

## Case Report

# Missed diagnosis of an unusual case of impacted esophageal foreign body

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## Abstract

Accidental foreign body or food particle impaction in the esophagus causing partial or complete obstruction of the esophageal lumen is not uncommon. Most of this presents with remarkable history and acute or related symptoms that lead to diagnosis. Here, we present an unusual clinically misleading case of impacted food object in the esophageal lumen causing partial obstruction that mimic the diagnosis of esophageal and other associated pathologies.

## Key words

Esophageal foreign body, esophageal obstruction, esophageal ulceration, foreign body, impacted foreign body

## Introduction

Accidental foreign body (FB) impaction in the gastrointestinal tract (GIT) is an important cause of morbidity, especially in children and the elderly. The majority of swallowed FBs pass harmlessly and spontaneously through the GIT, apart from a history of FB ingestion. An impacted object occluding the upper GIT may lead to severe symptoms and even death. The diagnosis of an ingested FB is made primarily on the basis of the patient's medical history, presenting symptoms and investigations. Here, we present an elderly patient with a confusing history along with primary investigation findings that mislead the diagnosis.

## Case Report

We report a male patient of 88 years of age presented to the outpatient Department of Gastroenterology unit-I on 23<sup>rd</sup> April with the chief complaint of difficulty in swallowing,

diminished food intake, and pain in the mid chest and the upper abdomen for a period of 5 days. He also complained of fever for 3 days not exceeding 102°F. His detailed history showed that because of his senile physical changes he usually takes liquid or semisolid food slowly taking time, to eat. He had no teeth in the oral cavity, so he was unable to chew solid food. On 19<sup>th</sup> April, the patient first felt discomfort, then pain in the mid chest, and he was having difficulties in swallowing food. The discomfort and chest pain increased whenever he tried forceful swallow. Then he was taken to the local hospital, and an X-ray chest was done which revealed no abnormality. Electrocardiogram (ECG) in the local hospital excluded cardiac changes. Despite the treatment at the local hospital the patient was not able to eat properly, and the relatives notified a gradual decrease in the amount of food intake in the following days irrespective of the patient's forceful effort. On 21<sup>st</sup> April, the patient developed fever. Then he was referred to the 1<sup>st</sup> affiliated hospital of Jiamusi University. On examination, the patient was generally healthy with senile changes. The chest pain was localized over the sternum with no radiation and moderate in nature. He had a history of chronic obstructive pulmonary disease and alcohol use, but no history of smoking. He was nondiabetic and not hypertensive. On

