CASE REPORT

Posterior Mediastinal Abscess Secondary to Esophageal Perforation Following Fish Bone Ingestion

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SUMMARY

Accidental swallowing of fish bone, which arrested in esophagus, is fairly common. However the incidence of esophageal perforation due to fish bone swallowing is low. Delayed posterior mediastinal abscess as a result of the esophageal perforation is a rare manifestation and may lead to fatal outcome. Two cases of delayed formation of posterior mediastinal abscess following esophageal perforation due to accidental fish bone ingestion are described here. In these cases patients presented with inter-scapular back pain. In one of the cases the patient died because of the presentation was misdiagnosed hence leading to delay in the intervention. Radiological findings and surgical management namely esophagoscopy and neck exploration are briefly described.

KEY WORDS:
Fish bone, Esophageal perforation, Mediastinal abscess

INTRODUCTION

Foreign body (FB) deposition in the esophagus is a common acute clinical problem in the otolaryngology clinics. This is because the esophagus is a passive and unadaptable organ. The peristaltic activity of this area is much less compared to the rest of gastrointestinal tract. Most of the FBs are impacted at or above the cricopharyngeus level and this can be confirmed on neck x-ray and rigid esophagoscopy. Among the wide variety of FBs retained in the esophagus fish bones were the most common followed by chicken bone[1]. These two FBs were most commonly associated with major complications such as esophageal perforation, cervical or mediastinal abscess and migratory FB in the neck or even in the mediastinal tissues. About 1500 deaths per year have been recorded caused by FB ingestion in the USA[2]. In general, the more common symptoms are chest or pharyngeal pain, dysphagia, odynophagia, FB sensation and sialorhoea.

CASE REPORT 1

Mr RM, a 47 year-old, Indian man, was newly diagnosed to have diabetes mellitus and on oral hypoglycemic agent. A private Ear, Nose and Throat (ENT) specialist referred him to the government ENT clinic for possible esophageal perforation following fish bone removal few days earlier. The fish bone was removed via esophagoscopy. He presented with inter-scapula pain, which became worse after meals, and associated with mild-grade fever. General examination showed an afebrile man in slight distress due to back pain. On admission he was started on intravenous antibiotics and Ryle's tube feeding. Barium swallow showed no evidence of esophageal fistula and chest X-Ray was normal. OGDS by a surgeon found no foreign body and no evidence of fistula. Orthopedic assessment for the back pain was also unremarkable. After 10 days in the ward, he was discharged after his fever and back pain showed some improvement. However, three days later, the patient returned to the Accident and Emergency (A&E) department. He presented with shortness of breath, wheezing and hyperventilation. He collapsed shortly after arrival and was immediately resuscitated. He was sent to the Intensive Care Unit (ICU) for further observation. Computer tomography (CT) scans (Figure 1) revealed edematous tissue at the posterior pharyngeal wall, and air-fluid level at pre-vertebral space until posterior mediastinum. Also noted was bilateral lung base infection. Despite aggressive treatment in the ICU, the patient died two day later. The cause of death was septic shock with hypoxic brain.

CASE REPORT 2

Mr AK, a 49 year-old, Malay man who presented with a fish bone stuck in his throat of one-week duration. The presenting symptoms were dysphagia, odynophagia and inter-scapula pain accompanied by fever for the past four days. Flexible laryngoscopy showed pooling of saliva at the hypopharynx but no foreign body was visible. He was admitted and started on intravenous antibiotics. CT scans (Figure 2) showed appearance of inflammation and possibly early abscess formation at the peri-esophageal, pre-vertebral space and posterior mediastinum region. No obvious foreign body seen. He was put under general anaesthesia and tracheostomy was done for an airway precaution. Direct laryngoscopy showed edematous mucosa and slough at right hypopharyngeal area. An esophagoscopy examination revealed edematous mucosa, slough and purulent discharge came through a fistula on the right wall of the esophagus 20cm from upper incisor. Neck exploration was proceeded with esophagoscope in-situ as a guide but no foreign body was found after extensive searching. The abscess in the para-pharyngeal space was evacuated and the patient commenced on Ryle's tube feeding and monitored in the ward. He was

