Volume : 13; Issue1; pp 91-96
DOI: https://doi.org/10.4038/cjo.v13i1.5378

Migrated oesophageal foreign body retrieval with trans cervical approach in a district general hospital of Sri Lanka

Dissanayake DMAH[1], Dissanayake KP[2], Ramasundara KHCM[3], Rajapaksha RMGP[4], Azeeza MRF[4], Bandara EGMGN[4], Abhayasinghe PRRWMRD[4]

[1-]Consultant ENT and Head & Neck Surgeon, District General Hospital Nuwara Eliya, Sri Lanka.

[2-]Consultant Anesthesiologist, District General Hospital Nuwara Eliya, Sri Lanka.

[3-]Consultant Microbiologist, District General Hospital Nuwara Eliya, Sri Lanka.

[4-]Medical Officer in ENT ,District General Hospital Nuwara Eliya, Sri Lanka.

Abstract

A 53-year-old previously healthy patient presentated with an impending airway obstruction due to a retropharyngeal and a para-oesophageal abscess caused by a delayed impacted foreign body,failed retrieval with rigid oesophagosopy. The patient was successfully managed by exploration of the neck with trance cervical approach in a district general hospital setting. Awareness and early referral from primary care setting could have prevented a potentially life threatening complication.

Key words: Oesophaeal Foreign Body, Trance Cervical Approach, Retropharyngeal Abscess, Para-Oesophageal abscess

Funding: None

Competing interest: None

Correspondence: Dr D M A H Dissanayake (dissanayakehemantha@gmail.com)

Accepted Date: 18th Jan 2024 Published Date: 11th February 2024

p-ISSN : 2012 - 855x, e-ISSN: 2576-2040
Ceylon Journal of Otolaryngology

Introduction

Accidental ingestion of foreign bodies (FB) are relatively a common occurence in chlidren than adults and most of them spontaneously migrate to the stomach and passes out from gastrointestinal tract without serious consequences but, some get impacted mainly at the oesophageal inlet (cricopharyngeal spincter) and need to be removed as soon as possible to avoid potential life – threatening complications such as oesophageal perforation, retropharyngeal and para-oesophageal abscess formation, upper airway obstruction, mediastinitis and injury to carotid vessels. The risks of complications are more with the duration of impaction ,type and the site of the FB.

Case History

This was a 53–year-old previously healthy male patient presented with difficulty in swallowing (Dysphagia) and painful swallowing (Odynophagia) for 3 days associated with difficulty in breathing for 1 day, with a history of suspected foreing body ingestion 7 days back. This patient had a history of suspected foriegn body ingestion whilst having his dinner with dried fish 7 days back. He felt something stuck in the throat with sharp pain with subsequent swallowing and came for medical advice the following day morning and apperently was been treated with some pain killers which gave him some relief for couple of days. However, he experienced persistent foreign body sensation and painful swallowing and and visited the same medical facility on day 3. He claimed that he was treated with oral antibiotics and reassured that the symptoms will get better with the medication. However, the symptoms have worsened overtime and he presented to the ENT unit as an out patient with severe odynophagia and difficulty in breathing. There was mild stridor,drooling of saliva and tenderness over the neck and he was febrile, tachycardic and tachyphnic and saturation was 100% on room air. An urgent x-ray was arranged[figure 01].

Figure 01: X-ray soft tissue neck lateral view showing a radio-opaque forein body (C3,4 level) with a widened prevertebral space suggestive of a retropharyngeal and para-oesophageal abscess.

The patient was started on intravenous antibiotics (Ceftrioxone and Metranidazole) and nebulized with adrenaline (1:1000). Examination with flexible nasolaryngoscopy (FOL) showed posterior pharyngeal wall odema and salivary pooling in the post cricoid region. The patient underwent rigid oesophagoscopy under general anesthesia and there was a abscess formation. However, the forieng body could not identified with rigid oesophagoscopy.

