International Journal of Research in Medical Sciences
Chandial VS et al. Int J Res Med Sci. 2017 Sep;5(9):3935-3938
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20173957

Original Research Article

Profile of endoscopic removal of foreign bodies from upper gastrointestinal tract at a tertiary care hospital in North India

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Received: 06 July 2017
Accepted: 29 July 2017

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ABSTRACT

Background: Foreign body (FB) ingestion is a common clinical problem seen in medical practice. Its size can range from a pin head size to coin size. The aim of this study is to report the outcome of patients coming with FBs in their gastro intestinal tracts (GIT) using upper GI endoscopy (UGIE).
Methods: The records of all the patients who presented to the department of gastroenterology and who underwent UGIE between May 2015 to May 2017 were reviewed with details on age, sex, type of FBs and its anatomical location and outcome.
Results: A total of 31 patients with history of FB ingestion, were subjected to UGIE, over a period of 2 years. The patients were in the age group of 3 years to 100 years. The mean age was 51.27±20.63 years, with males constituting 74.19% of the patients. Most patients were in the age group of 41-60 years (41.9%) followed by 21-40 years age group (22.58%). The majority of FBs found were pieces of bone (n=9) and meat bolus (n=7), making 29.03% and 22.58% respectively. The other FBs included food bolus, coins, dentures, fruit seeds and round worm impaction.
Conclusions: It is recommended that all those patients with a history of FB ingestion should be evaluated and if it is located in the upper gastrointestinal tract, should be subjected to UGIE for endoscopic removal.

Keywords: Endoscopy, Foreign body, GIT

INTRODUCTION

FB ingestion is a common medical emergency seen in both children and adults. Children constitute predominantly 80% of the total ingestions. Most FB ingestion in children are accidental and are mostly nonfood objects like coins, marbles, buttons, safety pins, toys, magnets and batteries.[1] And remaining 20% of ingestions seen in adults, most are related to eating bone or meat bolus impaction, which are mostly related. Intentional or accidental true FB ingestion in adults occurs most commonly in psychiatric patients, patients with alcohol intoxication or drug abusers, edentulous adults etc.[2] Edentulous adults are also at a greater risk of ingesting FBs, including an obstructing food bolus or their dental prosthesis.[3] 70-80% FBs pass uneventfully through esophagus reaches stomach, and then they traverse entire GIT and are expelled spontaneously without any complication. Few may cause complications like obstruction, ulcers and perforation.

Approximately, 10-20% objects lodge in esophagus and require endoscopic procedures.[4-8] The symptoms, signs, and complications produced depend on the nature, size, location, and duration of the FB ingestion in the GIT.[9] Flexible endoscopes are mostly preferred over rigid ones. Flexible endoscopic removal has success rate of over 90% in upper GI FBs.

METHODS

The aim of this study is to describe the experience in 2 years period in dealing with FBs in upper GIT using endoscopic procedures and to know the age distribution and nature of FB impaction seen commonly. In this hospital based retrospective descriptive study, we evaluated FB ingestion cases who presented to the hospital in two years. Data were collected from the department records of tertiary care hospital government medical college, Jammu, which caters to the population of Jammu province, Jammu and Kashmir, India. The data were analyzed with the SPSS version 16 and expressed as a number and a percentage for qualitative variables and Mean±SD for quantitative variables. The study was approved by the college ethical committee.

RESULTS

A total of 31 patients presented with FB ingestion over a period of 2 years. The patients were in the age group of 3 years to 100 years. The mean age was 51.27±20.63 years out of which males constituted 74.19% of the patients. The age group distribution is shown in Table 1.

Table 1: Age wise distribution of study population.

Age group (years)	Male N (%)	Female N (%)	Total
0-20	2	0	2
21-40	5	2	7
41-60	10	3	13
61-80	4	2	6
81-100	2	1	3
Total	23	8	31

Most patients fell in the age group of 41-60 years (41.9%) followed by 21-40 years age group (22.58%). The majority of FBs found were pieces of bone (n=9) and meat bolus (n=7), making 29.03% and 22.58% respectively. The other foreign bodies included food bolus, coins, dentures, fruit seeds and round worm impaction as shown in Table 2.

Table 2: Different types of foreign bodies ingested in study population.

