Case report

The travelling fish bone: Migrated pharyngeal foreign body to the prevertebral muscle

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A B S T R A C T

Foreign bodies that are impacted in the upper aerodigestive tract are often encountered in a day to day ENT practice. Most of them could usually be removed in a clinic setting but some may require comprehensive imaging and surgery to extricate them. This paper depicts a patient’s self-induced traumatic attempt to remove a huge serrated fish bone that was lodged at the hypopharynx which made its way to the prevertebral soft tissue space compelling an open surgical procedure with neck exploration for definitive treatment.

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1. Introduction

Impaction of foreign bodies in the upper aerodigestive tract is a serious condition in ENT practice; if left untreated, it can lead to potentially fatal complications including retropharyngeal or prevertebral abcesses, mediastinitis and tracheoesophageal fistula which may cause septicemia and shock. If a patient presents early to an ENT setting without prior tampering or blindly attempting to remove it, it could most of the time be removed endoscopically but this may not always be the case.

2. Case report

A 66-year-old female patient was presented to the emergency department of a local district hospital with severe symptoms of dysphagia and diffuse anterior and posterior neck pain with limited and fixed range of motion of the neck after a day’s history of ingesting a large fish bone. A radiograph of the lateral neck revealed a fish bone at the level of the 4th and 5th cervical vertebrae and she underwent a flexible nasopharyngolaryngoscopy in the clinic for diagnostic and therapeutic reasons; unfortunately, there was no pooling of saliva and no foreign body was seen.

Further history revealed that upon ingestion of the fish bone, the patient was vigorously attempting to swallow and push the foreign body down by gouging and stuffing her mouth with large boluses of rice prior to seeking medical attention. As there was widening of prevertebral space from the neck X-ray with increasing pain at the neck, a computed tomography (CT) scan was performed. From the CT scan the foreign body was visualised in the prevertebral soft tissue space from the midpoint of the C4 vertebral body extending inferiorly towards the left side of the C5 vertebral body. No CT evidence of retropharyngeal collection or abcess was present (Fig. 1).

She underwent removal of foreign body under general anaesthesia in view of the location. The surgeon performed an initial neck exploration but could not locate the fishbone. A CT 3D reconstruction (Fig. 1) was performed to relocate the fish bone with skin marking prior to transfer to a tertiary centre for further exploration.

Further neck exploration at a tertiary centre, with extension of the previous incision posteriorly, retraction of the sternocleidomastoid muscle and carotid sheath posteriorly, the fish bone was found piercing through the prevertebral muscles most likely the longus colli muscle (Fig. 2). The fish bone was removed. Fortunately, there were no injuries noted at the neighbouring vital structures. Postoperatively she was well without any complications and was discharged on the third day. Her follow-up a week after surgery was uneventful.

3. Discussion

Foreign bodies that are lodged in the upper aerodigestive tract which are most common in South-East Asian regions are fish bones, because fish are prepared and cooked as a whole with bones, compared to the western countries where fish are cooked
in the form of fillets or patties. The number of ingested foreign bodies that perforated the upper gastrointestinal tract is small and the incidence of foreign body that migrated extraluminally is rare. Chee and Sethi\textsuperscript{1} reported the largest series of 24 migrated foreign bodies in the neck. They noted that 18 (75\%) of these objects had been removed within 24 h. All of the foreign bodies in their series were sharp and linear. In the series published by Remsen et al.\textsuperscript{2}, out of the 321 cases of penetrating foreign bodies reviewed, only 43 were found extraluminally.

The nature by which these foreign bodies propel through the delicate tissues of the neck is not known but rather it has been proposed to be because of a sequence of esophageal peristalsis and neck movements with the combination of carotid pulsations. Tissue response to the foreign body, abscess and infection could likewise have an impact in propulsion extraluminally. Some Asians believe that gulping some rice will push the foreign body into the stomach which was what the patient attempted. Whether this practice will increase the prospect of foreign bodies migrating extraluminally remains debatable.

Usually a plain X-ray is used to affirm the diagnosis of an ingested fish bone, but it is challenging to tell if it has migrated extraluminally. In our case, an urgent plain CT scan was done but it was difficult to determine the fish bone's distance and orientation. Lue et al.\textsuperscript{3} reported a sensitivity and specificity of 39\% and 72\%, respectively, for their plain radiographs to identify fish bone.

Fig. 1. Plain lateral neck X-ray showed fish bone at C4-C5 region as well as CT scans (axial & 3D reconstruction views) revealed fish bone traversing adjacent to the C4-C5 vertebral body.

Fig. 2. Intraoperative view of the wide surgical field to retrieve the serrated fish bone which has pierced the pre-vertebral muscles.
foreign bodies. A CT scan of the neck utilizes extra fine cuts of 1 mm of choice and is invaluable in confirming the presence of the foreign body.\textsuperscript{1} Yoo et al.\textsuperscript{4} proposed that the axial CT image or 3D images are both useful and best for calculating distance, shape, size, location and orientation from the reference point.

Potentially fatal complications may arise depending on the direction and site of the migrating fish bone. In our case, the patient was fortunate that the fish bone did not pierce or damage vital structures of the neck despite vigorous attempts to swallow the fish bone. The shape of the foreign body is the most important factor in the pathology of migration.\textsuperscript{5,6} The literature describes saw-toothed fish bones (Fig. 3) as being capable of penetrating deeper into the retropharyngeal space. The fixed and limited movements of the neck together with diffuse posterior neck pain in our patient could have been due to the inflammation of surrounding tissues around the longus colli muscle to where the fish bone has travelled and lodged.

4. Conclusion

Good clinical judgement is needed to diagnose a migrating foreign body. Early intervention should be taken if a foreign body is not located endoscopically and suspected extraluminally. Exploration for a migrated foreign body has been described by some otolaryngologists to be like finding a needle in a haystack. Our case report would help to create an understanding of these conditions and therefore a CT scan, be it plain, contrasted or with 3D reconstruction is useful in locating such foreign bodies preoperatively.

Fig. 3. Serrated fish bone measuring 4.4 cm.

References