

OESOPHAGEAL KOLA NUT IMPACTION IN A MIDDLE-AGED MAN: A CASE REPORT

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Abstract— Foreign body impaction in the oesophagus is a relatively common emergency. The most frequently implicated objects include dentures, fish bone and metallic objects and are usually accidental. Voluntary ingestion of whole Kola nut (*Cola nitida*) and its subsequent oesophageal impaction has rarely been reported by few authors. Oesophagoscopy remains the gold standard for the diagnosis and management of oesophageal foreign body impaction. Failed endoscopic retrieval is an indication for surgical intervention. Late presentation and delay in the removal of the impacted object is associated with the development of complications which can lead to significant morbidity and possible mortality. This case report highlights the rare occurrence of ingestion and subsequent impaction of kola nut in the oesophagus and the mortality that may be seen with delayed presentation and intervention.

Keywords: Foreign Body Impaction, Kola Nut, Oesophagus, Oesophagoscopy, Emergency.

Introduction

Foreign body impaction in the oesophagus is a relatively common emergency and are seen more commonly at the extreme of ages and among those with substance abuse and mental health disorders.[1] The anatomical sites of narrowing of the oesophagus are the points which impaction commonly occur, which are the postcricoid region, the level of the aortic arch, at the left bronchus and at the diaphragmatic hiatus.[1] The most frequently implicated objects include dentures, fish bone and metallic objects.[2]

Most incidents of foreign body impaction are usually accidental, however, there has been cases of voluntary ingestion of a foreign body with consequent oesophageal impaction; particularly in patients with mental health disorders, substance abusers, drug traffickers, prisoners and in patients who hope to achieve a secondary gain.[3] Voluntary ingestion of Kola nut (*Cola nitida*) and its subsequent oesophageal impaction has rarely been reported by few authors. [4,5]

Oesophagoscopy remains the gold standard for the diagnosis and management of oesophageal foreign body impaction with success rates greater than 95% and complication rates of 0%–5%.[1] There are different modalities and equipment types that can be used; ranging from flexible to rigid scopes which have their merits and demerits.[6,7] Flexible endoscopes are generally preferred partly because they can be used under local anaesthesia since rigid endoscopes would require general anaesthesia.[8]

The choice of the retrieval device to be used is primarily determined by the size, location, shape and nature of the foreign body. It is also determined by the type of endoscope and its instrument channel, and by the endoscopist's preference and experience.[1] Examples of retrieval devices include: standard biopsy forceps, retrieval forceps, retrieval graspers, multi-prong snares, polypectomy snares, endoscopic baskets, magnetic probes, retrieval nets or bags and balloon catheters.[7]

Most oesophageal foreign bodies (80%–90%) pass spontaneously but 10%–20% of cases will require endoscopic removal, while less than 1% will need surgery for foreign body extraction or to treat complications.[1,9,10]

I am reporting a case of a middle-aged man who voluntarily ingested whole Kola nut, for ritual purpose, which became impacted in the oesophagus. This report highlights the challenges of managing such cases in a resource poor environment.

Case Description

A 49-year-old male furniture maker, who presented at the emergency room with nine days history of difficulty with swallowing and retrosternal dull aching chest pain. The dysphagia which was of sudden onset was majorly to solids but was still able to tolerate sips of fluid initially but couldn't subsequently. The chest pain was described as central, dull aching, constant and located in the mid chest region. The onset of symptoms was preceded by ingestion of a whole big Kola nut which he took for the purpose of money ritual. He was told to swallow it by an herbalist who ordered that the kola nut must be swallowed as a whole without cutting it into pieces nor chewing it, and the herbalist also requested that the patient should retrieve the kola nut from his faeces intact upon defecation. It was to be returned back to the herbalist for further spiritual rites.