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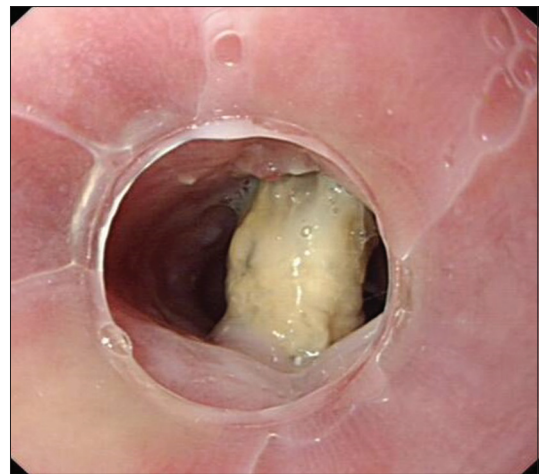
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palpation, his abdomen was soft with mild tenderness in the epigastrium and right hypochondriac region. Bowel movement was not regular (once in every 3–4 days). On auscultation bowel sound was notified, crepitations were detected in both lungs. His blood count showed mild neutrophilic leukocytosis. ECG was not significant. Along with other investigations a “Barium follow through” was advised. However, the patient regurgitated the contrast while swallowing during the preparation for Barium X-ray. Hence, a computed tomography (CT) chest and abdomen were done. The abdominal CT diagnosed cholecystitis; chest CT detected bilateral inflammation of lung parenchyma in the lower lobes and hypertrophy of the esophageal wall in the middle third. An antibiotic therapy and symptomatic treatment were prescribed along with the advice for a follow-up after 15 days. Following the treatment, the condition of the patient improved. Fever subsided and the pain was reduced. His food intake comparatively increased, but not up to the mark. The patient reported in the hospital on 14<sup>th</sup> May for the follow-up. As the patient was clinically stable, an endoscopic evaluation of upper GIT was performed. This revealed a partial obstruction caused by a FB [Figure 1] in the lumen of the esophagus, 25 cm from the incisor teeth with constriction of the esophageal segment. The endoscope could not pass through the obstruction, and the FB appeared tightly adherent to the right esophageal wall. A CT chest was also advised and revealed a hard foreign object impacted in the esophageal lumen along with the hypertrophy of the surrounding esophageal wall [Figures 2 and 3]. The patient was then prepared for an endoscopic removal. On the next day, under anesthesia with propofol sedation an endoscopic removal of the foreign object (date nut) of 1.5 cm × 1.0 cm was performed. A polypectomy snare was used to hook the object and then pull it off. After removal, a fresh ulcerated wound of approximately 1.2 cm × 0.6 cm appeared at the site, where the foreign object was partially embedded [Figure 4]. The ulcer was deep, muscular layer of the esophageal wall was exposed, and partially ulcerated. To prevent perforation and maintain hemostasis, the margin of the wound was sealed endoscopically with 16 metallic clips [Figure 5]. Then the wound was washed with normal saline and checked again for integrity and bleeding. Following removal of the obstruction, a complete esophagogastroduodenoscopy was performed, and no additional abnormality was detected. The patient was then kept under postprocedural observation with nothing by mouth for 72 h and proper supportive care. On the 4<sup>th</sup> postprocedural day, the patient was discharged with advice for endoscopic follow-up after 10 days. The follow-up revealed excellent healing of the esophageal wound and marked improvement of the patient’s status.

## Discussion

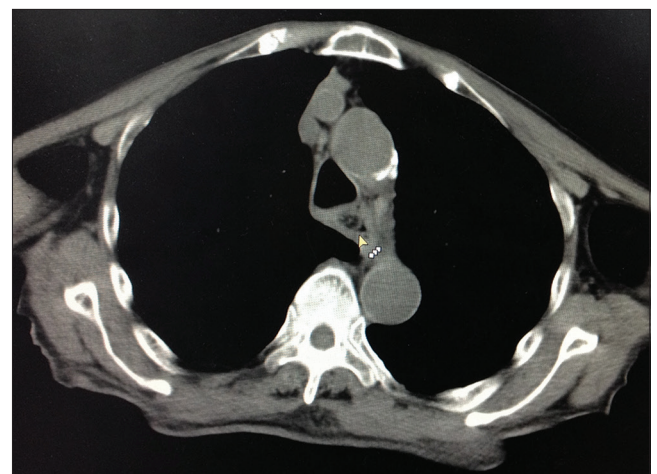
A FB in the upper GIT is an important cause of morbidity and a diagnostic challenge in the case of children and elderly. Impacted FBs in the upper GIT usually produce severe symptoms and complications, though this mostly depends



**Figure 1:** Impacted foreign body in the esophageal lumen (endoscopic view)



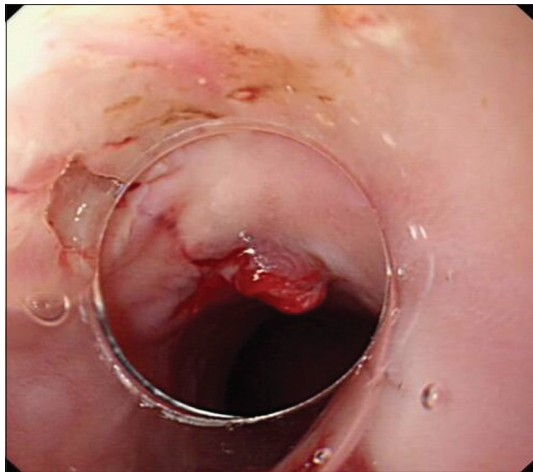
**Figure 2:** Computed tomography chest showing impacted foreign object (arrow head) in the esophageal lumen



