

An Unusual Esophageal Foreign Body

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ABSTRACT

Ingested metallic foreign bodies are of rare occurrences. Early skillful intervention is necessary to avoid subsequent life threatening complications such as migration. Diagnosis is from positive history of foreign body ingestion and confirmed by neck soft tissue radiograph.

However, some foreign bodies may be swallowed unnoticed, especially if mixed in cooked food. A case of uncomplicated esophageal metallic foreign body ingestion is presented. The foreign body was a wire which was removed using rigid esophagoscopy.

Keywords: Esophagus; Metallic Foreign Body; Rigid Esophagoscopy; Neck Radiograph

Conflict of Interest: None declared

This article has been peer reviewed.

Article Submitted on: 5TH March 2013

Article Accepted on: 12TH October 2013

Funding Sources: None declared

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Cite this Article: Yaroko AA, Moses SS, Mohamad I, Sidek D. An unusual esophageal foreign body. *J Pioneer Med Sci.* 2014; 4(1):15-17

INTRODUCTION

One of the commonest urgent referral to the ear nose throat clinic is foreign body (FB) impaction in the upper digestive tract [1]. The complication associated with this condition could be fatal. The types of FB depend on the age group and local cooking habits. Ingestion of coins is predominant in the pediatric age group. They are usually asymptomatic or can be associated with dysphagia, drooling of saliva, foreign body sensation, vomiting or pain [2]. In general, fish bone was reported as the most common FB in (85%) the upper aero digestive tract [1] from regions where fish meals are prepared and served complete with bones [3].

Metallic upper aero digestive foreign bodies, for example a wire or open staple, which sometimes can migrate to the adjacent structures, are rarely reported [7]. Diagnosis is usually by history of foreign body ingestion and it is confirmed by the neck soft tissue radiograph. The management is usually straight forward with low incidence of complications. Usually most FB are found impacted in the tonsils or vallecula and can be removed using appropriate forceps in the clinic. On rare occasions (about 5%), the FB are found impacted at the cricopharynx or at the esophageal constrictions requiring a rigid esophagoscopy for removal under general anesthesia [4]. We present a case of sharp metallic foreign body impacted in the esophagus following a meal comprising of squid.

CASE REPORT

A 42-year-old Malay female was admitted with

3-hour history of sudden onset severe throat pain while eating a squid meal in a restaurant. She felt the sharp throat pain immediately after she swallowed a lump of squid. She complained that the pain was persistent located at the thyroid notch, which was worsened on swallowing. It was associated with dysphagia to liquid and solid. However, there was no retrosternal pain, no chest pain or any difficulty in breathing. The patient denied any history of trauma, previous surgical procedure or any medical illness.

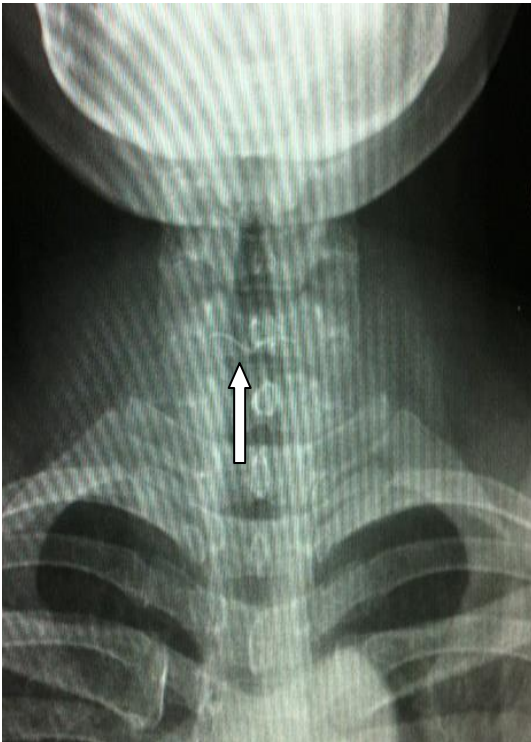
General examination revealed an anxious patient in distress during swallowing. The site of the pain as pointed by the patient was at the thyroid notch. There was positive tenderness lateral to the thyroid notch. No FB was detected in the tonsils and oropharynx. Seventy degree scope revealed normal findings. Urgent lateral view soft tissue neck radiograph revealed a dense radio-opaque linear shadow in the retropharyngeal soft tissue at the level of sixth cervical vertebra (Fig 1 & 2). The object was wire-like metallic in appearance.

