EXTRACTION OESOPHAGEAL FOREIGN BODY WITH RIGID ESOPHAGOSCOPY:

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ABSTRACT

Objective: Ingesting foreign objects can happen accidentally or on intentionally. Accidental foreign body (FB) ingestion happens in adults, most frequently in elderly edentulous, subjects with mental health disorders, or subjects who are intoxicated. Pediatric patients are the most frequently impacted patients. Endoscopic intervention is the safest and most efficient way for treating oesophageal foreign bodies, which make up one-third of foreign bodies retained in the gastrointestinal tract. In this study, we describe FB impaction by rigid endoscopy.
Background: A 28-year-old man who complained of having a lump in his throat was admitted to the hospital accompanied by other symptoms like a hot potato voice, a history of fever, drooling from the mouth, nausea, and vomiting. He is a construction worker and has no previous history of mental illness. The PA chest x-ray does not indicate any anomalies, but the neck soft tissue x-ray showed a large radiopaque shadow of an unknown object that was likely made of ceramics. The patient underwent an urgent rigid esophagoscopy under general anesthesia in the surgical room.
Result: The most frequently afflicted patient population is children, however unintentional FB ingestion can also happen in adults, most frequently in old people without teeth, people who have mental health disorders, people who are mentally retarded, or those who are drunk. The history and radiological findings are used to make the diagnosis. The most typical symptoms are dysphagia or a feeling of a foreign body. The first course of action when a radio-opaque item is suspected is often routine x-rays. Otolaryngologists have usually employed rigid endoscopy while under general anesthesia to remove sharp-pointed objects from the oesophagus.
Conclusion: Oesophageal FB impaction is an emergency case that needs intervention under 24 hours to prevent complication. The first choice in the treatment of oesophageal FB is endoscopic intervention.

***Keyword*:** Oesophageal foreign bodies, Management, Rigid esophagoscopy

Introduction

Ingesting a foreign body (FB) has become a rather prevalent clinical problem, with thirteen cases per 100,000 persons, according to estimates. (Wu et al., 2021). In clinical practice, 4% of emergency endoscopies were performed due to foreign body impaction. (Patel & Sharma, 2021; Zhang 2022). The oesophagus contains one-third of all foreign bodies retained in the digestive system. (Ferrari et al., 2018). The most common patient population impacted by the unintentional or intentional ingesting of foreign bodies is children (Al-Faham & Al-Hakkak, 2020). (Long et al., 2019). Adults who are elderly, edentulous, suffering from psychiatric illnesses, having mental delays, or who are drunk are most likely to accidentally ingest FB (foreign body). (Aiolfi, 2018). The most frequent are oesophageal foreign bodies brought on by eating or food bolus impaction (Long et al., 2019). In adults, accidental FB ingestion occurs most commonly in elderly edentulous, subjects with psychiatric disorders, mental delay, or alcohol intoxication (Aiolfi, 2018). The upper esophageal tract, which is the smallest portion of the oesophagus, was where the majority of the FBs were found. Location, type, size, and sharpness of FBs are thought to be risk factors for perforation, the most severe consequence. Immediate extraction is typically done for therapeutic reasons, however, in patients with the underlying oesophageal disease, oesophageal blockage brought on by a foreign body can be a warning indication (Wu et al., 2021). Most of the time, ingested FBs move through the digestive tract easily and without complications, but 10% to 20% of instances are thought to need endoscopic or surgical treatment. Most FBs need to be removed endoscopically using rigid esophagoscopy (Patel & Sharma, 2021). In this study, we describe FB impaction by rigid endoscopy. Endoscopy for FB extraction is done under general anesthesia.

Case Presentation

A referral from Sukabumi General Hospital sent a 28-year-old male patient to Hasan Sadikin Hospital complaining of a lump in his throat two days prior. The patient does not remember the process because he admits to being unconscious, when awake he complains of a lump in the throat. Currently, he is unable to eat and only drinks a little water. The complaint of a lump in the throat accompanied by a hot potato voice, a history of fever, drooling, nausea, and vomiting. There is no hoarse voice. The patient was taken to the Sukabumi Hospital Emergency Room, then referred to RSHS. History of systemic disease and drug allergies were denied. He works as a construction worker. History of mental illness was denied. During the physical examination, a vital sign was normal.
General examination and ear nose and throat physical examination found nothing abnormal. PA chest x-ray no bronchopneumonia/pneumonia, pulmonary atelectasis, and cardiomegaly. He was performed a neck soft tissue radiograph, which showed that the air column in the larynx and pharynx was still open and there was a substantial radiopaque shadow in the shape of a foreign body in the hypopharynx region. The diagnosis for the patient was an oesophageal foreign body. The foreign body had a shape similar to ceramics in the hypopharynx region with an oropharyngeal dysphagia phase. The patient was fasted and planned for extraction and exploration of the corpus alienum via rigid esophagoscopy with general anesthetic in the surgery room. After the operation was found a foreign body (ceramics size 3x4x4 cm) was in the oropharynx 19 cm from the