Name of foreign body	N (%)
Bone (chicken/fish)	9 (29.03%)
Meat bolus	6 (19.35%)
Food bolus	5 (16.12%)
Coin	2 (6.45%)
Denture	2 (6.45%)
Seed	2 (6.45%)
Button	2 (6.45%)
Round worm	2 (6.45%)
Tooth brush	1 (3.22%)
Total	31 (100%)

The most common lodgment sites were lower end of esophagus (32.25%) followed by upper end of esophagus (19.3%). The other lodgment sites were stomach, cricopharynx and duodenum. No complication after endoscopic removal of FB was such. In 5 patients, we had to advise for rigid esophagoscopy seen as the FBs were sharp edged or impacted in the esophagus and could not be retrieved by flexible UGIE.

Table 3: Frequency of different sites of foreign body lodgement.

Site	N (%)
Esophagus	26 (83.87%)
Inlet	3 (9.6%)
Upper	7 (22.58%)
Middle	6 (19.35%)
Lower	10 (32.25%)
Cricopharynx	1 (3.22%)
Stomach	3 (9.6%)
Duodenum	1 (3.22%)
Total	39 (100%)

DISCUSSION

Endoscopic removal of FBs is an indication of emergency upper GI endoscopy. Consequently, endoscopic societies have set guidelines for safe endoscopic removals, this includes expert endoscopists and well-equipped theatres.[10] In present study, we had a success rate of >90% in the removal of FBs by UGIE, which are like other studies.[11,12] The failure was not related to the procedure but most likely, because the FBs were sharp edged or impacted in the esophagus and could not be retrieved by flexible UGIE.

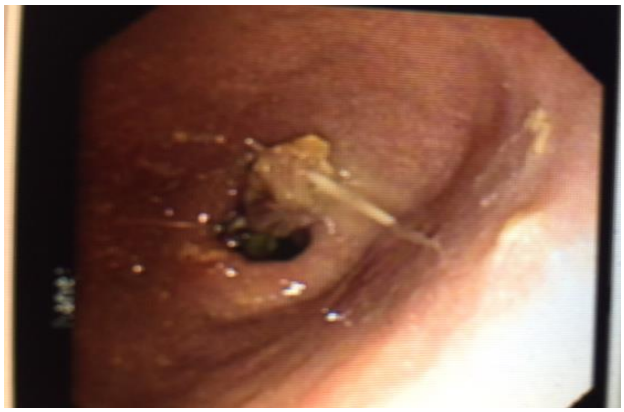

Figure 1: Endoscopic view of fish bone impacted at the pylorus.

FB ingestion can be seen in any age group, but mostly seen in children and older adults with psychiatric disorders. In present study, the most common age group was 41-60 years, the second most common age group was 21-40 years and the third was 61-80 years. The most common FB seen in present study was a piece of bone,

followed by meat bolus and food bolus. Furthermore, we had reported two cases in which round worm was seen obstructing the stomach. Sites of trapped FBs in the upper GI tract seemed to be related to many factors.[1] Anatomical: the narrowest areas were the commonest site of impaction.[2] Pathological: acquired stricture and underlying growth may lead to impaction.[3] Nature of FBs: sharp pins and worms enter the stomach easily, whereas coins and food bolus get impacted in the narrow ends easily.

Figure 2: Endoscopic view of tooth brush impacted in esophagus.

Figure 3: Image-endoscopic view of meat bolus impacted in the esophagus.

Figure 4: Endoscopic view of artificial denture in the esophagus.

In current study, piece of bone was the most common FB seen in 29% patients, followed by meat bolus in 19% and food bolus in 16% patients. Although current study has lesser number of patients and many studies on endoscopic management are well reported in literature, to the best of our knowledge, but this is the first study from a tertiary hospital in Jammu region, Jammu and Kashmir, India. Furthermore, we experienced more than 90% success rate in the retrieval of FBs.

CONCLUSION

It is recommended that all those patients with a history of FB ingestion should be evaluated and subjected to UGIE for endoscopic removal.

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: Chandial VS, Sharma R, amwal V, Kotwal SK. Profile of endoscopic removal of foreign bodies from upper gastrointestinal tract at a tertiary care hospital in North India. Int J Res Med Sci 2017;5:3935-8.