



Ann Ital Chir, 2021; 10 - Oct. 25
pii: S2239253X21036835
Online Epub

A laparoscopic approach to gastric foreign bodies. A video case presentation

Hilmi Yazici, Ozan Baris Namdaroglu

Research and Treatment Hospital General Surgery Department, University of Health Sciences, Izmir Bozyaka, Turkey

A laparoscopic approach to gastric foreign bodies. A video case presentation

INTRODUCTION: Foreign body ingestions are one of the common reasons for Emergency Department applications. Although it is mostly seen in the pediatric age group, adult patients could be more complicated. The majority of swallowed foreign bodies could pass through the digestive system spontaneously. Only %1 of them needs surgical interventions. In this study, we present a case that swallowed his denture and needs surgical treatment.

CASE PRESENTATION: A 59-year-old male patient was admitted to Emergency Department for swallowing his dental prosthesis accidentally. He had the feeling of being stuck in his chest while swallowing, and there were no additional symptoms. On the chest x-ray, it was detected in the middle part of esophagus. Upper Gastrointestinal System Endoscopy was performed to remove it. Foreign body was detected in the stomach during the endoscopy. However, it was not suitable for endoscopic extraction. Surgery was performed, and the foreign body was removed from the stomach laparoscopically. The patient was discharged from the hospital uneventfully on the fifth day after surgery.

CONCLUSION: Although they have seemed in many cases, a small percentage of foreign body ingestions needs surgical treatment. Developments in recent years have increased the frequency of using minimally invasive techniques in emergency surgeries. Because of advantages such as fast recovery and small scars, laparoscopic surgery is recommended as an option that can be used safely in emergency cases.

KEY WORDS: Foreign Body, Gastric, Laparoscopy, Surgery

Introduction

Although it is mostly seen in the pediatric population, adult foreign body ingestions could lead to more serious consequences. Except for accidental swallows, it is mostly seen in prisoners and those who had psychiatric disorders¹ Most swallowed foreign bodies pass through the digestive system spontaneously. However, a small proportion of these patients (10-20%)⁴ require endoscopic intervention^{2,3}. Only about %1 of all cannot be removed endoscopically or causes complications such as perforation, obstruction, or bleeding, needs surgical interventions⁴. In recent years, with the increasing role of

laparoscopy in surgery, laparoscopic procedures can be used safely in emergency surgeries⁵. In this study, we presented a case that swallowed his denture accidentally and needed surgical exploration.

Case Report

A 59-year-old male patient was admitted to Emergency-Department after accidentally swallowing his dental prosthesis while having a meal. He had no comorbidities, and there was no history of abdominal surgery. He had no symptoms except the feeling of being stuck in the chest area while swallowing. His vital signs were stable, and there was no pathological finding in his physical examination. Laboratory values were normal. In the chest X-ray, sharp-edged, radiopaque foreign body was detected in the middle part of the esophagus (Fig. 1). Because of the risk of perforation, upper gastrointestinal endoscopy was performed to remove the foreign body. The dental prosthesis was migrated to the stomach dur-

Pervenuto in Redazione Maggio 2021. Accettato per la pubblicazione Settembre 2021

Correspondence to: Yazici, Altayçeşme mahallesi seri sokak 11b, Maltepe, Istanbul (e-mail: hilmiyazici@hotmail.com)

ing endoscopy (Fig. 2) and its removal failed due to its size and sharp-edges. Hence, an emergency laparoscopic surgery was planned. Thoraco-abdominal computerized tomography (CT) was performed. There was no free air or liquid collection in both mediastinum and abdominal cavities, and the foreign body was still in the stomach. The patient was carried to the operation room. After abdominal sterilization, four trocars were placed: one above the umbilicus for the laparoscopy (10 mm), two in the upper right abdominal quadrant (5 mm-12 mm), and one in the upper left abdominal quadrant (5 mm). The omentum majus was separated from the great curvature of the stomach from 6-7 cm proximal of the pylor about 10 cm to allow gastrotomy. The gastrotomy was performed on the greater curvature, and the foreign body was removed from the stomach (Fig. 3). Then it was extracted from the abdominal cavity with an endobag. Two 45-mm thick-tissue endoscopic-staples (Echelon Flex™ 60mm; Ethicon Endo-Surgery, Cincinnati, OH, USA) were used to close the gastrotomy area (Fig. 4).

A drain was placed through the lesser sac, and after irrigation, the operation was terminated. Enteral nutrition was started on the postoperative first day, and the patient was discharged from the hospital on the fifth day after surgery.

Discussion

Although it is mostly seen in the pediatric age group, foreign body ingestion in adults is a common reason for applying to the emergency services⁶. After admission, the treatment options should be determined according to the clinical condition of the patient and the ingested foreign body's kind. Dental prosthesis, fish, or meat bones may accidentally be swallowed, as well as various foreign bodies such as belts, knives, and stones were ingested by mentally retarded patients, psychiatric disorders, or prisoners⁷. Surgical treatment is performed for foreign bodies that are not appropriate for endoscopic removal, have a high risk of complications, or can not pass spontaneously⁸. In recent years, developments in laparoscopic surgery techniques have made it widely used in emergency surgical procedures. Various causes of the acute abdomen can be safely diagnosed and treated with the laparoscopic approach⁹. Rapid recovery and



Fig. 1: Esophageal Foreign Body in Chest X-Ray.



Fig. 2: Endoscopic Detection of Foreign Body in the Stomach.



Fig. 3: Laparoscopic Detection of Gastric Foreign Body.

