



Foreign Bodies Detected in the Upper Gastrointestinal Tract and Their Treatment

Üst Gastrointestinal Sistemde Saptanan Yabancı Cisimler ve Tedavisi

Suat Evirgen¹, Şirin Çetin²

¹Department of General Surgery, Sabuncuoğlu Şerefeddin Training and Research Hospital, Amasya University, Amasya, Türkiye

²Department of Biostatistics, Faculty of Medicine, Amasya University, Amasya, Türkiye

Abstract

Aim: This study aims to evaluate adult patients presenting to our emergency clinic with complaints of foreign body ingestion in the upper gastrointestinal system.

Material and Method: Retrospective data from 37 patients diagnosed with foreign bodies in the upper gastrointestinal system at Sabuncuoğlu Şerefeddin Research and Training Hospital between June 2022 and November 2023 were analyzed. Patients were assessed based on demographic characteristics, symptoms, types and locations of foreign bodies, treatment methods, and complications.

Results: The mean age of the patients was 62.7 years, with 45.9% being male and 54.1% female. The most common site of foreign body impaction was the upper esophageal sphincter (45.9%). The most frequently encountered foreign body types were food and meat (56.8%) and bones (21.6%). Endoscopic intervention successfully removed 70.3% of the foreign bodies, 13.5% were advanced into the stomach, and 16.2% were not detected. Complications included mucosal lacerations in 10 patients and perforations in 2 patients.

Conclusion: Early diagnosis and treatment of foreign bodies in the upper gastrointestinal system are critical for preventing severe complications. Flexible endoscopy is an effective and reliable method for managing such cases. Particularly in geriatric patients, education of patients and their caregivers is essential for preventing these incidents.

Keywords: Upper gastrointestinal system, foreign bodies, flexible endoscopy

Öz

Amaç: Bu çalışma, üst gastrointestinal sistemde yabancı cisim yutma şikayeti ile acil kliniğimize başvuran erişkin hastaların değerlendirilmesini amaçlamaktadır.

Gereç ve Yöntem: Sabuncuoğlu Şerefeddin Araştırma ve Uygulama Hastanesinde Haziran 2022 ile Kasım 2023 tarihleri arasında üst gastrointestinal sistemde yabancı cisim tanısı konulan 37 hastanın retrospektif verileri incelenmiştir. Hastalar demografik özellikler, semptomlar, yabancı cisim türü ve lokalizasyonu, uygulanan tedavi yöntemleri ve komplikasyonlar açısından değerlendirilmiştir.

Bulgular: Çalışmaya katılan hastaların yaş ortalaması 62,7 olup %45,9'u erkek ve %54,1'i kadındır. Yabancı cisimlerin en sık takıldığı bölge üst özofagus sfinkteri (%45,9) olarak belirlenmiştir. En sık rastlanan yabancı cisim türleri et ve gıda (%56,8) ile kemik (%21,6) olmuştur. Endoskopik müdahale ile yabancı cisimlerin %70,3'ü çıkarılmış, %13,5'i mideye itilmiş ve %16,2'sinde yabancı cisim saptanmamıştır. Komplikasyon olarak 10 hastada laserasyon ve 2 hastada perforasyon gözlenmiştir.

Sonuç: Üst gastrointestinal sistemde yabancı cisimlerin erken tanı ve tedavisi, ciddi komplikasyonları önlemek açısından kritik öneme sahiptir. Fleksible endoskopi, bu tür olguların yönetiminde etkili ve güvenilir bir yöntemdir. Özellikle geriatric hastalarda hasta ve yakınlarının eğitimi bu tür durumların önlenmesinde önem taşımaktadır.

Anahtar Kelimeler: Üst gastrointestinal sistem, Yabancı cisim, Flexible endoskopi



INTRODUCTION

The presence of foreign bodies in the upper gastrointestinal (GI) system is more commonly observed in children, with coin ingestion being the most frequently encountered case. In adults, however, the most commonly swallowed foreign bodies are fish bones, which typically become lodged in the esophagus.^[1] Adult patients are predominantly male.^[2] In cases of foreign body ingestion, if there is complete esophageal obstruction or sharp-edged objects have been swallowed, therapeutic esophagogastroduodenoscopy is among the emergency treatment measures.^[3]

The presence of foreign bodies in the upper gastrointestinal (GI) system is a significant clinical issue that often requires urgent medical intervention. Due to its anatomical characteristics, the esophagus is one of the most common sites where foreign bodies become lodged, frequently leading to severe symptoms and complications. In such cases, symptoms such as dysphagia (difficulty swallowing), odynophagia (painful swallowing), and inability to swallow are commonly observed.^[4] More than 80% of foreign bodies are found in the esophagus.^[5]

