



'Hiding Place' for Foreign Body Oesophagus; A Case report

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Abstract

Foreign body ingestion is one of the common problem encountered in day to day ENT practise. Though it is more common in paediatric age group, however, it may occurs to adults as well which may lead to significant morbidity amid rarely mortality^(1,2,3). We report a unique case of a fine, 2x0.1cm metal wire, swallowed accidentally by a healthy 26 years old gentleman, which subsequently lodged hiddenly at upper cervical oesophagus.

Objectives; *Mainly to share my experience in managing such a minute foreign body 'hiddenly' located at upper cervical oesophagus during my training in Sarawak General Hospital*

Keywords: *Hidden, Foreign Body, Oesophageal narrowing.*

Introduction

The commonest location per se for foreign body oesophagus remained debatable. Schaefer et al has mentioned, 80-90% of adult cases occurred in distal oesophagus as opposed to Xiaowen Zhang et al, based on the study conducted by them, 85.52% of the foreign bodies located at upper, followed by 12.67% middle, and a merely 1.81% lower oesophagus⁽⁴⁾. Endoscopic removal of foreign body oesophagus is the preferred and commonly used method, as compared to external approach which are extremely rare^(3,4). Thorough understanding of the oesophagus with its anatomical constriction is the fundamental step in dealing with this kind of case⁽³⁾.

Case Report

An unfortunate 26 years old healthy gentleman, with no known medical illness background, presented to ENT Sarawak General Hospital (SGH) outpatient clinic with main complaint of dysphagia for 3 days duration. Further history revealed, the onset of symptom occurred so suddenly after eating a bowl of home cooked noodles, prepared by using malfunction cooking utensils. He had maximum point of pain located middle of the anterior neck, at the epicentral level of thyroid cartilage. On 70 degree rigid scope showed initial suspicious material at the post cricoid region, which disappeared after initial direct attempt of removal and manipulation. Lateral neck X rays showed fine material shadow anterior to C4-C5.



Figure 1 shows the initial presentation lateral neck x ray of our patient



Figure 2 shows 2nd post-operative cervical x ray AP view

He underwent emergency esophagoscopy under general anaesthesia for total of 3 times over period of 2 days. Each attempts lasted merely of 2 hours in duration. The first 2 attempts ended in failure, as the foreign body was unable to be found. CT scan was done and repeated x rays revealed the foreign body has migrated from C4-C5, to C5-C6 level around the post cricoid region. In addition to the routine x rays and CT images as guidance, a C-arm image intensifier was used during this final attempt. After almost 2 long hours, the foreign body was successfully retrieved, 15cm from upper incisor, located hiddenly between the post cricoid mucosa & the mucosa of the arythaenoid cartilage. Due to continuous multiple attempts and manipulations, post operatively the hypopharynx, supraglottic and oesophageal mucosa was inflamed and swollen, patient was admitted into ICU, for post-operative care.

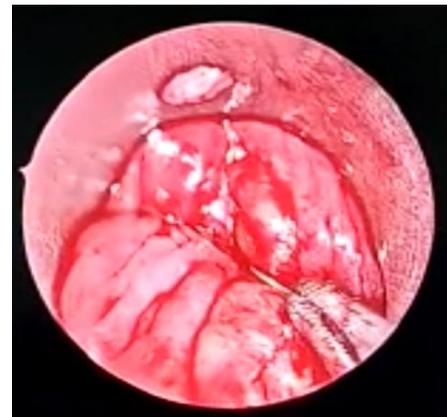


Figure 3 shows the foreign body successfully retrieved using a crocodile forcep



Figure 4 shows the image from C-arm image intensifier; the right hand shows the foreign body was still present, while the left hand shows the foreign body was completely removed



Figure beside shows the foreign body retrieved from our patient

He was discharged home with prophylactic nasogastric tube feeding for 2 weeks and subsequent outpatient visit showed complete recovery, both endoscopically and symptomatically.

Discussion

The incidence of foreign bodies oesophagus remained anecdotal, however Schaefer et al has described that children are the commonest age group that present with oesophageal foreign bodies⁽³⁾. Not surprisingly, most literatures in related to foreign bodies oesophagus has classified this topic into paediatric and adults^(3,4,5). As our main subject in relation to this case report was from adult age group, the discussions will focus more towards this age group.

