



Endoscopic extirpation of a fork after three days; Case report and review of the literature

Remove of the fork by the endoscopically

Fevzi Cengiz, Salih Can Celik, Gulden Balli, Nihan Acar, Erdinc Kamer, Mehmet Hacıyanlı
General Surgery, Izmir Katip Celebi University Ataturk Training and Research Hospital, İzmir, Turkey

Abstract

An accidental ingestion of a foreign body is a common cause of presentation to the emergency department. While the majority of the ingested foreign bodies pass through the gastrointestinal tract without causing any sequels, long, rigid, and sharp objects can cause complications such as perforations or obstructions. Serious health problems such as substance dependence, schizophrenia, or anorexia should be questioned in these rarely observed cases. Such objects need to be removed surgically or endoscopically as soon as possible. Our paper presents the removal of an impacted table fork from the stomach by endoscopy under sedoanalgesia three days after the incident.

Keywords

Endoscopy; Endoscopic Foreign Bodies; Table Fork

DOI: 10.4328/JCAM.5790 Received: 26.02.2018 Accepted: 20.03.2018 Published Online: 21.03.2018 Printed: 01.09.2018 J Clin Anal Med 2018;9(5): 463-5
Corresponding Author: Fevzi Cengiz, Department of Surgery, Izmir Katip Celebi University Ataturk Training and Research Hospital, Izmir, 35360, Turkey.
T.: +90 2322444444 F.: +90 2322614444 E-Mail: drfevzi@gmail.com
ORCID ID: 0000-0002-1614-5568

Introduction

A foreign body in the digestive tract can be defined as an accidentally or deliberately swallowed material during intake of medicine or food. It is commonly observed in the emergency departments and in the pediatric age group [1]. While the majority of the swallowed foreign bodies pass through the gastrointestinal tract without causing any sequels, long, rigid, and sharp objects can cause complications such as perforations or obstructions [2]. The foreign bodies of this kind should be removed as soon as possible by endoscopy or surgical interventions. In adults, ingestion of foreign bodies is rarely observed and is accidental in most cases. However, it can be the end result of some contributing factors such as psychiatric disorders, mental retardation, alcohol consumption, and edentulousness [1]. In our paper, we present the removal of an impacted table fork from the stomach by endoscopy under sedoanalgesia three days after ingestion.

Case Report

A 41-year-old female patient presented to the emergency department with a complaint of an ingested table fork. The history of the patient provided the information that the ingestion occurred three days before, accidentally during an intentionally provoked attack of vomiting when the handle of the fork was used to induce vomiting. The patient's medical history did not contain any medical or surgical information. There were no histories of any psychiatric disorders, mental retardation, alcoholism, or substance dependence. The physical examination of the patient revealed normal findings. Laboratory tests results were as follows: Glucose 93 mg/dL, Hb 11.4 mm³, Hct 32, Wbc 7,000 mm³, amylase 124U/L. The characteristic presentation of the fork was observed both in the direct abdominal radiogram taken while the patient was in the standing position and in the abdominal computerized tomography, without any evidence of perforation (Figure 1A-1B). After collecting informed consent, the patient was taken to the surgical endoscopy unit, where local anesthesia was applied to the oropharynx and an endoscopic intervention was performed under sedoanalgesia. During the endoscopic intervention, it was observed that the handle of the fork was lodged in the pylorus while its points were hooked in the corpus of the stomach (Figure 2). The pointed ends of the fork became visible by expanding the stomach. Then, they were held by the snare, releasing the fork from the duodenum, and leaving it unhooked in the corpus of the stomach. However, it could not be removed directly via the cardia and esophagus as its pointed ends were facing upwards (Figure 3A). The fork was rotated upside down in the stomach by endoscopy, and then it was removed successfully by holding it from the handle with the snare (Figure 3B). The esophagus, stomach, and duodenum were checked for any injuries by the endoscopy and the procedure was terminated. The removed fork was 15 cm long. Following a 24-hour period of monitoring, the patient was discharged from the hospital without any complications and with full recovery.

