Case Report

A Piercing Fish Bone Through Tracheal Wall

Mohamad A^{1,2}, Ahmad MZ², Mohamad I¹

Abstract

Fish bone ingestion is a common encounter in otorhinolaryngology setting. The patient usually present with foreign body sensation and odynophagia. Owing to its sharp end in nature, migration to the surrounding structures such as thyroid gland and neck muscles and have been reported. However the migration into the trachea is an extremely rare occurrence. We present a patient with fish bone ingestion which pierced into the trachea wall which was successfully removed via bronchoscopy.

Keywords: Fish bone ingestion, esophagoscopy, bronchoscopy

International Journal of Human and Health Sciences Vol. 02 No. 01 January'18 Page : 35-37

Introduction

Foreign body (FB) ingestion is a common clinical encounter in otolaryngology field, and the fish bone predominates list amongst adults(1). Common sites of impaction are the palatine tonsils, base of tongue, vallecula and pyriform fossa(2). In certain cases, they can get embedded into the esophageal wall and cause persistent odynophagia. These patients may seek immediate medical treatment. A small number of them may present with complications because of delayed presentation after they had sought traditional treatment(3). Besides that, delayed intervention can also occur in asymptomatic patients due to nature that most of the fish bones are radiolucent.

Case report

A 46-year-old man presented with pricking sensation in the neck, associated with odynophagia after taking a meal containing fish. He was seen

by a general surgeon in a private hospital whereby oesophagogastroduodenoscopy (OGDS) was done showed no foreign body seen in oropharynx and esophagus. He was prescribed with oral antibiotic and was given appointment in the subsequent 2 weeks' time. During follow up at similar hospital, he still complaining of odynophagia and throat discomfort. Computed tomograph (CT) scan of neck and thorax was done revealed foreign body resembling fish bone in trachea (Figure 1). Upon laryngoscopic examination, the epiglottis, arytenoid, aryepiglottic fold and vocal cord seemed normal. However there was presence of fish bone noted at the visualized subglottic region. He underwent bronchoscopy, foreign body removal and esophagoscopy at our centre. Intraoperatively, there was presence of fish bone piercing through the cricopharyngeus into the trachea (in between cricoid cartilage and the

1. Adam Mohamad, Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia & Department of Otorhinolaryngology, Hospital Tengku Ampuan Afzan, 25100 Kuantan, Pahang, Malaysia
2. Mohd Zaki Ahmad, Department of Otorhinolaryngology, Hospital Tengku Ampuan Afzan, 25100 Kuantan, Pahang, Malaysia
3. Irfan Mohamad, Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia

Correspondence to: Adam Mohamad, Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia Health Campus, 16150 Kota Bharu, Kelantan, Malaysia. & Department of Otorhinolaryngology, Hospital Tengku Ampuan Afzan, 25100 Kuantan, Pahang, Malaysia E-mail: persona522115@gmail.com

Figure 1: Axial view of CT scan shows a linear triangular radio-opacity in the trachea just below the tracheal cartilage (Arrow).

Figure 2: Fish bone seen at the subglottic region (Arrow).

Figure 3: Fish bone removed

first tracheal ring) (Figure 2, 3). Apart from that, there was laceration wound and slough at level of cricopharyngeus upon esophagoscopy. Post operatively, he was admitted to intensive care unit for 2 days for close observation and completion of intravenous dexamethasone 8 mg for 3 doses and amoxicillin-clavulanic acid 1.2 gram thrice daily. He was discharged home 5 days later.

Discussion

Fish bone is the commonest throat FB in otorhinolaryngology practice in adult Asian population(4). Most of patients presented within 24 hours post ingestion(5). Late presentation may be due to self-treatment at home where patients tried to swallow bolus of food to dislodge the FB or they prefer to seek traditional treatment first. Delay in treatment can lead to unwanted and serious complications(5). Sequelae such as perforation of pharynx, vocal cord fixation, migration of fish bone into common hepatic duct, transverse colon perforation and piercing migrated fish bone in the neck have been reported(6). Management of fish bone ingestion can be very straight forward, whereby it can be easily removed in clinic setting without any complication especially from the base of tongue, vallecula or in the palatine tonsil(4). Other sites of impaction include the pyriform fossa and epiglottis. In the alimentary tract, FB in the cricopharyngeus and other parts of the esophagus can be removed with a rigid or transnasalesophagoscopy.