His past medical history was not significant. No past history of dysphagia or odynophagia, no history of ingestion of corrosives, no history of attempted suicide and no history of substance abuse. He had no history of psychiatric illness and no family history of mental health illness. He had two wives and seven children and was in the low socio-economic class with very low income. Had no external financial support and no health insurance coverage. On examination, he was conscious but weak and dehydrated. Respiratory rate was 22cycles/minutes with vesicular breath sounds, no added sounds, oxygen saturation was 96% in room air. His pulse was regular, normal volume with a rate of 96/minute and the blood pressure was 110/70 mmHg. Other examination findings were essentially normal.

He had a barium swallow done (Figure 1) which revealed the location of the kola nut as impacted in the distal oesophagus. Other baseline investigations were done, and all were within normal limits. He was initially reviewed by the Otorhinolaryngology (ENT) unit for a possible rigid oesophagoscopy but were not able to intervene due to the very distal location of the foreign body and he was subsequently referred to the Gastroenterology unit for endoscopic removal.

The patient was optimized and he subsequently had an emergency Oesophagoscopy done. 2% Xylocaine pharyngeal spray was administered to the patient and an antimotility agent, intravenous Hyosine Butyl Bromide 40mg stat, was also given before the commencement of the endoscopy procedure. There was close monitoring of the patient's SpO₂ and vital signs throughout the procedure by an endoscopy nurse.

An Olympus CV-170 series (Olympus America Incorporated) with a forward viewing flexible video Gastroscope was used for the procedure. Oesophagoscopy showed the foreign body (kola nut) impacted in the distal third of the oesophagus at about 38cm from the incisors tooth causing dilatation of the proximal oesophagus. and also showed presence of copious fluid and food debris collection proximal to the obstruction (Figures 2 and 3). There was surrounding oedema, hyperaemia and areas of erosions with exudative discharge from around the site of impaction. The foreign body (kola nut) was big, round and completely occluded the lumen of the oesophagus. The surface was slimy because of the pool of mucous/saliva collection in the oesophagus proximal to the obstruction. No endoscopic features to suggest a perforation or bleeding at the site of impaction.

A polypectomy snare, which was the only retrieval device available in our facility for such an object, was used for the retrieval with no success after several attempts (Figure 4). The foreign body (kola nut) could not be maneuvered out of its stuck position and it was also difficult to push it downwards

into the stomach. Following the failed attempt at endoscopic removal, he was referred to another hospital with facility for cardiothoracic surgical interventional procedures which was not available in our hospital. Patient however, did not present at the referral hospital due to financial constraint but went home instead and did not re-present at our facility. He was said to have developed complications at home after a few days and passed on.

Discussion

Cases of foreign body ingestion are relatively common, while most could pass spontaneously through the digestive tract and defaecated alongside with faeces, some could be arrested at different levels along the digestive tract and in many cases at the level of the oesophagus.[1] The different anatomical constrictions of the oesophagus makes it prone to impaction by foreign bodies. There are however different oesophageal pathologies that may predispose the oesophagus to impaction, these include achalasia, oesophagitis, Schatzki ring, oesophageal diverticulum, polyps, atresia, or stricture and hiatus hernia.[1] In this patient however, there was no identifiable oesophageal abnormality detected at barium enema and at endoscopy that could have been responsible for the impaction. The size of the ingested whole kola nut is the likely cause of the impaction in this patient; objects larger than 2cm in diameter cannot pass easily through the oesophagus.[1]

Various foreign objects ingested, either accidentally or voluntarily, have been documented in the literature to have become impacted in the oesophagus but that of kola nut is very rarely reported.[4,5] Voluntary foreign body ingestion is commonly seen in individuals with psychiatry illnesses, substance abusers, drug traffickers and prisoners.[3] The patient presented here had no history of psychiatric illness but ingested the foreign body (kola nut) for ritual purpose, which was also the reason given as reported by Akenroye *et al* [4] and Lawani *et al* [5] by their patients.