Discussion

The European Society of Gastrointestinal Endoscopy (ESGE) and the American Society for Gastrointestinal Endoscopy

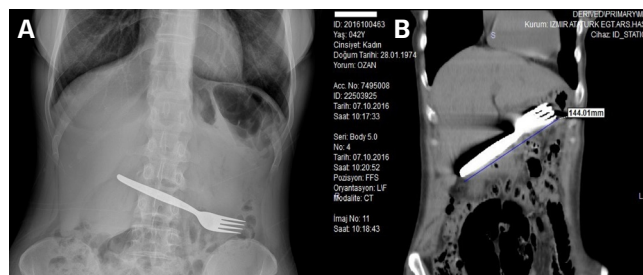


Figure 1. The radiologic imaging of the ingested table fork. Direct radiogram of the abdomen while the patient is in standing position (A), Computerized tomography of the abdomen (B).

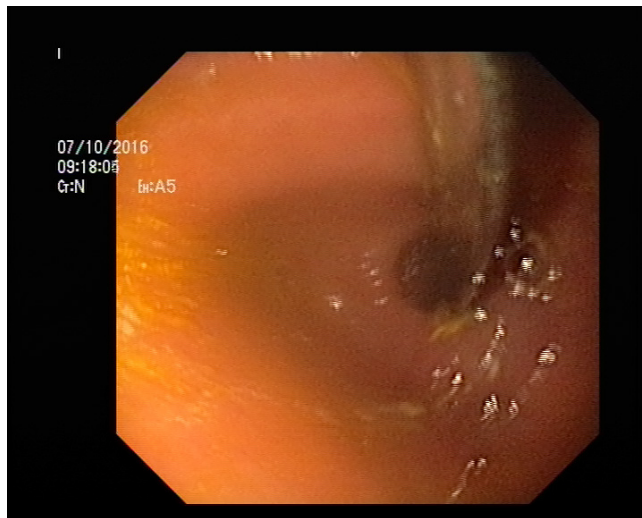


Figure 2. The table fork hooked in the duodenal C-loop and impacted in the corpus of the stomach.

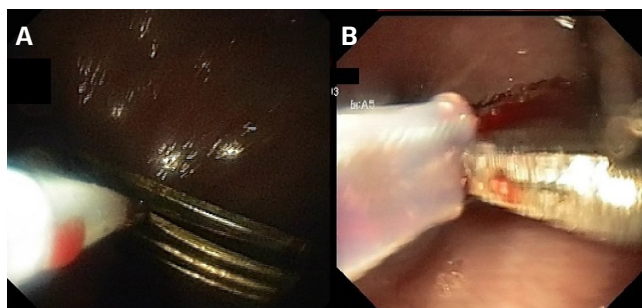


Figure 3. The released table fork is observed in the stomach. Prongs are observed facing upwards (A), After rotating the fork upside down, its handle is observed pointing upwards (B).

(ASGE) have classified cases of ingested foreign bodies as emergency, urgent, and nonurgent, based on the requirements for the management of foreign bodies and the timing of the endoscopic intervention [2,3]. Management of ingested foreign objects depends on factors including the structure of the object, its location, the factors associated with the patient, the clinical condition, and the time elapsed since the ingestion [3,4]. Also the duodenum, being fixed to the peritoneum and with its C-shaped structure, acts like a trap for long and pointed objects as in the case presented in this paper. While most ingested foreign bodies (80%-90%) are passed spontaneously, the remaining 10%-20% require endoscopic removal, and in less than 1% of the cases impactions, perforations, and obstructions require surgical interventions [2]. Inflammation, abscess formation, peritonitis, obstruction, fistulas, and bleeding may develop leading to mortality and morbidity [5]. In addition, migration of the foreign bodies to the neighboring organs can be observed infrequently [1].

The natural pass of long and pointed objects all the way through the gastrointestinal tract has a potential risk for complications as high as 35%. Therefore, in those cases, removal of the foreign body by endoscopic or surgical interventions will be needed under emergency conditions [2,3]. Because the foreign body in our presented case was longer than 5-6 cm and was pointed, it required an urgent intervention. According to the ESGE and ASGE guidelines, urgent interventions are recommended to be performed within 24 hours [2,3]. The patient in our case presented to the emergency department 72 hours after the ingestion. The fork was successfully removed in our case, which was non-standard because three days had elapsed since the ingestion and the fork was impacted in the duodenum. It is controversial in the literature whether the duration of the impaction is a risk factor. In the literature there are studies detecting no correlations between the duration of the impaction and the risk of complications [6]. But most of the studies reported, in accordance with the guidelines, that the endoscopic interventions for the ingested foreign bodies had a low rate of success if the object was sharp or if the intervention was performed later than 12 hours, and the duration of impaction increased the risk as well [5,7]. In our case, no complications developed and it was possible to remove the object by endoscopy although the duration of impaction was 72 hours.