In most of the time when surgical intervention failed to pick up any FB, the patient will be seen in the following week. In our case, the patient came at the expected time right after the ingestion of the FB, however the OGDS performed unfortunately revealed no fish bone or other FB. To the best of our knowledge, no similar case of fish bone migration by directly piercing into the tracheal wall has been reported. A detailed history, physical examination and plain neck radiograph aided by endoscopic examination are important adjuvants for diagnosis. The sensitivity and specificity of plain radiograph was reported as 39% and 72%(7). Thus, physicians should not rely on this modality alone to either confirm or rule out any suspected fish bone impaction(8). Persistence of symptoms is an indication for CT scan as it may become a reliable adjunct tool, whereby in a retrospective Japanese series reported the sensitivity for a CT to pick up the FB was 100%, as compared to the 44% for plain films(9).

In certain cases, they can get embedded into the

esophageal wall and cause persistent odynophagia. These patients may seek immediate medical treatment. A small number of them may present with complications because of delayed presentation after they had sought traditional treatment, but it also can cause bowel perforation which mandates surgical exploration. In view of the fish bone are radiolucent in most of the time, the diagnosis and decision for timing of the surgical intervention are often difficult(10).

In suspected complication or other negative investigative modalities, CT scan can be used as it is the best diagnostic tool for better detection of FB type, size, orientation, location and its relationship to other vital structures in the neck such as carotid artery, internal jugular vein, thyroid gland, thyroid cartilage, trachea and hyoid bone(10). In our case, the final diagnosis of migrated FB as well as the precise location were readily detected by CT scan. FB migration to extraluminal location can be caused by several factors. These include the

position and pointed shape of the fish bone(5), contraction of the cricopharyngeus muscle during deglutition(11), neck muscles movement, local inflammation at the esophageal or pharyngeal wall and direct pressure necrosis. In the management of migrating FB especially in lower part of gastrointestinal tract, many determinants should be taken into considerations. These include relevant intestinal anatomic and physiological considerations, the nature of FB and presence of symptoms or signs resulted from the FB(12). If there is possibility the complication such as bowel perforation anticipated, the surgeon should intervene early.

In conclusion, extra-esophageal migration of FB should be suspected especially when the patient having persistent symptoms despite normal endoscopic findings. As the FB can be radioluscent, CT scan should be performed besides to aid detection of a migrated FB.

Reference:

1. Nandi P, Ong G. Foreign body in the oesophagus: review of 2394 cases. *British Journal of surgery*. 1978;65(1):5-9.
2. Akazawa Y, Watanabe S, Nobukiyo S, Iwatake H, Seki Y, Umehara T, et al. The management of possible fishbone ingestion. *Auris Nasus Larynx*. 2004;31(4):413-6.
3. Johari HH, Khaw B-L, Yusof Z, Mohamad I. Migrating fish bone piercing the common carotid artery, thyroid gland and causing deep neck abscess. *World Journal of Clinical Cases*. 2016;4(11):375.
4. Yang S-W, Chen T-M, Chen T-A. Migrating fish bone complicating a deep neck abscess. *Chang Gung Med J*. 2005;28(12):872-4.
5. Chee LW, Sethi DS. Diagnostic and therapeutic approach to migrating foreign bodies. *Annals of Otolaryngology, Rhinology & Laryngology*. 1999;108(2):177-80.
6. Noor NM, Khalid NEA, Ali MH, Numpang ADA, editors. Fish bone impaction using adaptive histogram equalization (ahe). *Computer Research and Development, 2010 Second International Conference On*; 2010: IEEE.
7. Lue AJ, Fang WD, Manolidis S. Use of plain radiography and computed tomography to identify fish bone foreign bodies. *Otolaryngology—Head and Neck Surgery*. 2000;123(4):435-8.
8. Herranz-Gonzalez J, Martinez-Vidal J, Garcia-Sarandeses A, Vazquez-Barro C. Esophageal foreign bodies in adults. *Otolaryngology—Head and Neck Surgery*. 1991;105(5):649-54.
9. Watanabe K-i, Kikuchi T, Katori Y, Fujiwara H, Sugita R, Takasaka T, et al. The usefulness of computed tomography in the diagnosis of impacted fish bones in the oesophagus. *The Journal of Laryngology & Otology*. 1998;112(4):360-4.
10. Ngan J, Fok PJ, Lai E, Branicki FJ, Wong J. A prospective study on fish bone ingestion. Experience of 358 patients. *Annals of surgery*. 1990;211(4):459.
11. Coret A, Heyman Z, Bendet E, Amitai M, Itzhak I, Kronberg J. Thyroid abscess resulting from transesophageal migration of a fish bone: ultrasound appearance. *Journal of Clinical Ultrasound*. 1993;21(2):152-4.
12. Lyons LMF, Tsuchida LAM. Foreign bodies of the gastrointestinal tract. *Medical Clinics of North America*. 1993;77(5):1101-14.