Unexpected Extremely Rare Upper Aerodigestive Tract Foreign Body

Son Derece Nadir Üst Solunum-Sindirim Sisteminde Yabancı Cisim

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ABSTRACT

Foreign body (FB) ingestion is common in children and the elderly, and is life-threatening in certain cases. Psychiatric disorders, mental retardation, prisoners, alcoholics, edentulous elders and probably stroke are among the risk factors in adult cases. The most common FBs are fishbone, chicken bone, coin, denture and improperly chewed meat. Some extremely rare FB has been reported such as durian seed and plastic fork. Symptoms are varied depending on the size and shape of FB and the site of impaction. FB that lodges in the airway is obviously more severe and needs to be addressed urgently. Detailed history, clinical examination and proper investigation help early detection and prompt management. However, challenges in diagnosis may arise in the case of rare FB and the patient unable to give a proper history. We present an extremely rare FB that contradicts from the patient's history.

Keywords: Upper aerodigestive tract foreign body, stink bean, stroke, edentulous

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ÖZET

Yabancı cisim (YC) yutulması çocuklarda ve yaşlılarda sık görülür ve bazı durumlarda yaşamı tehdit eder. Erişkin olgularda psikiyatrik bozukluklar, zeka geriliği, mahkûmlar, alkolikler, dişsiz yaşlılar ve muhtemelen inme risk faktörleri arasındadır. En yaygın YC'ler kılçık, tavuk kemiği, madeni para, takma diş ve uygun olmayan şekilde çiğnenmiş etlerdir. Durian tohumu ve plastik çatal gibi bazı son derece nadir YC bildirilmiştir. Semptomlar, YC'nin boyutuna ve şekline ve impaksiyon bölgesine bağlı olarak değişir. Hava yolunda kalan YC açıkça daha şiddetlidir ve acilen ele alınması gerekir. Ayrıntılı öykü, klinik muayene ve uygun araştırma, erken teşhise ve hızlı yönetime yardımcı olur. Ancak nadir görülen YC durumlarında ve hastanın uygun öykü verememesi durumunda tanıda güçlükler ortaya çıkabilir. Hastanın öyküsüyle çelişen son derece nadir bir YC sunuyoruz.

Anahtar Sözcükler: Üst solunum-sindirim sistemi yabancı cisim, kokmuş fasulye, felç, dişsiz

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INTRODUCTION

Foreign body (FB) ingestion and food bolus impaction are common in otorhinolaryngology (ORL) practice. It is among ORL emergencies especially when involving the airway. Generally, the most common FBs are fishbone, chicken bone, coin and denture (1). The same retrospective study revealed adults are more common than children. Bone is more common in adults while the coin is more common in children (2). Adults FB ingestions occur more commonly among those with psychiatric disorders, mental retardation, prisoners, alcoholics and edentulous elders (3).

The presentation may be varied depending on the size and shape of FB and the site of impaction. Small and blunt FB may pass spontaneously into the gastrointestinal tract (GIT) without causing any injury. In contrast, large and sharp FB may be lodge at the narrow part of GIT and result in symptoms like odynophagia, dysphagia and vomiting. The patient may present with choking, shortness of breath or noisy breathing if the laryngeal region is involved.

The most common initial investigation which is readily available is a soft tissue X-ray of the neck. Although it is the most frequently performed procedure, a study has been shown that it has poor sensitivity and specificity in diagnosing fish and chicken bone impaction (4). The same study showed fiber optic laryngoscope is another investigation of choice with 65% sensitivity and 100% specificity. Computed tomography imaging is currently considered the standard of care imaging modality in cases of suspected fish bone impaction in view of its high sensitivity and specificity rates (5). The problems with this procedure are that it is not readily available in most of the centres and has the risk of radiation.

Removal of FB either can be done at clinic setting or may need to be performed under general anesthesia in case of an uncooperative patient, pediatric age group, difficult site to access, or FB which is not visualized on the initial investigation in a symptomatic patient.

CASE REPORT

A 59-year-old Malay lady presented with a complaint of alleged ingested chicken bone 4 days prior to hospital admission. She is a known case of stroke 5 years ago with residual neurological deficit including her gag reflex. Her activity of daily living (ADL) was partially dependent and able to walk with help of a walking stick. Unfortunately, she defaulted medical follow-up for 4 years and bought medication from an over-the-counter pharmacy.