Pointed objects might cause gastrointestinal system trauma immediately after the time of impaction. Secondly, a longer duration of impaction may increase the risk of developing complications. Third, the inappropriate interventions by patients may worsen the condition. For example, trying to remove a foreign object by bolus ingestion of food may worsen the gastrointestinal trauma [8]. Therefore it should be recognized that pointed objects, long foreign bodies, and the presence of complications are important risk factors for further complications [7].

It is clear that a pointed object cannot be pulled out by directly holding its pointed or sharp ends otherwise it will lead to the injuries in the gastrointestinal system. Removal of a long and sharp object from the stomach requires covering its sharp sides with a protective hood and the use of an overtube. Otherwise, the object must be removed from its blunt end [3]. Surgical interventions will be required when the endoscopic interventions are unsuccessful in removing long objects hooked in the duodenum [2].

In conclusion, foreign bodies in the gastrointestinal tract are observed rarely in adults, and among those cases, ingestion of long and pointed objects is encountered very infrequently. Urgent interventions are required considering the risk of complications. Although very rare, it should be kept in mind that long and pointed objects impacted in the duodenum for periods longer than 72 hours can be removed by endoscopy under anesthesia and sedoanalgesia uneventfully if no complications are present.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

Conflict of interest

None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.

References

1. Cengiz F, Erkan O, Baha Z, Nazif E, Mehmet Y. Endoscopic Removal of the Tooth Brush Which Was Impacted in Stomach: Case Report. *J Clin Anal Med.* 2013; 4(2): 172-4.
2. Birk M, Bauerfeind P, Deprez PH, Hafner M, Hartmann D, Hassan C, et al. Removal of foreign bodies in the upper gastrointestinal tract in adults: European society of gastrointestinal endoscopy (ESGE) clinical guideline. *Endoscopy.* 2016; 48(5): 489-96.
3. ASGE Standards of Practice Committee, Ikenberry SO, Jue TL, Anderson MA, Appalaneni V, Banerjee S, et al. Management of ingested foreign bodies and food impactions. *Gastrointest Endosc.* 2011; 73(6): 1085-91.
4. Harvey, M, CaveG, Prince G. Endoscopic Removal of an Inadvertently Swallowed Toothbrush in the Emergency Department. *Case Rep Emerg Med.* 2012; 2012:568163. DOI: 10.1155/2012/568163, 2012.
5. Hong KH, KimYJ, Kim JH, Chun SW, Kim HM, Cho JH. Risk factors for complications associated with upper gastrointestinal foreign bodies. *World J Gastroenterol.* 2015; 21(26): 8125-31.
6. Park JH, Park CH, Park JH, Lee SJ, Lee WS, Joo YE, et al. Review of 209 cases of foreign bodies in the upper gastrointestinal tract and clinical factors for successful endoscopic removal. *Korean J Gastroenterol* 2004; 43(4): 226-33.
7. Lee HJ, Kim HS, Jeon J, Park SH, Lim SU, Jun CH, et al. Endoscopic foreign body removal in the upper gastrointestinal tract: risk factors predicting conversion to surgery. *Surg Endosc.* 2016; 30(1): 106-13.
8. Geng C, Li X, Luo R, Cai L, Lei X, Wang C. Endoscopic management of foreign bodies in the upper gastrointestinal tract: a retrospective study of 1294 cases. *Scand J Gastroenterol.* 2017; 52(11): 1286-91.

How to cite this article:

Cengiz F, Celik SC, Balli G, Acar N, Kamer E, Hacıyanlı M. Endoscopic extirpation of a fork after three days; Case report and review of the literature. J Clin Anal Med 2018;9(5): 463-5.