An emergency rigid esophagoscopy and FB removal under general anesthesia was arranged. A dose of prophylactic tetanus toxoid was also given in view of the FB suspected to be a metal. Intra-operatively, a 25 cm Richard Wolf esophagoscope was passed into the esophagus where a horizontally impacted 2 cm metallic wire was found at level 16 cm from the upper incisors. The identified horizontally impacted FB was grasped at one end using the forceps and then stabilized while the scope was then gently advanced forward over the FB (Fig. 3). Thus, the FB was securely brought out within the scope, uneventfully without trauma to the esophagus.

Figure 1: Lateral soft-tissue neck radiograph showing a densely radio-opaque FB at level of sixth cervical vertebra (arrow).



Figure 2: Anterior-posterior view of soft tissue neck radiograph demonstrating the horizontally placed radio-opaque FB at level of sixth cervical vertebra



The esophagoscope was introduced until 25 cm without evidence of any other FB. Post operatively there were no complications and repeat neck radiograph was normal. The patient was allowed feeding by mouth on postoperative day one and subsequently discharged for follow up in the clinic. She was seen two weeks after operation in the clinic without any complication.

DISCUSSION

Upper aero digestive FB impaction is one of the common surgical emergencies seen at the emergency department in most centers. FB ingestion is associated with significant morbidity and occasional mortality. The nature of impaction ranges from simple to life-threatening. Impacted FB can be found in the tonsils, base of tongue, pyriform sinus or cervical esophagus [5]. The diagnosis is from positive history of FB ingestion followed by confirmation with a neck radiograph. Lateral view neck radiographs are confirmative, however the anterior-posterior view is of great help especially if the FB is orthogonal to the plane of view, as in this index case.

Metallic objects are usually densely radio-opaque, however, not all FB are detected by radiographs. For fish bones, lateral soft tissue radiograph was shown to have a sensitivity of 25% and specificity of 86.3% [6]. Due to low sensitivity, a negative radiograph with positive history still warrants an esophagoscopy under general anesthesia. Observation is not a management option in patients with sharp foreign body ingestion, in view of high risk of puncture, migration of the FB and perforation of the esophageal lumen. Computed tomography (CT) scans are indicated in suspected migrated FB.

Esophagoscopy is the mainstay of treatment for removal of impacted esophageal FB but is not without risks. One of the complications associated with this procedure is esophageal perforation, which can occur in 0.2-2.0% of cases [7]. The perforation could be due to the unskillful maneuverings of the rigid esophagoscope or the manner of handling the FB. New technologies, such as flexible esophagoscopy, may serve as both diagnostic and therapeutic tools. However, the type of FB itself may indicate the use of either rigid or flexible endoscope. Sometimes the nature of the FB can increase the risk, for example the stiff and sharp-pointed wire in this index case. In our case, the FB was very sharp which could be associated with high risk of trauma to the esophagus if not handled skillfully.

Figure. 3: A 2 cm metallic wire FB with sharp edges removed at the level of sixth cervical vertebra



Using the 25 cm Richard Wolf esophagoscope, the identified horizontally impacted FB was successfully grasped at one end using forceps and then stabilized. The scope was then gently advanced forward over the FB enveloping it in the lumen of the rigid scope. Thus, the FB with both edges protected was securely brought within the scope uneventfully without esophageal trauma.

The distensible esophagus can easily accommodate the scope, that is advanced forward without trauma. However, pulling the sharp FB against a collapse esophagus into the scope can cause trauma. A similar technique, to avoid esophageal injury while removing sharp objects, includes grasping the object with its sharp end pointing downwards into the lumen and pulling FB out without contact with the esophageal wall during removal [8]. Another method for the removal of irregular or sharp objects is the use of overtube [9].

Complications associated with the FB itself, if not promptly attended to, include esophageal perforation, retropharyngeal or parapharyngeal abscesses with or without mediastinitis and rarely esophago-aortic fistula [1]. Other rare complications include perforation and migration of foreign bodies to the subcutaneous tissue of the neck, thyroid cartilage and perforation of large arteries of the neck. The risk of penetration

of the FB is related to the sharpness and orientation of the FB. The sharper the FB and the more horizontally impacted the FB is, the higher the penetrating capability of FB [10]. The FB in this case, being a sharp wire and found horizontally impacted in the anterior aspect of the esophagus, was removed without any trauma to the mucosal lining or causing penetration and perforation.

The sharp wire was a squid-catching hook which got straightened up. This patient, despite good dentition, could not detect the 2 cm wire while chewing. It is recommended to follow the age-old advice that food should be properly chewed before swallowing to make sure the particles of the bolus are finer and for detection of an abnormal material in the food being consumed.

In conclusion, rigid esophagoscopy still remains the mainstay management of impacted esophageal foreign bodies. However, the technique of removal must be tailored to the type, location and possible complications imposed by individual FB.

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