

Calcified Vertical Plate of the Cricoid - A Rare Pitfall in the Diagnosis of an Oesophageal Foreign Body

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Summary

We present a case of rare pitfall in the diagnosis of an oesophageal foreign body due to the calcified vertical plate of the cricoid to highlight the need to be aware of this entity to avoid unnecessary morbidity.

Key Words: Foreign body, Calcified vertical plate cricoid

Case Report

A 41 year old Indian male felt a sharp pain in his throat while eating chicken pizza. He felt pain in the throat, which was associated with difficulty in swallowing. No similar complaints prior to this. Indirect laryngoscopy did not reveal any foreign body. A lateral cervical x-ray performed (Figure 1) showed a linear radiopaque density at the level of the cricoid which was reported as a foreign body. A fiberoptic oesophagoscopy performed revealed no foreign body. However slough was noted at the level of the cricopharynx. In view of the inability to visualise the foreign body and the persistent symptoms, a non-contrast computed tomography of the neck was done. It revealed a linear opacity posterior to the cricoid cartilage (Figure 2) and this was reported as consistent with an extraluminal foreign body. No air was seen submucosally and there were no paraoesophageal collections.

In view of the persistent symptoms and radiological findings, explorative surgery of the neck was carried out. At operation, no foreign body was found anywhere in the cervical oesophagus. However a prominent calcified ridge along the median plane of the cricoid lamina was

noted. Post operatively, the recovery was uneventful except for a slight hoarseness which improved subsequently.

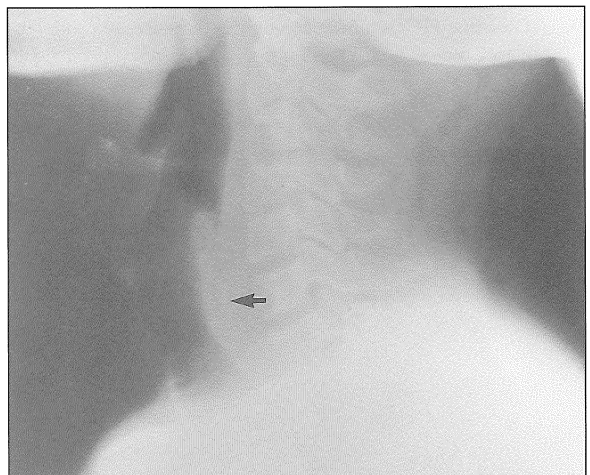


Fig. 1: Lateral soft tissue neck showing the linear opacity (arrow)

Discussion

Foreign body impaction remains a frequent problem seen in the emergency department of the University of Malaya Medical Centre. An average of 120 cases are seen per year¹. The vast majority (88%) of the foreign bodies are found to be opaque¹. In children, the commonest foreign body found are coins while in adults, bones are the commonest cause with fish bones heading the list¹. The commonest cause of non-opaque foreign body is retained food.

It is important to diagnose foreign body lodgement early to prevent complications such as perforation in to soft tissues, parapharyngeal abscess, mediastinitis and bowel perforation. Undetected foreign bodies are associated with significant mortality and morbidity (10% to 20%) with death usually being due to infection and vascular complications. Early diagnosis is therefore essential in avoiding these complications.

Even though plain films (lateral view of the neck) play an important role in diagnosis of these foreign bodies, the presence of calcification of thyroid, cricoid, etc. may be misdiagnosed as foreign bodies. An ossified or calcified thyroid cartilage especially if it is an isolated curvilinear, irregular or indefinite (hazy) calcification at

its common site of impaction is often mistaken for a foreign body. Correlation with the patient's clinical presentation is important to prevent unnecessary investigation and surgery. In this case an isolated curvilinear calcification located posterior to the cricoid cartilage was misinterpreted as a foreign body with impending morbidity.

Hately et al² describe the pattern of calcification of the laryngeal cartilages. Ossification of laryngeal cartilage is not seen in the first decade of life. In infancy calcification has been noted in the hyoid, thyroid and tracheal cartilages. The thyroid cartilage is found to calcify around 20-30 years of age. Cricoid cartilage is found to calcify at the same time or before the thyroid cartilage. The first part of the cricoid to calcify is the superior portion, which is usually mistaken for a foreign body. Calcification is found to progress caudally. Arytenoid cartilage calcifies during the third decade usually. Laryngeal ossification is common in older population and teenagers. Misinterpretations of soft tissues and calcified parts of the larynx as foreign body are not uncommon. This may result in the unnecessary investigation and in some cases surgery.

To reduce the risk of misdiagnosis it has been suggested that radiographic examination be carried out during working hours with competent staff. The use of a single film screen combination may also improve visualisation. A lateral view during swallowing is further helpful. This is to distinguish a foreign body from cartilaginous structure where the latter move upward unlike foreign body, which will stay, unchanged. This manoeuvre also helps visualisation of foreign body in the upper oesophagus that is obscured by soft tissues.

Cross sectional imaging CT can be helpful in demonstrating foreign bodies in difficult locations. Also foreign body seen on plain films but not visible on oesophagoscopy may be defined by CT. In addition, complications resulting from retained foreign body can be demonstrated e.g. abscess formation, oesophageal perforation, etc.. CT has also been used to detect and assist with the removal of small radiolucent foreign bodies. However, the cost and radiation exposure makes CT a less attractive option for the routine diagnosis of foreign body.



Fig. 2: Axial image at the level of the cricoid (bone settings) showing a dense opacity (arrow) lying just posterior to the cricoid

CASE REPORTS

In conclusion, we present a pitfall in the diagnosis of foreign body impaction secondary to a calcified vertical

plate of the cricoid, which resulted in surgery. This pitfall needs to be considered to avoid unnecessary morbidity.

References

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