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incisive with oesophageal abscess. No lacerations and bleeding. The post-operation nonpharmacological therapy plan is given a liquid diet food with NGT and pharmacological therapy is given intravenous Levofloxacin, Metronidazole, Ketorolac, and Methylprednisolone.

Figure 1. Pre-operative neck soft tissue x-ray

Figure 2. Endoscopic findings

Figure 3. Post-extraction findings

Discussion

A FB was defined as a foreign body or food that was accidentally or deliberately swallowed into the gastrointestinal tract accidentally or deliberately and failed to pass naturally or with induced vomiting, requiring surgery or endoscopy (Wu *et al*., 2021).

The digestive tract's most frequent location for an acute foreign body or food impaction is the oesophagus (Schaefer & Trocinski, 2022). In adults, the oesophagus measures 20 to 25 cm in length and connects the hypopharynx to the stomach. The oesophagus has an inner mucosa layer as well as an outer longitudinal muscle layer and inner circular muscles. While the lower third's muscles are involuntary smooth muscles, the upper third is made up of voluntary striated muscles that allow swallowing to begin (Schaefer & Trocinski, 2022). Due to underlying oesophageal disease, foreign body blockage and food bolus impaction frequently happen at sites of constriction. (Long *et* al., 2019).

The most typical symptoms, such as a feeling of a foreign body or difficulty swallowing, are used to make the diagnosis based on the history and examination (dysphagia). Symptoms may appear minutes or hours later. The patient can pinpoint foreign bodies in the upper oesophagus more precisely. Impactions in the mid or lower oesophagus, however, could feel more like a general aching, discomfort, or chest pain. Hypersalivation, retrosternal fullness, regurgitation, gagging, choking, hiccups, and retching are other symptoms. Odynophagia, which is the term meaning painful swallowing, may be a sign of more serious issues such as an oesophageal laceration or perforation (Schaefer & Trocinski, 2022; Long *et* al., 2019).

Plain radiography is a part of first-line imaging, though it is not necessary when a suspected nonbony food bolus is present (Long et al., 2019). The first course of action when a radio-opaque object is suspected is typically routine x-rays. This will make it easier to identify the item, the location, and any potential issues. A neck x-ray may be required depending on the clinical presentation, but chest x-rays (posterior-anterior (PA) and lateral views) are typically sufficient. Regular x-rays may not reveal anything, but if there is still a strong suspicion of a foreign body, a diagnostic endoscopy or CT scan may be necessary. When there is a possibility of perforation or other issues, CT scans are helpful for recognizing them because of their great sensitivity to finding foreign bodies (Schaefer & Trocinski, 2022; Long et al., 2019). According to a meta-analysis study on oesophageal foreign bodies in adults, 38.1% of the 13,092 hospitalized patients had sharp-pointed object foreign bodies. (Aiolfi, 2018).

Most swallowed objects 80-90% can reach the stomach and eventually pass on their own without needing to be helped, with the exception of oesophageal foreign bodies and food bolus impaction, which normally pass on their own. Complete obstruction, on the other hand, can result in the inability to tolerate secretions, an airway compromise, and even death. (Schaefer & Trocinski, 2022; Long *et* al., 2019).