She complained of ingesting small chicken bone found in a soup. She experienced a sore throat and odynophagia soon after ingestion. The symptoms were progressively worsening until she was unable to tolerate both solid and liquid foods. She had dysphagia since diagnosed with a stroke, however, became worsened after this incident. She developed shortness of breath and noisy breathing one day after ingesting the FB. In addition, her voice became hoarse and weak. Otherwise, no fever, cough, choking or cyanotic episodes. She visited a district hospital on the next day, however, was discharged and was told that her neck X-ray was normal.

As her symptoms did not resolve, indeed became worsening, she decided to come to our tertiary centre hospital. On examination she was alert and conscious, however, looked lethargic and dehydrated. There was a presence of biphasic stridor with a gurgling sound in the throat and mild tachypnoeic. She had a very weak cough and absent of gag reflex. She was edentulous and wearing a denture, however, there was no missing part. Copious of whitish secretion in the oropharynx in which she was unable to swallow. On auscultation of the lung, there was the presence of transmitted sounds and oxygen saturation (SpO2) was maintained around 94% to 95%.

Lateral soft tissue neck X-ray was performed and revealed vague FB at the level of the hyoid bone, posterior to epiglottis (Figure 1). It was mixed soft tissue density with a radiolucent area. Another two FBs appear like a teardrop, one above the vocal cord and the other one below the vocal cord. This is atypical for chicken bone which is usually radiopaque. The flexible laryngoscope was performed at the emergency department (ED) and showed a big brownish FB covering the supraglottic region and only epiglottis was partially visualized.

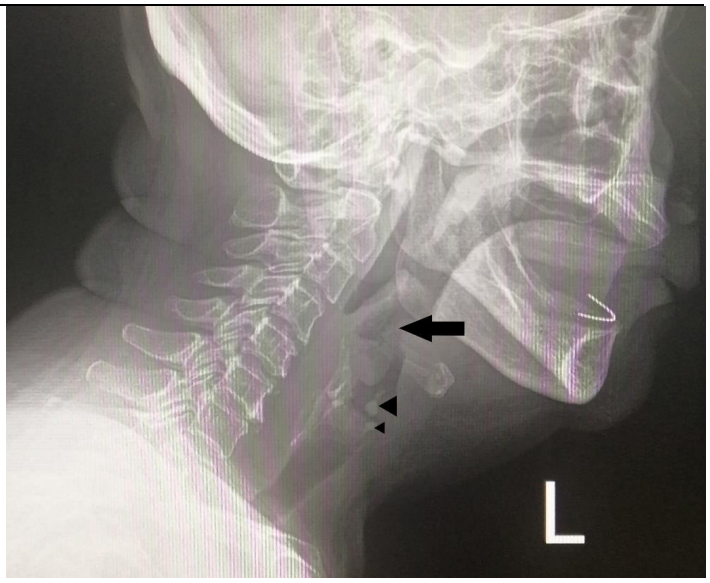

Figure 1. Lateral soft tissue neck X-ray shows a vague foreign body at the level of the hyoid bone, posterior to epiglottis which has mixed soft tissue density and radiolucent area (arrow). Another two foreign bodies appear like a teardrop, one above the vocal cord (big arrow head) and the other one below the vocal cord (small arrow head).

Figure 2. C-Mac laryngoscopy shows a huge yellowish to brownish color stink bean pod at the supraglottic region obscuring the airway.

Subsequently, the patient was pushed to the operation room (OR) for removal of FB under general anesthesia. The patient was pre-oxygenated and given sedation without a muscle relaxant at the initial part of the procedure. By using a visual aid from the C-Mac video laryngoscope (Figure 2), a big yellowish to brownish FB visualized covering the supraglottic region and was managed to be removed by the anesthetist using a Magill's forceps. Surprisingly, it was a stink bean pod or scientifically named *Parkia speciosa*.

Specifically, the main part of the FB was located superior to bilateral arytenoids, aryepiglottic folds, pyriform fossa and posterior 2/3 of the vocal cord. It was measuring 5cm x 3cm (Figure 3). In view of the presence of the remaining small pieces of FB (Figure 4) and also for further detailed examination of the larynx, lower airway and oesophagus, the patient was given a muscle relaxant and intubated with an endotracheal tube (ETT) size 6.5mm (internal diameter).