Akenroye *et al* [4] reported a case of oesophageal kola nut impaction in a young male Nigerian, used for ritual purpose; for a lady to fall in love with him. This was successfully removed through rigid oesophagoscopy. The patient presented within 24 hours following the sudden onset dysphagia he had developed after the ingestion of the kola nut. The nut was found in the oesophagus at 25cm position from the upper incisor teeth. The successful removal in that case could be due to the relatively early presentation of the patient and proximal location of the foreign body which was still within reach. The patient being reported here presented late (9 days post ingestion) and the kola nut was impacted at the distal end of the oesophagus making it difficult to be retrieved endoscopically. Studies have shown that long duration of impaction makes endoscopic removal difficult and longstanding impaction poses a potential risk of oesophageal perforation and other complications. [11,12]

Lawani *et al* [5] in Cotonou, Benin also reported a similar case of oesophageal kola nut impaction, in a young male, which was also used for ritual purpose. The kola nut was distally located in the oesophagus and attempts at endoscopic extraction failed which necessitated a Gastrostomy for its eventual removal. Patient however consequently developed a left oesophageal fistula.

The patient presented here had the classical symptoms of oesophageal obstruction; dysphagia, odynophagia and retrosternal chest pain following oesophageal impaction caused by the ingested whole kola nut. The diagnosis was evident on barium swallow and during endoscopy. His symptoms had been on for more than a week and was becoming unbearable before he eventually presented which was late. The reasons endoscopic retrieval failed in this case include the late presentation of the patient, the distal location of the impacted kola nut in the oesophagus and non-availability of options of suitable retrieval devices. The kola nut was big, round, slimy, completely occluded the entire lumen of the oesophagus and was already impacted for a long period; making it very difficult to be dislodged and properly grasped by the polypectomy snare device that was used. The snare had no room to

encapsulate the kola nut to establish a firm grip; a dormia basket if available would have been a suitable alternative.[13]

Flexible oesophagoscopy remains the first line option for the removal of a foreign body in the oesophagus.[14,15] Rigid oesophagoscopy is an alternative particularly when dealing with pointed or sharp objects.[6,7] It is important to have as many retrieval devices as possible available before the commencement of the endoscopic procedure, so that if one fails the other devices can be deployed depending on the nature of the foreign body. Surgery is the last option when endoscopic removal fails or when complications such as perforation had already set in. Surgical options include oesophagotomy and gastrostomy and the appropriate option depends on the location of the foreign body.[9,10]

The patient was referred to another health facility that has the resources and expertise for the surgical removal of the foreign body which was not available in our hospital, he however did not go but rather returned home. The reason for this was financial constraint which was also the reason that the patient gave for ingesting the kola nut in the first place; for money ritual. Another reason for choosing to return home may be due to the fact that he still believed he may eventually pass it out intact and complete the ritual process. He later developed complications that led to his death.

The possible complications of long-standing oesophageal foreign body impaction include trachea-oesophageal fistula, oesophageal tear or rupture, erosion of oesophageal wall into major blood vessels, oesophageal abscess, mediastinitis, pneumothorax, aspiration pneumonia and lung abscess.[11,12] The patient might have developed one or more of these serious complications resulting in his death. This might have been averted if he had complied early with the referral for surgical intervention.

Conclusion

Foreign body impaction in the oesophagus is a medical emergency requiring an emergency oesophagoscopy procedure for its removal. Delay in presentation and endoscopic removal is associated with the development of various complications which could increase the morbidity and mortality associated with this condition. Various endoscopic retrieval devices should be made available at endoscopic centres offering therapeutic interventions. Failed attempt at endoscopic removal is an indication for referral for surgical intervention.

Majority of cases of oesophageal foreign body ingestion are accidental but some are voluntary. Such patients should be evaluated for a possible underlying mental health disorder, substance abuse, drug trafficking and also questioned for possible indulgent in ritual practice; appropriate steps should thereafter be taken.