Volume : 13; Issue1; pp 91-96
DOI: https://doi.org/10.4038/cjo.v13i1.5378

Afterwards the patient underwent a computered tomogrphy (CT) scan and it showed a linear radio-opaque foreign body in the prevretebral space, close to the vertebral coloumn at the level of C5,6 [Figures 2a,2b]. An external approach with lateral trans cervical oesophagotomy was planned to retrieve the foreign body and drain the abscess.

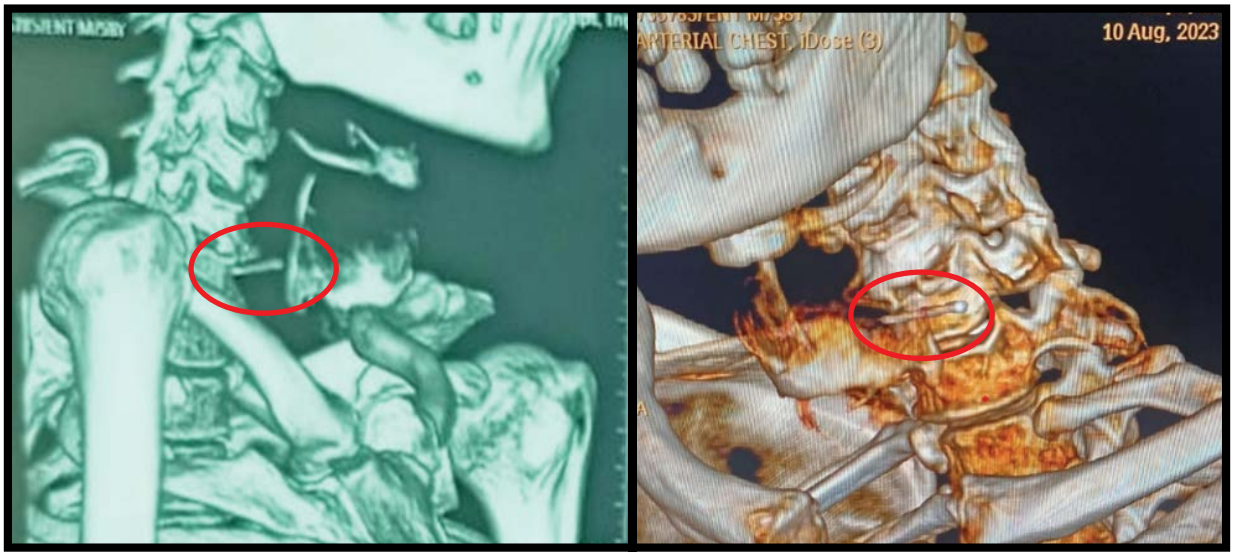

Figure 2A and 2B : 3D reconstructed Computered tomography (CT) view of the Foreign body (red outlined) in the prevertebral space with a close relation to the cervical vertebral coloumn (C5,6 level).

Surgical Procedure and Management

It was decided to explore the neck through the left side using a transcervical approach. The patient was positined supine , head extended turned to the oposite side and a sand bag under the ipisilateral shoulder. The horizontal neck incision was made at the level of the cricoid, subplatysmal flaps elevated, deep cervical facia devided longitudinally along the anterior boarder of the left sternocleidomastoid muscle.

Omorhyoid muscle was devided and caroitd sheath and left lobe of the thyroid gland were identified. The tissue was inflammed and oedematous. Left middle thyroid vein was devided and ligated. Left thyroid was retracted medially and carotid sheath retarcted laterally and oesophagus was identified. Tissue was very friable due to the inflammation and the abscess involving the prevertebral space was evident with the discharge of pus. Pus drained and the site was washed with normal saline and an area of upper oesopheal perforation along the postero-lateral wall of the oesophagus was identifed. A linear sharp pointed metal forein body(metal pin) was found in the prevertabla space and retrieved [Figure 3A].