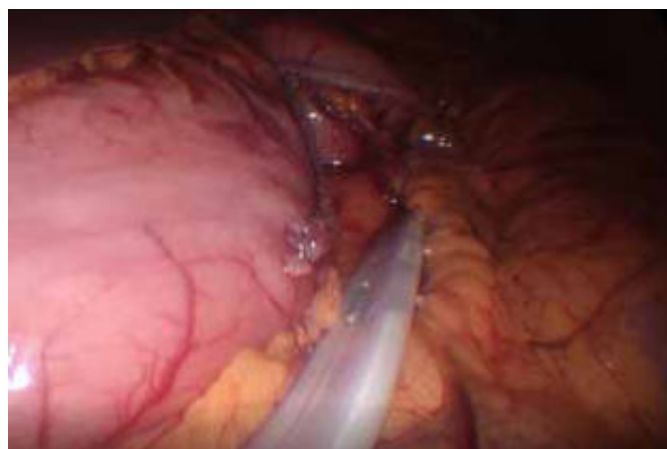


Fig. 4: Operation Ending After Closing Gastrotomy Incision.

early return to daily life in the postoperative period are the most important advantages compared to open surgery¹⁰. Therefore, laparoscopic surgery can be safely used as a minimally invasive method in patients who present with foreign body ingestion in cases which endoscopic methods are insufficient¹¹. Trocar locations, which are too important in laparoscopic surgeries, should be planned correctly in order to perform a fast and safe surgery.

Conclusion

Laparoscopic surgery could be performed safely for the removal of foreign body from stomach and upper gastrointestinal system. Detecting the exact localization of the foreign body and time of surgery are important parameters which determine mortality and morbidity.

Riassunto

L'ingestione di un corpo estraneo è uno dei motivi più comuni per far ricorso ad un Pronto Soccorso. Sebbene si verifichi principalmente nella fascia di età pediatrica, i pazienti adulti potrebbero presentare maggiori complicazioni. La maggior parte dei corpi estranei ingeriti potrebbe transitare spontaneamente attraverso tutto l'apparato digerente, e solo 1% dei casi necessita di un intervento chirurgico. In questo studio, presentiamo un caso di ingestione di una protesi dentale che ha richiesto un trattamento chirurgico.

Si tratta di un uomo di 59 anni, ricoverato al Pronto Soccorso per aver ingerito accidentalmente la sua protesi dentale. Aveva avuto la sensazione di un blocco dell'oggetto a livello toracico durante la deglutizione senza ulteriori sintomi. Alla radiografia del torace l'oggetto è stato rilevato a livello della parte centrale dell'esofago, e per rimuoverlo è stata eseguita un'endoscopia del sistema gastrointestinale superiore, rilevando però la presenza del corpo estraneo nello stomaco, dunque l'estrazione endoscopica non era più proponibile. Si è proceduto ad un intervento chirurgico e il corpo estraneo è stato rimosso dallo stomaco per via laparoscopica. Il paziente è stato dimesso dall'ospedale senza problemi il quinto giorno dopo l'intervento.

In conclusione, sebbene sembrerebbe che siano molti i casi, solo una piccola percentuale di ingestione di corpi estranei necessita di un trattamento chirurgico. Gli sviluppi negli ultimi anni hanno aumentato la frequenza dell'uso di tecniche minimamente invasive negli interventi di emergenza. Grazie ai vantaggi, come il rapido recupero postoperatorio e le piccole dimensioni delle cicatrici, la chirurgia laparoscopica è consigliata come opzione perché può essere utilizzata con sicurezza in casi di emergenza.

References

1. Ambe P, Weber SA, Schauer M, Knoefel WT: *Swallowed foreign bodies in adults*. Dtsch Arztebl Int, 2012; 109:869-75.
2. Birk M, Bauerfeind P, Deprez PH, Häfner 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; 48:489-96.
3. Ikenberry SO, Jue TL, Anderson MA, Appalaneni V, Banerjee S, Ben-Menachem T, et al.: *Management of ingested foreign bodies and food impactions*. Gastrointest, Endosc, 2011; 73:1085-91.
4. 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; 30:106-13.
5. Neugebauer EAM, Sauerland S: *Guidelines for emergency laparoscopy*. World J Emerg Surg, 2006; 1:1-2.
6. Pfau PR: *Removal and management of esophageal foreign bodies*. Tech Gastrointest Endosc [Internet]. Elsevier; 2014; 16:32-9. Available from: <http://dx.doi.org/10.1016/j.tgie.2013.10.004>
7. Zihni I, Karaköse O, Özçelik KÇ, Pülüt H, Duran A: *Foreign body in the stomach: Dentures*. Turkish J Surg, 2017; 33:222-23.
8. Velitchkov NG, Grigorov GI, Losanoff JE, Kjossev KT: *Ingested foreign bodies of the gastrointestinal tract: Retrospective analysis of 542 cases*. World J Surg, 1996; 20:1001-05.
9. Negroi I, Beuran M, Ciubotaru C, Cruceru A, Hostiuc S, Sartelli M, et al.: *The laparoscopic approach in emergency surgery: A review of the literature*. J Acute Dis, 2018; 7:15.
10. Pucher PH, Carter NC, Knight BC, Toh SKC, Tucker V, Mercer SJ: *Impact of laparoscopic approach in emergency major abdominal surgery: Single-centre analysis of 748 consecutive cases*. Ann R Coll Surg Engl, 2018; 100:279-84.
11. Alin-Cornel Fetti, Vlad R. Puia, Dana Monica Bartos, Adrian Bartos, Aida Puia, Nadim Al Hajjar: *A combined laparoscopic and endoscopic approach for the removal of a gastric foreign body*. Ann Ital Chir, Digital Edition, 2020; 9 - Epub, May 11