In this case however, in which the ritual was intended for monetary acquisition, re-orientation and economic empowerment of such patients is vital to prevent a recurrence. There is also a need by the government to make health insurance affordable and accessible to the less privileged in the society so that they can access health care services including emergency surgical procedures.

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5. References

- [1] 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: 1–8.
- [2] Triadafilopoulos G, Roorda A, Akiyama J. Update on foreign bodies in the esophagus: Diagnosis and management. *Curr Gastroenterol Rep.* 2013;15(4):1–6.
- [3] Nwosu J, Chime E, Okechi U. Oesophageal Foreign Bodies: Pattern and Management in a Tertiary Health Facility of a Developing Country. *J Adv Med Med Res.* 2018;27(4):1–8.
- [4] Akenroye M, Osukoya A. Uncommon, undeclared oesophageal foreign bodies. *Niger J Clin Pract.* 2012 ;15(2):244-246. doi: 10.4103/1119-3077.97339.
- [5] Lawani I, Gbéssi DG, Kpossou AR, Souaïbou YI, Gnanon FHR, Dossou FM, *et al.* Voluntary Ingestion of a Cola Nut Stuck into the Esophagus: An Unusual Foreign Body (FB). *Surg Sci.* 2016;07(05):239–243. doi.org/10.4236/ss.2016.75034.
- [6] Ferrari D, Aiolfi A, Bonitta G, Riva CG, Rausa E, Siboni S, *et al.* Flexible versus rigid endoscopy in the management of esophageal foreign body impaction: systematic review and meta-analysis. *World J of Emerg Surg.* 2018;13(42):1-9. doi.org/10.1186/s13017-018-0203-4.
- [7] Pfau PR. Removal and management of esophageal foreign bodies. *Techniques in Gastrointestinal Endoscopy* 2014; 16(1):32-39.
- [8] Mondal PJ, Saha S, Ghosh A, Sengupta M. Removal of Foreign Bodies from Esophagus with Flexible Endoscope - A Case Report. *Indian J Otolaryngol Head Neck Surg.* 2014; 66(1): 78–80.
- [9] Stoner P, Hilgenfeldt E, Schlachterman A. Impacted Metallic Spring Requiring Cervical Esophagotomy: A Case Report and Review of the Literature on Foreign Body Removal. *Case Reports in Gastrointestinal Medicine* 2017; Article ID 5468131: 1-3. doi.org/10.1155/2017/5468131.
- [10] Virgilio E, Giuliani D, Nigro A, Gasparrini M, Balducci G. Cervical Esophagotomy for Removal of an Ingested Clam Shell: A Very Uncommon Foreign Body Ingestion. *Med Princ Pract* 2017;26:390–392. doi: 10.1159/000477403.

- [11] Zhang X, Jiang Y, Fu T, Zhang X, Li N, Tu C. Esophageal foreign bodies in adults with different durations of time from ingestion to effective treatment. *J Int Med Res.* 2017;45(4):1386–1393.
- [12] Bernadette NN, Ze JJ, Pondy AO, Kalla CM, Kamgaing N, Eone DH. Long Standing Esophageal Perforation due to Foreign Body Impaction in Children: A Therapeutic Challenge in a Resource Limited Setting. *Case Reports in Pediatrics* 2017; Article ID 9208474, 1-6. doi.org/10.1155/2017/9208474.
- [13] Choi SI, Choi J. Endoscopic retrieval for a large impacted meat bolus in the oesophagus. *BMJ Case Rep* 2021;14:e241275. doi:10.1136/bcr-2020-241275.
- [14] Yuan F, Tangi X, Gong W, Su L, Zhang Y. Endoscopic management of foreign bodies in the upper gastrointestinal tract: An analysis of 846 cases in China. *Experimental and Therapeutic Medicine* 2018;15:1257-1262. doi: 10.3892/etm.2017.5561.
- [15] Athanassiadi K, Gerazounis M, Metaxas E, Kalantzi N. Management of esophageal foreign bodies: a retrospective review of 400 cases. *European Journal of Cardio-Thoracic Surgery* 2002; 21(4):653–656.