**Figure 3:** Computed tomography chest showing obstruction (foreign object-arrow head) in the esophageal lumen with thickening of surrounding wall

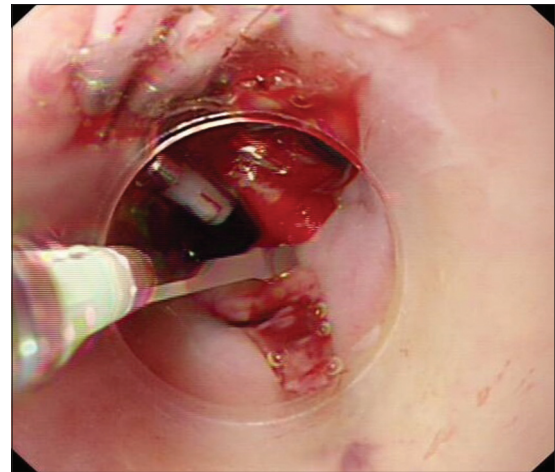
upon the nature, size, location, and time since lodgment of the object in the GIT. Complications such as mucosal ulceration,





**Figure 4:** Ulceration in the esophageal wall following endoscopic removal of the foreign body

esophageal obstruction, perforation, intrinsic stenosis, and esophageal diverticulum can occur by an impacted FB in the esophagus for a prolonged duration. FBs lodged in the pylorus or duodenum may lead to obstruction, perforation, and peritonitis.<sup>[1-4]</sup> Swallowing of FBs is most common in children aged between 6 months and 6 years.<sup>[5,6]</sup> The most commonly swallowed FBs by adults are: Fish bones (9–45%), bones (8–40%), and dentures (4–18%).<sup>[7-9]</sup> Usually, impactions in the esophagus are seen with the presence of preexisting pathologies such as Strictures (about 37%), malignancy (about 10%), esophageal rings (about 6%), and achalasia (about 2% of cases).<sup>[7]</sup> A suspected case of FB requires a detailed investigation of the patient's food history. However, there are cases like our patient who do not remember ingestion.<sup>[10,11]</sup> In such confusing situations, a CT is the most dependable method to identify an esophageal FB. With a sensitivity of 100% and a specificity of 91%, CT has an important role in the diagnostic evaluation of ingested FBs.<sup>[12]</sup> This is the most dependable method to acquire clinical information regarding; the depth of penetration, location of both ends of the FB, perforation, bleeding, and inflammation in the chest.<sup>[12-15]</sup> However, unfortunately in our patient the X-ray and first CT was unable to identify the presence of the FB, probably because of the primary density of the object. Ngan *et al.* showed a sensitivity of only 32% and a specificity of 91% for ingested fish bones in native X-ray films of 354 patients.<sup>[16]</sup> In our patient, the impacted FB was diagnosed (during follow-up visit) by esophagoscopy and then another CT evaluation was done to investigate the depth of penetration and to avoid a dangerous situation like vascular penetration. Obinata *et al.* reported a case of toothpick ingestion that led to gastroduodenal artery rupture after endoscopic removal.<sup>[17]</sup> FBs most commonly perforate the cervical esophagus, the second most common site for perforation is at the level of the aortic arch where there is scope for fatal or life threatening vascular and respiratory catastrophe.<sup>[18,19]</sup> To prevent complications and perforation, an esophageal FB impaction lasting 12–24 h should be



**Figure 5:** Application of metallic clip to close the wound after removal

prevented under all circumstances.<sup>[4]</sup> Therefore, an emergency esophagogastroduodenoscopy is indicated in occlusion of the esophagus, primarily on the basis of the patient's medical history, type of diagnostic evaluation, and the extent and urgency.<sup>[4,5,8,20,21]</sup>

## Conclusion

In our patient, the diagnosis was misled due to the unusual presentation, inappropriate food history delivered by the patient, and unfortunate radiolucency of the impacted object. Though associated clinical conditions, such as cholecystitis and pneumonitis also played a role. However, in view of our case, we came to the conclusion that a primary endoscopic evaluation should be performed in all circumstances where there is a susceptibility of esophageal obstruction either caused by FB or due to other esophageal pathologies.