The type of ingested foreign bodies varies depending on dietary habits and cultural characteristics of the population. While meat and food particles are among the most commonly encountered foreign bodies, hard materials such as bones can cause severe complications. Complications following foreign body ingestion include deep lacerations, ulcers, and perforations.^[6] Factors that increase the risk of complications include advanced age, sharp foreign bodies, and the presence of the foreign body for more than six hours.^[7] Endoscopic intervention successfully removes more than 90% of foreign bodies, with a low complication rate.^[8] However, conditions like perforation, if not treated appropriately, significantly increase the risk of mortality.^[9]

Radiological evaluation is recommended in cases involving radiopaque objects, while barium studies are not advised.^[10]

Most ingested foreign bodies pass through the esophagus and are expelled from the digestive system without complications. However, sharp and pointed objects significantly increase the risk of esophageal injury. Emergency endoscopy is required when the patient is unable to swallow secretions or when sharp objects are lodged in the esophagus. Endoscopic interventions are the most commonly used method for both diagnosis and treatment and generally have a high success rate.^[11] According to the ESGE guidelines, emergency endoscopic intervention is recommended to remove sharp or hazardous foreign bodies within six hours.

This study aims to evaluate adult patients presenting to our clinic with complaints of foreign body ingestion in the upper gastrointestinal system.

MATERIAL AND METHOD

The study was carried out with the permission of Amasya University Non-interventional Clinical Research Ethics Committee (Decision No: E-30640013-2024/178). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki.

The hospital records of 37 cases who presented to the emergency clinic of our hospital between June 2022 and November 2023 with a diagnosis of foreign body in the upper gastrointestinal system and underwent endoscopic examination were retrospectively reviewed. The cases were evaluated in terms of age, gender, symptoms, type of foreign body, localization of the foreign body, treatment method applied, and complications. All cases were managed using flexible endoscopy.

The data were obtained from the hospital's record system. Information regarding patients demographic characteristics, symptoms, type and location of the foreign body, treatment methods applied, and complications were extracted from patient files and endoscopy reports.

The data obtained in this study were analyzed using SPSS (Statistical Package for the Social Sciences) version 25.0 software. Continuous variables were expressed as mean \pm standard deviation, and categorical variables as frequencies and percentages. The chi-square test was used to evaluate differences between groups for categorical variables. For the analysis of continuous variables, the Shapiro-Wilk test was used to assess normality distribution; independent groups t-test was applied for normally distributed data, and the Mann-Whitney U test was used for non-normally distributed data. A p-value of <0.05 was considered statistically significant.

RESULTS

The mean age of the cases included in the study was 62.7 years (range: 20–93 years). Of the participants, 17 (45.9%) were male, and 20 (54.1%) were female. Nineteen patients were in the geriatric age group, with a mean age of 77.9 years for this subgroup.

The most commonly encountered type of foreign body was meat and food, identified in 21 patients (56.8%), followed by bones in 8 patients (21.6%). In one case, the patient had persistently ingested olive pits due to gastric complaints, which resulted in ulcers, obstruction, and vomiting in the duodenal bulb.

The most frequently reported symptoms among the patients were odynophagia (35.1%), dysphagia (29.7%), and inability to swallow (27%). The most common site of foreign body localization was the upper esophageal sphincter, which is the narrowest anatomical part of the esophagus (45.9%).

It was determined that foreign bodies were removed endoscopically in 26 patients (70.3%), advanced into the stomach in 5 patients (13.5%), and no foreign bodies were

detected in the upper gastrointestinal system in 6 patients (16.2%). Endoscopic examination of the esophagus revealed no mucosal damage in 25 patients (67.6%), while mucosal lacerations were observed in 10 patients (27%). Perforation was detected in 2 patients (5.4%) who had ingested bones; one of these patients presented to the hospital three days after the incident.

Endoscopic hemoclips were applied to 4 patients with esophageal lacerations. The 2 patients with perforations were treated medically with parenteral nutrition and antibiotic therapy. Malignancy was detected distal to the esophageal obstruction in 3 patients (8.1%). No complications or mortality were observed during the procedures in any of the patients.