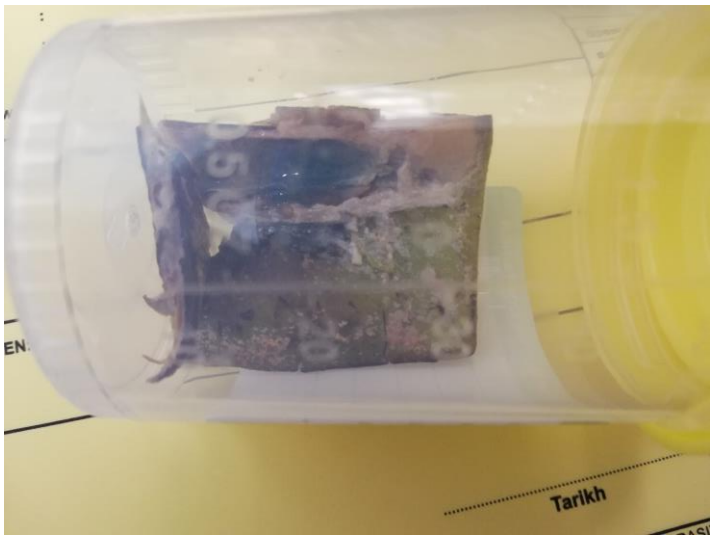

Figure 3. Yellowish to brownish color stink bean pod size 5cm x 3cm in the specimen bottle after removal.

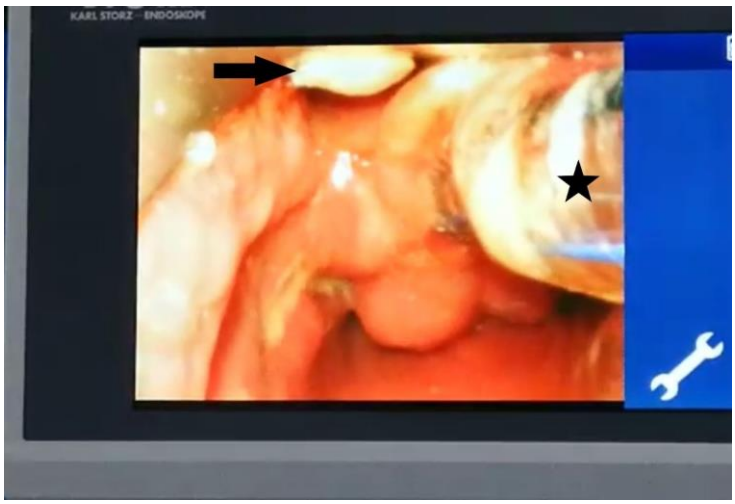

Figure 4. C-Mac laryngoscopy shows the remaining foreign body (arrow) after the patient was intubated with endotracheal tube size 6.5mm (star).

Direct laryngoscope revealed residual small pieces of FB at the bilateral pyriform fossa which were removed using suction. In addition, there was present of a slough at the right pyriform sinus and edematous bilateral arytenoids. Bilateral vocal cords were normal anatomically however unable to assess functionally as the patient was given a muscle relaxant. Esophagoscopy was normal till 25cm from upper incisor and flexible bronchoscope through ETT also normal till bilateral primary bronchus.

Post-operation, the patient developed bronchospasm and left lung atelectasis (Figure 5) which resolved with salbutamol nebulization and intravenous antibiotic. She was started on nasogastric tube feeding and referred to speech therapy for swallowing assessment. On the assessment, there was presence of signs of aspiration to thin liquid, however no signs of aspiration on a soft diet. Thus, the patient was allowed to take soft diet peroral and supplement with a nasogastric tube. Upon discharge, a flexible laryngoscope was performed and revealed normal findings except the right vocal cord was immobile. It was in paramedian position and well-compensated by the left vocal cord. She was discharged home after 4 days of admission.