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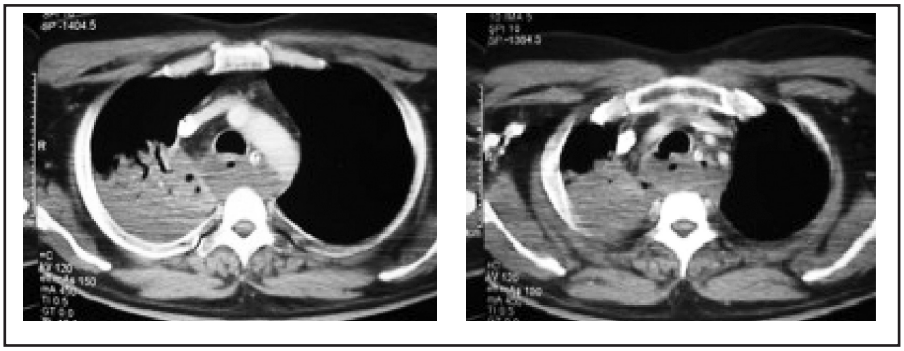

Fig. 1: CT scans of the thorax reveals diffuse edema with air-fluid cavity surrounding the thoracic esophagus

Fig. 2: CT scans of the root of the neck and thorax reveals peri-esophageal soft tissue edema with air-fluid cavities.

discharged well after a repeat CT scan about a month later showed resolution of the peri-esophageal and mediastinum inflammation.

DISCUSSION

Complications related to foreign body (FB) ingestion may be severe and life threatening. Some of the risk factors identified leading to complications are delayed presentations of more than two days after ingestion, FB seen on plain cervical radiography and FB impacted at the level of cricopharyngeus[3]. Majority of patients who have FB stuck in their esophagus gave positive histories of accidental swallowing of this substance while eating. If the esophagus had been perforated the mediastinitis will eventually develop. Normally this is a delayed presentation, which was noted in both cases presented here. An inter-scapula pain is a very significant clinical feature suggesting of mediastinitis or abscess formation. Other risk factors predicting the development of mediastinitis are old age, significant concurrent medical illness and chronic alcoholism. In suspected cases of mediastinitis a CT scan of the neck and thorax are mandatory, as this will clearly show the pathology compared to the plain lateral cervical radiography. CT scan provides more information regarding the site, relation of the abscess to the great vessels and the extension. On certain occasions it may disclose the position of the FB. But in both our cases, CT scan does not reveal any FB. Barium study is helpful to rule out the presence of fistula of the esophagus. Broad-spectrum intra-venous antibiotic should be started immediately. The timing for surgery is indicated once the presence of abscess and/or FB noted from the radiological studies. Rigid esophagoscopy examination under general anaesthesia is performed to inspect the presence of fistula and / or remove any FB presence in the lumen. Surgical neck exploration needs to be proceeded immediately after the esophagoscopy to evacuate the abscess and to remove migratory FB that confirmed on CT scan. In neck exploration, the para-pharyngeal space should be opened up down to the root of the neck. This will eased the abscess to be drained out from the mediastinum. In a place where the cardiothoracic team is available, it is helpful if they are to be involved in the management. Tracheostomy may indicate when there is a large mediastinal abscess to anticipate any airway complication. Serial CT scan is helpful to see the progress of the mediastinitis after the evacuation.

In conclusion when a patient presents a few days after FB ingestion with complaint of inter-scapula pain, there is a high possibility of mediastinitis as a result of esophageal perforation. CT scan is a mandatory investigative procedure prior to surgical intervention. Increased awareness of possible complications and prompt intervention may improve the clinical outcome for patients with risk factors.

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