Table 1. Demographic Data of Patients Presenting with Foreign Body Ingestion in the Upper Gastrointestinal System

	Number	Percent
Gender (M/F)	17 / 20	45.9% / 54.1%
Age	62.7	20-93
Symptoms		
Asymptomatic	2	5.4%
Difficulty swallowing	10	27%
Odynophagia	13	35.1%
Dysphagia	11	29.7%
Vomiting	1	2.7%
Foreign body		
Meat/food	21	56.8%
Bone	8	21.6%
Glass	2	5.4%
Fish bone	3	8.1%
Metal, other	3	8.1%
Foreign body lodgment location		
No foreign body observed	5	13.5%
Upper esophagus	17	45.9%
Middle esophagus	7	18.9%
Lower esophagus	6	16.2%
Stomach	1	2.7%
Duodenum	1	2.7%

Table 2. Endoscopic Findings

	Number	Percent
Foreign body lodgment location		
No foreign body observed	5	13.5%
Upper esophagus	17	45.9%
Middle esophagus	7	18.9%
Lower esophagus	6	16.2%
Stomach	1	2.7%
Duodenum	1	2.7%
No foreign body observed	6	16.2%
Foreign body removed	26	70.3%
Advanced to stomach	5	13.5%
Esophagus		
No damage	25	67.6%
Laceration	10	27%
Perforation	2	5.4%
Esophageal pathology		
Normal mucosa	34	91.9%
Malignancy	3	8.1%

DISCUSSION

The findings of this study demonstrate the critical importance of early diagnosis and treatment of foreign bodies in the upper gastrointestinal system in preventing serious complications. It is particularly evident that the geriatric

patient group has a higher risk of complications due to anatomical changes, reduced reflexes, and accompanying comorbidities. The prominence of geriatric patients in our study, with a high mean age of 77.9 years, underscores the need for more cautious interventions in this group.

As reported in the literature, sharp and pointed foreign bodies can cause serious complications, such as mucosal damage and perforation in the esophagus.^[4,12] Similarly, in our study, perforation was observed in two patients as a result of ingesting sharp materials. This supports the notion that complications are more frequently encountered in patients presenting late. Webb^[9] and Ginsberg's^[11] studies also highlight that delayed presentations increase the rates of complications, such as perforation and mucosal damage.

It is frequently noted in the literature that the majority of foreign bodies pass through the esophagus and are expelled from the digestive system without complications.^[12] However, in our study, foreign bodies were often observed to become lodged in anatomically narrow regions, such as the upper esophageal sphincter (45.9%). This finding underscores the importance of early endoscopic interventions. The ASGE guidelines for foreign body management state that removing foreign bodies within 24 hours reduces the risk of complications.^[4] The absence of mortality among the cases we managed highlights the importance of timely and effective intervention.

Endoscopic methods are considered one of the most effective and reliable approaches for treating foreign bodies in the upper gastrointestinal system.^[11] In our study, the success rate of interventions performed with flexible endoscopy was 70.3%, supporting the efficacy of this method. However, in some cases, foreign bodies were advanced into the stomach (13.5%), emphasizing the need for follow-up in these patients.

Finally, another noteworthy finding in our study was the malignancy rate of 8.1% among patients with a history of foreign body ingestion. This rate highlights the importance of investigating malignancy in patients with foreign body detection in the esophagus. Similarly, Eisen et al.^[12] suggested a potential association between foreign body detection and malignancy in their study.

Foreign body ingestion in the upper gastrointestinal system is a condition that requires prompt diagnosis and treatment. Sharp objects, such as fish bones, are the most common and often become lodged in the esophagus. Early endoscopic intervention is crucial to reduce the risk of complications. Factors such as age, sharpness of the object, and duration of ingestion can increase the risk of complications. Therefore, a swift and appropriate treatment plan should be developed for such cases.

In light of these findings, the application of early diagnosis, effective endoscopic intervention, and careful follow-up protocols in the management of foreign body ingestion cases is of great importance in reducing complication rates and improving patient outcomes.

CONCLUSION

Early diagnosis and treatment of foreign bodies in the upper gastrointestinal system are vital due to the potential for severe and life-threatening complications. Particularly in geriatric patients, informing and educating patients and their caregivers is important to reduce the occurrence of such emergencies, which may arise from dental, visual, or mental health problems. Flexible endoscopy is an effective and reliable method for the treatment of foreign bodies in the upper gastrointestinal system.

Geriatric patients and their caregivers should be provided with education on the precautions that need to be taken during meals to reduce the risk of foreign body ingestion. Specifically, the importance of carefully consuming hard, bony, or large-piece foods and emphasizing the chewing process should be highlighted.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was carried out with the permission of Amasya University Non-interventional Clinical Research Ethics Committee (Decision No: E-30640013-2024/178).

Informed Consent: Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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