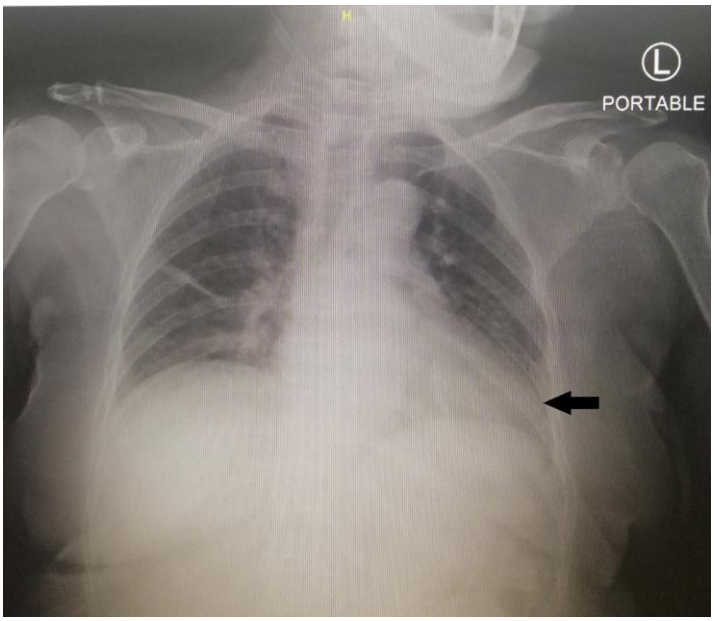

Figure 5. Anterior-posterior view of chest X-ray show atelectasis of the left lower zone of the lung with consolidation (arrow).

DISCUSSION

The most common FB in adults in Asian country including Malaysia is fishbone (1,6). It is probably due to its shape which is sharp in nature and fish is among the most favorite dish in this region. Other common foreign bodies are chicken bone, coin, denture and meat. The extremely rare foreign bodies that have been reported are durian seed (7) and plastic fork (8). As to date, there is no reported case of stink bean pod foreign body at upper aerodigestive tract.

Stink bean or scientifically called *Parkia speciosa* is a plant that is abundantly found in the tropical regions like Malaysia, Indonesia, Thailand, and the Philippines (9). It is known as “petai” in Malaysia, Singapore, and Indonesia, “sator” or “sataw” in Thailand, “u’pang” in the Philippines, and “yongchak” in India. The seeds have a peculiar smell and are popular in these regions which can be eaten raw or cooked. However, it is very rare to consume its pod due to its bitter taste and hard to digest.

The risk factors for our patient to have this FB are probably due to her edentulous and history of stroke which reduce laryngeal sensation as well as gag and cough reflexes. Consistent with other published literature (7, 10, 11), stroke is considered a major risk factor for upper aerodigestive tract FB in adults. In addition, the size of the FB is very big, impossible for it to pass to the oesophagus. Thus, it is lodged at the supraglottic and laryngopharynx regions and causes both upper airway and upper digestive tract obstruction. It is a life-threatening condition and quite challenging in management. We think that it is not safe to remove the FB at the bedside because of the risk of laryngospasm or the piece of the foreign body may pass through the glottic opening and result in total airway obstruction. Our patient developed lung complications (bronchospasm and left lung atelectasis) after the operation.

Proper discussion with an anesthetic team is vital in this type of case and the further step of management needs to be considered like emergency tracheostomy if the airway is further compromised. In a good hand of an anesthetist, the foreign body may be completely removed, however proper examination of the oesophagus, larynx, trachea and lower airway is needed to exclude residual foreign body or secondary pathology contribute to this.

Although neck x-ray was reported to have low sensitivity and specificity in diagnosing foreign bodies, it is still the first-line investigation at our centre. Apart from radiopacity, other signs of foreign body impaction that should be looked for are air trapping and prevertebral widening. Local data showed 66% of cases had significant findings from plain x-ray (1). In our case, the foreign body is quite big and was seen from the lateral soft tissue neck X-ray. Nevertheless, it was clueless about the type of FB when looking at the X-ray alone because of the vague shape and contradicting with the history of chicken bone ingestion.

To prevent a further episode of foreign body ingestion and other life-threatening complications of stroke-like pneumonia, multidisciplinary team management is vital in this type of patient including speech therapy, physiotherapy, medical and rehabilitation medicine.

CONCLUSION

Adult with risk factors, different food habits and intake as well as ways of swallowing are the factors affecting the type of FBs in different countries. The complications are dependent on the type of FB, site of impaction, time interval referral to hospital and proper choice of management. Thus, high suspicion in those with risk factors, abnormal findings on plain X-rays that are readily available in every hospital and early referral to tertiary centre are among the effective manners in order to decrease complications.

Conflict of interest
No conflict of interest was declared by the authors.

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