A nasogastric tube (NG) (feeding tube) was placed and the site was thorougly washed with normal saline (0.9%) and 10% povidone iodine. A two layer closure of the oesophageal tear done with 4-0 polyglycolic acid (Vicryl) and the repair site was reinforced with a patch of omohyoid muscle flap. A suction drain was applied and routine closure was done.

p-ISSN : 2012 - 855x, e-ISSN: 2576-2040
Ceylon Journal of Otolaryngology

Figure:3A ; Metal foreing body (metal pin).
3B;A photo of the patient shows the surgical site on post opertive day 21.

The patient was kept intubated for the first 24hours postopertively and managed in the surgical intensive care unit. The patient was extubated and nasogastric (NG) feeding was started on day 2 and continued for 14 days with IV antibiotics, anti-reflux and proton-pump inhibtors. Inflammatory markers with white cell counts and C-reative protein (CRP) were monitored and came down with the treatment. Management of the patient was carried out with a collaboartive approach by the ENT,intensive care and microbilogy teams and the patient recovered well. A contrast swallow study was performed on day 15 and there was no evidance of oesophageal leak and nasogastric tube was removed and oral feeding resumes gradually since day 16.

The patient was discharged home on day 18 and the following photo was taken on day 21, it shows a nicely healed neck incision[Figure 3B].

Discussion

Oesophageal foreign bodies (FB) are a common occurrence and most of them (80-90%) pass spontaneously[1] without significant consequences. The European society of gastroentrology has classified oesophageal FB as following[2].

Blunt objects	Coins,button batery,buttons,magnets
Sharp-pointed objects	Needle,bone,safety pin,glass pieces,partial dentures,razor blades
Long objects	String,cord,pen,pencil
Food bolus	With or without bones
Others	Packets of illegal drugs

Volume : 13; Issue1; pp 91-96
DOI: https://doi.org/10.4038/cjo.v13i1.5378

The three common sites of foreign body impaction in the oesophage are upper oesophageal sphincter (cricopharyngeal sphincter) at the oesophageal inlet and the middle oesphagus where the oesophagus crosses the aortic arch and the lower oesophageal sphincter (LES). However, food bolus impaction in adults may be the presentaion of oesophageal pathalogies such as diverticula, strictures, webs, tumours, achalasia and other motility disorders and therefore, adults with a history of food bolus impaction need further evaluation even it passes spontaneously.

FBs such as button bateries (disc battery) and sharp-pointed objects need emergent removal to prevent life-thretening complications. Button bateries causes erosion and perforation of the oesophagus due to liquefactive necrosis due to alkaline injury begins within 15 minutes of impaction and oesophageal perforation can happen within hours. Most of the serious complications (>90%) occurs in younger children (<5years old) with the battery size of 20mm or more with longer duration of impaction[3].

This patient had a sharp-pointed object (metal pin) impaction for seven days and presented with impending airway obstruction due to para-oesophgeal abscess formation. Sharp pointed objects have a high risk of oesophageal perforation and can migrate and injure the adjacent carotid vessels, tracheobroncheal tree, and mediastinal structures. Therefore, possible complications of a sharp-pointed objects occur in and out of the oesophagus. Complications withing the oesophagus are mucosal abrasions, lacerations, erosions and perforation and complications outside the oesophagus are erosion into adjacent great vessels (carotid and aorta), trachea and medistinum. Late complications incude retropharyngeal abscess, para-oesophageal abscess and mediastinitis.The risk of complications depends on the duration of impaction, type and the size of the FB[4].

Evaluation of a patient with a suspected oesophgeal FB includes history, examination, imaging and endoscopic assessment. Important points to consider are type of foreign body, single or multiple,time since ingestion, possible site of impaction, presenting symptoms and signs. Initial assessment will guide weather the FB needs to be retrieved emergently, urgently or can be observed. Presentation and symptoms of oesophageal foreign bodies varies with the site of impaction, type of FB and the duration of impaction.

Most will experience foreign body sensation and dysphagia. Odynophagia is a significant symptom and this may be due to oesophageal laceration or perforation. Impaction in the distal oesophagus may cause discomfort in the chest with ache or pain, retrosternal fullness, retching, hypersalivation and regurgitation. Delayed presentation due to complications causes more acute symptoms of airway obstruction and systemic inflammtory response due to abscess formation and mediastinitis. This patient had dysphagia, odynophagia and difficulty in breathing due to an impacted shard-pointed object, retropharyngeal and para-oesophageal abscess causing compression of the upper airway.