Because safe and successful, endoscopic management is the first option for treating oesophageal foreign bodies (Boo & Kim 2018). With a complication rate of less than 5%, this technique is successful in more than 90% of instances. There are three categories of endoscopic management: emergency, urgent, and non-urgent. The absolute indication for emergency endoscopic is an oesophageal obstruction that makes the patient unable to handle oral secretions. Sharp-pointed objects in the oesophagus also need emergency endoscopic removal of foreign bodies (Schaefer & Trocinski, 2022). The most popular therapeutic method was flexible endoscopy (FE), followed by rigid endoscopy (RE) (Aiolfi, 2018). Flexible endoscopy is a highly effective procedure that does not require general anesthesia, however, it is less effective when long or pointy items are lodged in the upper esophagus. The practice of rigid endoscopy under general anesthesia has been employed by otolaryngologists for years (Aiolfi, 2018). According to a recent meta-analysis comparing flexible and rigid endoscopy for the removal of upper oesophageal FB, both FE and RE were efficient and risk-free procedures with comparable success and total complication rates. (Aiolfi, 2018).

Successful conservative treatment of oesophageal mucosal injuries included nasogastric tube feeding and parenteral broad-spectrum intravenous antibiotics for the first 24 hours (Patel & Sharma, 2021).

The patient in the present case was a 28-year-old male constructor who was not mentally retarded. Unintentionally, He swallowed that almost triangle ceramic. It is extremely rare and

contrasts with earlier reports in which the majority of FBs in adults were food, bones, or dental issues. In line with earlier reports, the location, in this case, was in the upper oesophagus. Under general anesthesia, the patient had a rigid esophagoscopy emergency extraction attempt. The ceramics completely filled the lumen, pressed against the upper oesophageal wall with force, and were surrounded by oedematous, clogged mucosa and an oesophageal abscess

Conclusion

Oesophageal foreign body impaction is a situation that requires immediate attention in order to avoid complications. Endoscopic intervention is the primary line of treatment for oesophageal foreign bodies, with success and overall complication rates comparable between flexible and rigid endoscopy, unless the foreign body is large.

References

1. Aiolfi, A., Ferrari, D., Riva, C. G., Toti, F., Bonitta, G., & Bonavina, L. (2018). Esophageal foreign bodies in adults: systematic review of the literature. *Scandinavian Journal of Gastroenterology*, *53*(10–11), 1171–1178. https://doi.org/10.1080/00365521.2018.1526317
2. Al-Faham, F. S. M., & Al-Hakkak, S. M. M. (2020). The largest esophageal foreign body in adults: A case report. *Annals of Medicine and Surgery*, *54*, 82–84. https://doi.org/10.1016/j.amsu.2020.04.039
3. Boo, S. J., & Kim, H. U. (2018). Esophageal Foreign Body: Treatment and Complications. In *The Korean journal of gastroenterology = Taehan Sohwagi Hakhoe chi* (Vol. 72, Issue 1, pp. 1–5). https://doi.org/10.4166/kjg.2018.72.1.1
4. Ferrari, D., Aiolfi, A., Bonitta, G., Riva, C. G., Rausa, E., Siboni, S., Toti, F., & Bonavina, L. (2018). Flexible versus rigid endoscopy in the management of esophageal foreign body impaction: systematic review and meta-analysis. World journal of emergency surgery : WJES, 13, 42. https://doi.org/10.1186/s13017-018-0203-4
5. Long, B., Koyfman, A., & Gottlieb, M. (2019). Esophageal Foreign Bodies and Obstruction in the Emergency Department Setting: An Evidence-Based Review. *Journal of Emergency Medicine*, *56*(5), 499–511. https://doi.org/10.1016/j.jemermed.2019.01.025
6. Patel, N. R., & Sharma, P. (2021). Foreign Bodies in oesophagus: An Experience with Rigid Esophagoscope in ENT Practice. *International Journal of Head and Neck Surgery*, *12*(1), 1–5. https://doi.org/10.5005/jp-journals-10001-1401
7. Schaefer, T. J., & Trocinski, D. (2022). *Esophageal Foreign Body* (pp. 1–20). StatPearls Publishing LLC. https://www.ncbi.nlm.nih.gov/books/NBK482131/#_NBK482131_pubdet_
8. Wu L, Lei G, Liu Y, Wei Z, Yin Y, Li Y, Wang G. Retrospective Analysis of Esophageal Foreign Body Ingestion: Differences Among Weekday, Weekends, and Holidays. Risk Manag Healthc Policy. 2021;14:2499-2506
9. https://doi.org/10.2147/RMHP.S314069
10. Zhang, K. (2022). Historical Study Endoscopic Management of Esophageal Foreign Bodies: A Retrospective Study in China. *Japanese Journal of Gastroenterology and Hepatology*, *1*, 1–8.