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Figure 1. Barium Swallow: Dumb bell-shaped filling defect at the distal third of the oesophagus as a result of an impacted oesophageal foreign body (Kola nut) with proximal oesophageal dilatation.



Figure 2: Endoscopic image of an impacted foreign body (Kola nut) in the distal third of the oesophagus causing dilatation of the proximal oesophagus and showing presence of copious fluid and food debris collection.

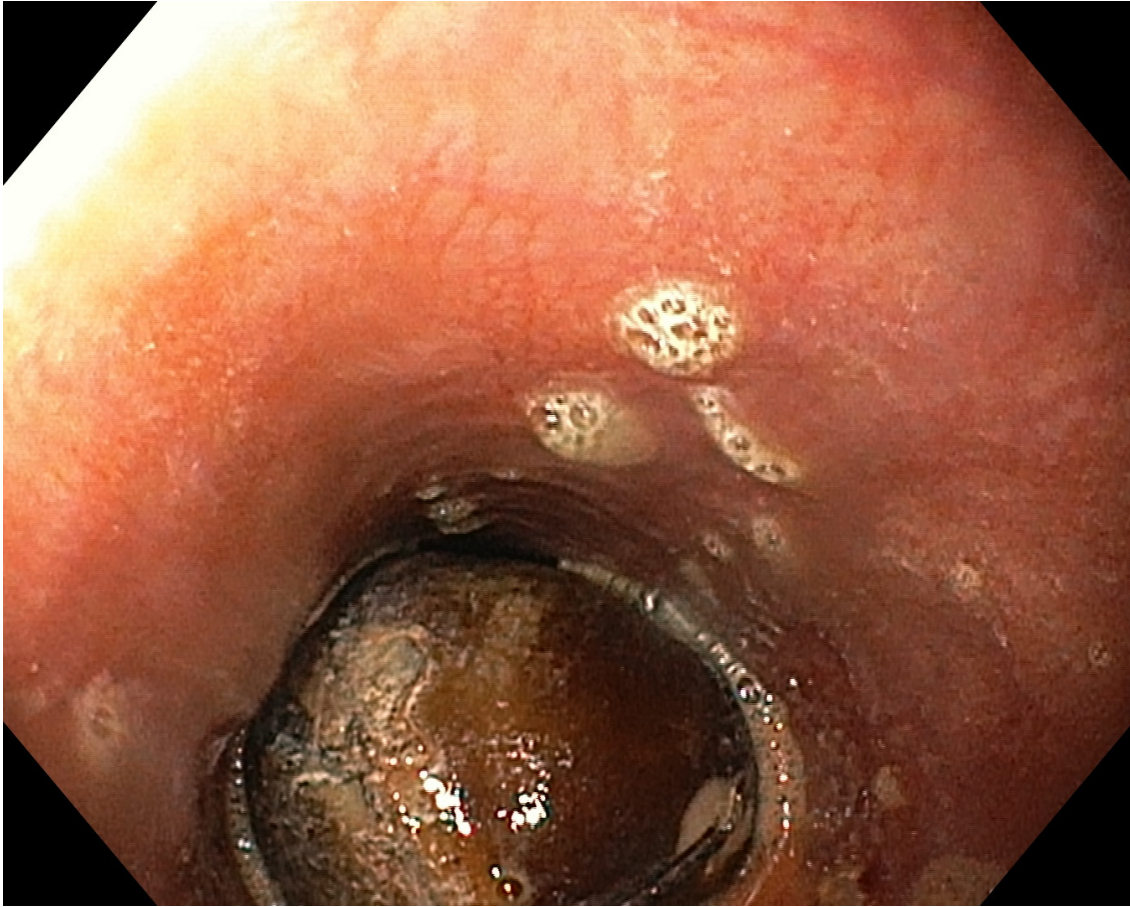


Figure 3: Another endoscopic view of the oesophagus showing a closer view of the foreign body (Kola nut) causing a complete occlusion of the lumen of the oesophagus.