Even though there are diversities of materials were described in various literatures with regards to this topics, such as coins, fish bones, chicken bones, disc batteries, the commonest were sharp-pointed object, which was almost similar to the case reported by us earlier^(4,5,6). Having said that, the subjects were prone to developed complications such as ulcer formation, oesophageal perforation, cervical infection, mediastinitis, abscess formation or even injury to large vessel which may lead to disastrous lethal haemorrhage and mortality⁽⁴⁾.

According to Al Hussein Awad et al, swallowed foreign bodies, are the most commonest among the foreign bodies presentation, as compared to aural and nasal foreign bodies⁽⁵⁾. Systemic reviews and meta-analyses done over 18 years period, beginning from the year 2000 to June 2018 by Alberto Aiolfi et al, has confirmed that the cervical oesophagus was the most frequent site of impaction of foreign bodies⁽⁶⁾. To be more specific, the commonest site of impaction occurred at hypopharynx region at the level of cricopharyngeal sphincter in 68% of cases⁽⁵⁾. Nevertheless, for adults presented with lower oesophageal foreign bodies should be ruled out for organic causes such as diverticula, eosinophilic esophagitis, achalasia, scleroderma, or oesophageal spasm⁽³⁾.

As mentioned earlier, thorough understanding of the narrowing or constrictions of oesophagus is a must for any surgeon prior to handling cases like this. These constrictions are mainly anatomical, however pathological narrowing also can be seen

in certain group of people⁽⁷⁾. The classical first narrowing is located 15cm from upper incisor, formed by the oropharyngeal muscle and corresponds to 6th cervical vertebrae. It is classically named 'Upper Oesophageal Sphincter'⁽⁷⁾. Second classical narrowing corresponds to 22.5cm from incisor teeth at the level of 4th thoracic vertebrae, which correspond to its relation to aortic arch. The third corresponds to 27.5cm from incisor at the crossing point of oesophagus and left main bronchium, and lastly the oesophageal hiatus with its physiologic lower oesophageal sphincter which is exclusively made by group of muscle fibers from right crus of diaphragm, that corresponds to 40cm from upper incisor at the level of 11th thoracic vertebrae⁽⁷⁾. The pathological narrowing can be seen in patient with mitral stenosis with atrial dilatation just below the bronchial narrowing. Other pathological narrowing includes the 'Laimer' narrowing, which is associated in patients with aortic atherosclerosis at the level of 10th thoracic vertebrae which also correspond to the second crossing of oesophagus and aorta⁽⁷⁾. These are the classical areas which are proven to be appreciated from esophagoscopy and also barium swallow⁽⁷⁾.

From the information gathered above, it is exactly correspond to the location that was finally retrieved from our patient amid multiple failed attempts initially. Endoscopic removal of oesophageal foreign bodies using a rigid esophagoscopy remained the mainstream and preferred method among ENT surgeons^(4,5). The usage of a C-arm image intensifier as additional intraoperative guidance was our last resort prior considering external approach to retrieve the foreign bodies such as lateral cervical incision and neck exploration, which we were really intended to do so should the third attempt failed. Other modalities such as CT or MRI guided foreign body removal never being attempted from our centre as it requires multidisciplinary approach with more teams involve.

There are no specific guideline with regards to post-operative monitoring in this kind of case

(4).Due to multiple manoeuvres and manipulations done intraoperatively, oesophageal oedema was anticipated and expected at least. Luckily our patient has no major complications such as bleeding, oesophageal perforation or mediastinitis noted post operatively. The duration of nasogastric tube feeding for two weeks are based on clinical judgement and experiences and also based on the basic fundamental of healing process in which the earliest onset of remodelling phase sets in, giving almost the same tensile strength as prior to the injury occurred⁽⁸⁾.

Conclusions

Most of foreign bodies cases done in our centre were successfully retrieved with single attempt, very rarely more than second attempt and aboveall, the duration usually much lesser than the one reported here. The complexities of the this case can be attributed to the material of the foreign which was a 2cm length fine metal wire with diameter of 0.1cm which was lodge 'hiddenly' in between the post cricoid mucosa and mucosa of the arythaenoid cartilage. Nevertheless, the importance of grasping the anatomy of oesophagus remained the core and fundamental steps for clinician amid surgeons to manage cases similar to this.

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