in the literature. The concepts of conservative management are either to (1) dissolve the food bolus using enzymatic agents,[14] (2) dislodge food bolus with gas-forming agents or drinks[15] and (3) dislodging food bolus with spasmolytic agents, thinking acute spasm is the causative factor for obstruction.[16] Various pharmacological agents with variable success rates has been reported in the literature which includes papain, trypsin and chymotrypsin as enzymatic agents and diazepam, glucagon, nifidipine[17] and buscopan as spasmolytic agents.[1,9,10] Buscopan (hyoscine-N-bromide) is a smooth muscle relaxant regularly used in radiological and endoscopic procedures to temporarily abolish bowel peristalis[18] There are randomized controlled trials and good prospective case series studies showing their efficacy in relaxing the smooth muscles in the intestines.[19]

In the present work we have tried to find out the success rate of conservative management in treating the patient with esophageal food bolus impaction, presenting to ENT department, Allied Hospital Faisalabad. For this we admitted the patient in ENT department and put them on conservative management consisting of observation for 24 hrs, I/V hyosine administration. The success rate of my study was 78.8%.

Only a few studies have been done on this topic while no local study was found on this issue. The international studies have shown variable success rates of conservative management using I/V hyoscine. The study conducted by Basavaraj and Penumetcha has shown 68% success rate of conservative management of 24 hrs using I/V hyoscine10. Another study was conducted by Thomas and Webb. They have shown 82% success rate of conservative management using intravenous hyoscine.[9] So, the results of my study are very close to the that conducted by Thomas and Webb.

The most interesting outcome of this study was that a significant number of these patient symptoms resolved spontaneously without the need to be taken to theatre. Conservative management and a 24 hours observational period may minimize exposure to potential morbidity and reduce the inpatient stay.

A large number of people dealing with this disease are not well aware of the guidelines of treating such patients suffering from food bolus impaction. This is the reason that small number of patients were taken to the theatres at proper time i.e. within 12-hrs observation or they could not get any kind of medical treatment. Such patients are exposed to unnecessarily endoscopy and anesthesia related risks. Consequently, operation theatres and surgeons become unnecessarily overburdened. Spasm of the esophageal smooth muscle is one of the most common cause of this problem other than stricture and malignancy.[16] A large food bolus Hurriedly swallowed large food bolus may also cause impaction in a normal esophagus.

High group of such high-risk patients comprises of prisoners and mentally retarted individuals are high-risk groups.[20] The conservative treatment resolve this problem in majority of patients on conservative treatment. Rest of the sufferers will need endoscopy. Controversy exists in the use of rigid and flexible oesophagoscopes.[11,21] Nature of foreign body, level of impaction, available equipments and competency of the treating person are the primary factor in the choice of rigid or flexible endoscope. Many other conservative measures like dislodgment with different methods, Fizzy drinks,[15] nifedipine, and glucagon injection, [17] etc., are also frequently tried for this purpose. Unfortunately, they are not very well trusted. Risk of damage to the teeth, esophageal mucosal tear/perforation,[21] para retropharyngeal abcess, mediastinitis, pneumothorax and aorto-esophageal fistula are the frequently occurring complications of the surgical treatment. Some people are of the opinion that there are more hazards in delaying removal for the patients and more challenging for the surgeons adopting an out-of-hours intervention practice. Strong evidence was lacking in the literature to support need of any immediate surgical intervention. It is purposed that a proper protocol for the investigation and management should be adopted. A significant number of such sufferers, whether they resolved spontaneously or not, were having a predisposing pathological lesion on follow-up barium swallow. An x-ray barium swallow should be performed after the passage of the bolus.[22] There is increased risk of perforation if perforation persists after beyond 24 hours so conservative treatment should not be prolonged more than 24 hours.[10]

After 24 hours of conservative management, if a patient is drinking a glass of water but he or she is still having the feeling that they have something in their esophagus or they have persistent pain sensation in food passage or in neck or chest, should be referred for esophagoscopy to rule out some remaining part of food bolus e.g. piece of bone embedded in esophageal wall.

CONCLUSION

In this study we have assessed the efficacy of conservative management in the patients having impacted esophageal food bolus. After completion of study we have reached the conclusion that

1. Conservative management is an effective and safe method to dislodge the impacted esophageal food bolus.
2. A conservative management of 24 hours should be tried before going to esophagoscopy in all patients having first

episode of esophageal food bolus impaction.
3. Conservative management should not be continued beyond 24 hours for possible risk of perforation of esophagus
4. After 24 hours of conservative management, if a patient is drinking a glass of water but he or she is still having the feeling that they have something in their esophagus or they have persistent pain sensation in food passage or in neck or chest should be referred for esophagoscopy to rule out some remaining part of food bolus e.g. piece of bone embedded in esophageal wall.