Assessment with imaging includes radiography and computer tomography (CT). Radiography includes, X-ray neck lateral (soft tissue view), chest X-ray (postero-anterior view) and abdominal X-ray. CT has more specificity and sensitivity and indicated if complications are suspected such as oesophgeal perforation and abscess formation. X-ray neck lateral of this patient showed a radio-opaque sharp pointed object and features of an abscess with widened prevertebral space. CT scan exactly showed the shape,location and the depth of the foreign body which guided the side of the external approach.

The overall outcome of the oesophageal perforations depends on the degree of mediastinal contamination and patient comorbid factors[5]. This patient was previously heathy without comorbid factors with no evidence of medisastinitis and recovered uneventfully with the collarborative approach management with ENT, intensive care and microbilogy.

Conclusion

Impacted foreign bodies in the oesophagus can cause life-thretening complications and the risk of complications are high with the longer duration of impaction. Eventhough most of the impacted foreignbodies are retrievable with the oesophagoscopy complicated cases may need surgical intervention with external approach. Awarness in primary care setting and a timely referal could have prevented the complication.

Acknowledgement

We would like to thank the staff of the radiology department, theater team,surgical intensive care unit ,microbiology team and ENT unit Distric General Hospital Nuwara Eliya for their efforts and support during the management of this patient.

References

1. *Schaefer TJ, Tracinski D. Esophageal Foreign Body. [Updated 2023 Jan 30]. In: Stat Pearls [Internet]. Treasure Island (FL): Stat Pearls Publishing; 2023 Jan-https://www.ncbi.nlm.nih.gov/books/NBK482131.*
2. *Birk Michael et al. Removal of foreign bodies in the upper gastrointestinal tract in adults: (ESGE) Clinical Guideline. Endoscopy 2016; 48: 1–8 DOI http://dx.doi.org/10.1055/s-0042-100456 ISSN 0013-726X*
3. *Lawati TT, Marhoobi RM. Timing of Button Battery Removal from the Upper Gastrointestinal System in Children. Pediatric Emergency Care. 2021 Aug 1; 37(8):e461-e463. https://doi.org/10.1097/PEC.0000000000001697 . PMID: 30601350.*
4. *4.Hyuk Su Son, Sung Kook Kim, Min Kyu Jung, Chang Min Cho, Won Young Tak, Young Oh Kweon, Factors predictive of risk for complications in patients with oesophageal foreign bodies, Digestive and Liver Disease, Volume 43, Issue 8,2011,Pages 632-635,ISSN 1590-8658, https://doi.org/10.1016/j.dld.2011.02.018.*
5. *S.Washed,B Dent, R Jones, S M Griffin, Spectrum of oesophageal perforations and their influence on management, British Journal of Surgery, Volume 101,Issue1,January 2014(e156-e162). https://doi.org/10.1002/bjs.9338.*
6. *Hugo Rodríguez et al. Management of foreign bodies in the airway and oesophagus, International Journal of Pediatric Otorhinolaryngology, Volume 76, Supplement 1,2012,Pages S84-S91,ISSN 0165-5876, (https://doi.org/10.1016/j.ijporl.2012.02.010.)*
7. *Wei-Chung et al, Clinical experiences of removing foreign bodies in the airway and esophagus with a rigid endoscope: A series of 3217 cases from 1970 to 1996, Otolaryngology - Head and Neck Surgery, Volume 122, Issue 3,2000,Pages 450-454, ISSN 0194-5998, (https://doi.org/10.1016/S0194-5998(00)70063-5)*
8. *Gretarsdottir HM, Jonasson JG, Björnsson ES. Etiology and management of esophageal food impaction: a population based study. Scand J Gastroenterology. 2015 May; 50(5):513-8. https://doi.org/10.3109/00365521.2014.983159 Epub 2015 Feb 22. PMID: 25704642*