

CASE REPORT

Migrating Fish Bone in the Neck Complicated with Neck Abscess

Tze Liang Loh¹, Adillah Lamry²

ABSTRACT

Accidental ingestion of fish bone followed by impaction within the upper aerodigestive tract is commonly seen in the practice of otorhinolaryngology (ORL) in Asia. When an impacted fish bone is not removed in a timely manner, a relatively unusual phenomenon of a migrating fish bone may occur leading to complications. We hereby present a case of migrating fish bone in a 42-year-old Chinese gentleman, which was complicated by an anterior neck abscess. He presented with the chief complaint of an anterior neck swelling associated with pus discharge and a preceding history of fish bone ingestion 3 weeks ago. Computed tomography (CT) scan of the neck revealed an anterior neck subcutaneous collection with a linear hyperdense foreign body seen within it. He subsequently underwent neck exploration surgery whereby the collection was drained and a long sharp serrated fish bone from within the collection was removed.

Keywords: Abscess, Foreign body, Neck.

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CASE DESCRIPTION

A 42-year-old Chinese gentleman with no known medical illness presented to otorhinolaryngology (ORL) clinic with complaint of an anterior neck swelling. It was preceded with history of accidental ingestion of stingray bone 3 weeks ago. After ingestion, the patient felt sharp pricking pain over the throat and he attempted to dislodge the fish bone by consuming boluses of rice and pushing the foreign body using his fingers. Eventually, the pain resolved after few days, followed by swelling of the neck 1 week later. The swelling increased in size over a period of 2 weeks and was associated with pus discharge. There was no dysphagia or shortness of breath.

Clinically, there was anterior neck swelling measuring 7 × 6 cm (Fig. 1), extending from the level of hyoid region to level of thyroid cartilage. It was erythematous and tender, with small punctum discharging pus upon palpation. Nasopharyngolaryngoscopy was done, which shows normal findings with no evidence of trauma or fistula over upper aerodigestive tract.



Fig. 1: Anterior neck swelling with small punctum discharging pus

¹Department of Otorhinolaryngology, Head and Neck Surgery, Hospital Pengajar University Putra Malaysia, Serdang, Malaysia

²Department of Otorhinolaryngology, Hospital Sultan Ismail, Johor Bharu, Johor, Malaysia

Corresponding Author: Tze Liang Loh, Department of Otorhinolaryngology, Head and Neck Surgery, Hospital Pengajar University Putra Malaysia, Serdang, Malaysia, Phone: +60122295506, e-mail: tz3_liang@yahoo.com

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The total white cell count was elevated. Lateral neck radiograph showed only soft tissue swelling with no obvious foreign body seen. In view of the history of fish bone ingestion, a computed tomography (CT) of the neck was ordered and it revealed a rim enhancing collection from level of thyroid cartilage to level of thyroid isthmus measuring 3.1 × 4.3 × 4.7 cm with a linear hypodense foreign body 2.6 cm in length within the collection (Fig. 2). Neck exploration for foreign body removal and drainage of abscess under general anesthesia was performed with 10 mL of frank pus evacuated. A serrated fish bone was found transversing the abscess cavity toward the skin (Fig. 3). The fish bone was removed (Fig. 4) and wound irrigated with copious amount of diluted povidone followed by warm saline. The patient was discharged well on postoperative day 1 with daily dressing done at local clinic. He recovered well, and the wound eventually closed after 2 weeks.

DISCUSSION

A number of South East Asia countries are of tropical climate, surrounded by vast area of sea. Fish is therefore an easily available

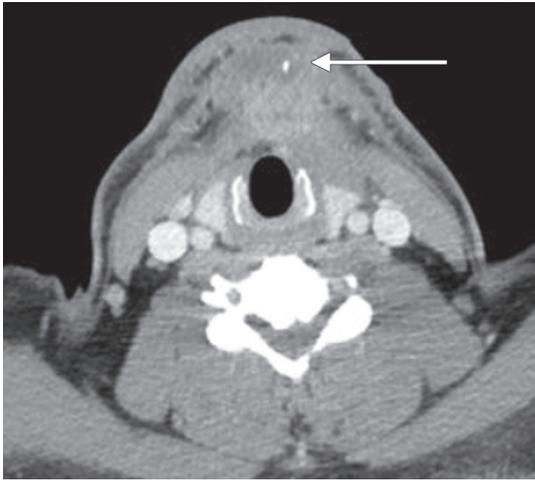


Fig. 2: Axial image of CT neck showing a foreign body inside and abscess collection (white arrow)