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## Conflicts of interest

There are no conflicts of interest.

## References

1. Lin CH, Chen AC, Tsai JD, Wei SH, Hsueh KC, Lin WC. Endoscopic removal of foreign bodies in children. *Kaohsiung J Med Sci* 2007;23:447-52.
2. Loh KS, Tan LK, Smith JD, Yeoh KH, Dong F. Complications of foreign bodies in the esophagus. *Otolaryngol Head Neck Surg* 2000;123:613-6.
3. Xu L, Huang C, Qu C, Zhang Y, Zhou M, Chen Y. Easy and effective endoscopic retrieval of ingested sharp foreign bodies. *J Basic Appl Sci* 2013;9:87-90.
4. 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;73:1085-91.
5. Webb WA. Management of foreign bodies of the upper gastrointestinal tract: Update. *Gastrointest Endosc* 1995;41:39-51.

6. Cheng W, Tam PK. Foreign-body ingestion in children: Experience with 1,265 cases. *J Pediatr Surg* 1999;34:1472-6.
7. Sung SH, Jeon SW, Son HS, Kim SK, Jung MK, Cho CM, *et al.* Factors predictive of risk for complications in patients with oesophageal foreign bodies. *Dig Liver Dis* 2011;43:632-5.
8. Chiu YH, Hou SK, Chen SC, How CK, Lam C, Kao WF, *et al.* Diagnosis and endoscopic management of upper gastrointestinal foreign bodies. *Am J Med Sci* 2012;343:192-5.
9. Peng A, Li Y, Xiao Z, Wu W. Study of clinical treatment of esophageal foreign body-induced esophageal perforation with lethal complications. *Eur Arch Otorhinolaryngol* 2012;269:2027-36.
10. Cheung YC, Ng SH, Tan CF, Ng KK, Wan YL. Hepatic inflammatory mass secondary to toothpick perforation of the stomach: Triphasic CT appearances. *Clin Imaging* 2000;24:93-5.
11. Saccà N, Rodino' S, D'Amico T, Fragomeni A, Sebkova L, Giglio A. An unintentional ingestion of a toothpick: A case report. *Dig Liver Dis* 2005;37:983-4.
12. Marco De Lucas E, Sádaba P, Lastra García-Barón P, Ruiz-Delgado ML, González Sánchez F, Ortiz A, *et al.* Value of helical computed tomography in the management of upper esophageal foreign bodies. *Acta Radiol* 2004;45:369-74.
13. Matsubara M, Hirasaki S, Suzuki S. Gastric penetration by an ingested toothpick successfully managed with computed tomography and endoscopy. *Intern Med* 2007;46:971-4.
14. Young CA, Menias CO, Bhalla S, Prasad SR. CT features of esophageal emergencies. *Radiographics* 2008;28:1541-53.
15. Righini CA, Tea BZ, Reyt E, Chahine KA. Cervical cellulitis and mediastinitis following esophageal perforation: A case report. *World J Gastroenterol* 2008;14:1450-2.
16. Ngan JH, Fok PJ, Lai EC, Branicki FJ, Wong J. A prospective study on fish bone ingestion. Experience of 358 patients. *Ann Surg* 1990;211:459-62.
17. Obinata K, Takano Y, Otani T, Shimoyama M. A case of gastroduodenal artery rupture by a mistakenly swallowed toothpick. *JAEM* 2002;22:689-92.
18. Nandi P, Ong GB. Foreign body in the esophagus: Review of 2394 cases. *Br J Surg* 1978;65:5-9.
19. D'Costa H, Bailey F, McGavigan B, George G, Todd B. Perforation of the oesophagus and aorta after eating fish: An unusual cause of chest pain. *Emerg Med J* 2003;20:385-6.
20. Longstreth GF, Longstreth KJ, Yao JF. Esophageal food impaction: Epidemiology and therapy. A retrospective, observational study. *Gastrointest Endosc* 2001;53:193-8.
21. Ginsberg GG. Management of ingested foreign objects and food bolus impactions. *Gastrointest Endosc* 1995;41:33-8.