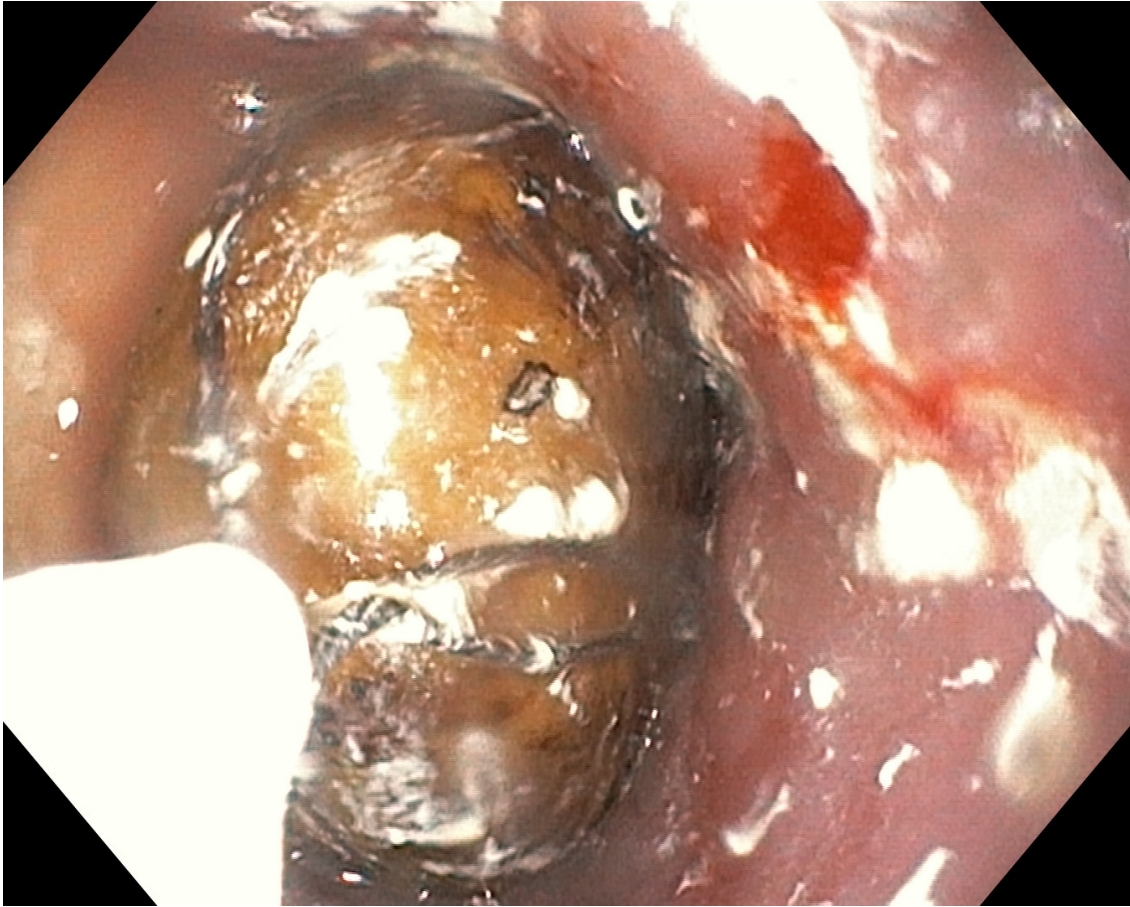


Figure 4: Endoscopic image showing attempt at removal of the foreign body (Kola nut) with a polypectomy snare. The Kola nut was big, round and slimy (due to a pool of saliva) making it difficult to be grasped by the snare.