Fig. 3: Intraoperative picture of fish bone within abscess cavity



Fig. 4: Serrated fish bone after removal in operation theater

and relatively cheap protein source; it is consumed regularly by the majority of population. Contrary to their western counterparts who generally prefer filleted fish, Asians in general prefer whole cooked

fish. Thus, it is no wonder that most cases of accidental foreign body ingestion in this part of the world involve fish bones.¹ Often, the fish bone is lodged in the palatine tonsils, base of tongue, and vallecula.² Less frequently, it is lodged in the hypopharynx or esophagus. A diagnosis of fish bone lodged within the upper aerodigestive tract is made when there is a suggestive history of immediate foreign body sensation associated with sharp pricking pain during meals, worsened by swallowing. If the fish bone is seen by direct visualization, it can be removed using forceps. However, if the fish bone has already passed beyond the area of direct visualization, endoscopic removal would be the most appropriate method to remove it.^{2,3} A rigid 70° angled endoscope can be passed via the oral cavity into the oropharynx to visualize the hypopharynx, and visualized fish bone is removed using forceps. Alternatively, a flexible endoscope with a working channel can be passed into the nose to visualize the aforementioned area and remove any fish bone seen with a grasping mini-forceps. If no fish bone is visualized, it may be lodged in the esophagus, especially if the patient points out that the foreign body sensation is felt in the neck inferior to hyoid bone. A soft tissue lateral neck radiograph can be helpful in such cases. Abnormal linear density, loss of cervical lordosis, increased prevertebral soft tissue thickness, and column of air within upper esophagus are signs that would suggest the presence of an impacted fish bone. Lue et al. reported a sensitivity and specificity of 39 and 72%, respectively, for plain radiographs to identify fish bone foreign bodies.⁴ Fish bone that is lodged in the esophagus would require removal under general anesthesia by performing a rigid esophagoscopy.

Foreign body penetrating the upper digestive tract and migrating elsewhere is relatively rare.^{5,6} It has been reported that foreign body migration leading to symptoms can occur as early as 24 hours after ingestion⁶ or it may take up to weeks or months.⁷ This is true for our case, and as such, a high index of suspicion is required. Majority of migrated foreign body occurs with linear, sharp-ended fish bones.^{5,6,8,9} The horizontal orientation of the fish bones favors it to migrate extraluminally in the path of least resistance.⁵ More irregularly shaped foreign body like chicken bones is less likely to migrate through the soft tissue.¹⁰ In our case, the stingray fish bone was in horizontal position, coupled with its serrated edges and pointed end, leading it to migrate into anterior part of the neck and subsequently to subcutaneous tissue. The exact mechanism of how a foreign body can migrate extraluminally from the aerodigestive tract is not known. However, we would presume that the fish bone was initially lodged at the base of tongue, and subsequent movement of the muscles of the tongue base coupled with the serrated nature of the fish bone would have resulted in a one-way migration of the fish bone anteriorly toward the anterior neck region, followed by eventual abscess formation. Migrated fish bones have been found in the thyroid gland, retropharyngeal space, parapharyngeal space, piercing the carotid artery, and even causing fatal aortic-esophageal fistula.^{7,11,12}

In this case, the fish bone was not seen on lateral neck radiograph, but due to high suspicion of foreign body, we proceeded with CT scan of the neck. CT scan is the modality of choice as it can give the information on size, type, location, orientation of foreign body, and the relationship of foreign body to other vital structures of the neck.⁵ These landmarks are useful in guiding surgeons to remove the foreign body successfully. Surgical exploration in such a case consists of removal of offending object which is the fish bone, followed by evacuation of collected pus

in the same setting. The cavity must be carefully inspected for any residual tract or fistula. Impacted fish bone is challenging to remove especially when it has migrated deep into the neck and can potentially cause significant complications if not diagnosed and treated in a timely manner.

ORCID

Tze Liang Loh  <https://orcid.org/0000-0002-7363-4958>

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