REFERENCES

1. Price T, Jones SE, Montgomery PQ. Is current UK management of oesophageal food bolus obstruction evidence based? An e-mail survey and literature review. Eur Arch Otorhinolaryngol. 2007;264:329-35.
2. Weissberg D, Reafely Y. Foreign bodies in the esophagus. Ann Thorac Surg. 2007;84:1854-7.
3. Saki S, Nikakhlagh S, Safai F, Peyvasteh M. Esophageal foreign bodies in children. Pak J Med Sci. 2007;23:854-6.
4. Conway WC, Sugawa C, Ono H, Lucas CE. Upper GI foreign body: an adult urban emergency hospital experience. Surg Endosc. 2007;21:455-60.
5. Chen YH, Liao WC, Hou MC, Lin HC, Lee SD. Esophageal food impaction: a homemade suction tube attached to esophagogastroduodenoscopy for food bolus removal. J Chin Med Assoc. 2008;71:635-8.
6. Prasad GA, Reddy JG, Boyd- Enders FT, Schmoll JA, Lewis JT, Wongkeesong LM. Predictors of recurrent esophageal food impaction: a case control study. J Clin Gastroenterol. 2008;42:771-5.
7. Kerlin P, Jones D, Remedios M, Campbell C. Prevalence of eosinophilic esophagitis in adults with food bolus obstruction of the esophagus. J Clin Gastroenterol. 2007;41:356-61.
8. Ahmad N, Amir AH, Hussain I, Ghulam S. Annual prevalence of various diseases in hospitalized patients in a tertiary level teaching hospital at Peshawar. Pakistan J Med Res. 2004;43:166-71.
9. Thomas L, Webb C, Duvvi S, Jones T, Reddy KT. Is buscopan effective in meat bolus obstruction? Clin Otolaryngol. 2005;30:183-5.
10. Basavaraj S, Penumetcha KR, Cable HR, Umapathy N. Buscopan in esophageal food bolus: is it really effective? Eur Arch Otorhinolaryngol. 2005;262:524–7.
11. Gmeiner D, Von Rahden BH, Meco C, et al. Flexible versus rigid endoscopy for treatment of foreign body impaction in the esophagus. Surg Endosc. 2007;21:2026–9.
12. Larsen W. Embryonic folding. In: Sherman LS, Potter SS, Scott WJ, editors. Human Embryology, 3rd ed. Philadelphia: Churchill Livingstone, 2001:133–4.
13. Athanassiadi K, Gerazounis M, Metaxas E, Kalantzi N. Management of esophageal foreign bodies: a retrospective reviewof 400 cases. Eur J Cardiothorac Surg. 2002;21:653–6.
14. Glauser J, Lilja GP, Greenfeld B, Ruiz E. Intravenous glucagon in the management of esophageal food obstruction. JACEP. 1979;8:228–31.
15. Sarkar PK. The use of Coca-Cola in the management of bolus obstruction in benign esophageal stricture. Ann R Coll Surg Eng.1993;75:337.
16. Tibbling L, Stenquist M. Foreign bodies in the esophagus. A study of causative factors. Dysphagia. 1991;6:224–7.
17. Bell AF, Eibling DE. Nifedipine in the treatment of distal esophageal food impaction. Arch Otolaryngol Head Neck Surg. 1998;114:682–3.
18. Sissons GRJ, McQueenie A, Mantle M. The ocular effects of hyoscine-n-butylbromide (Buscopan) in radiological practice. Brit J Radiol. 1991;64:584–6.
19. Goei R, Kessels AH, Nix M. Randomized clinical trial on the use of antispasmodic drugs in barium enema: impact on radiological practice. Eur J Radiol. 2000;36:32–5.
20. Roark GD, Subramanyam K, Patteron M. Ingested foreign material in mentally disturbed patients. South Med J. 1983;76:1125–7.
21. Lam HCK, Woo JKS, Van Hasselt CA. Management of ingested foreign bodies: a retrospective review of 5,240 patients. J Laryngol Otol. 2001;115:954–7.
22. Jones NS, Lannigan FJ, Salama NY. Foreign bodies in the throat. Prospective study of 388 cases. J Laryngol Otol. 1991;105:104-8.

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