Migration of Foreign Bodies from the Upper Digestive Tract: A Case Series

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Fish bones are considered to be sharp foreign bodies and can penetrate the digestive tract. These penetrations are rarely observed but can pose serious complications when they happen. We present two case studies where ingested fish bones were found to have migrated from the upper digestive tract to the retropharyngeal area. Initial examinations and endoscopies of the neck returned negative results. The subsequent computed tomography scans documented the locations of the fish bones. Surgical neck explorations were performed via a lateral neck incision and the fish bones were successfully removed from the patients.

Keywords: Foreign body, Migration, Neck

Case Report

The accidental ingestion of foreign bodies is a common problem that is handled by the emergency departments in hospitals and in otolaryngology outpatient clinics. Foreign bodies entering the upper digestive tract can cause mild to serious complications ranging from tenderness or an irritation of the pharynx, infections, abscesses, esophageal perforations, and may even cause mediastinitis with an unfortunate outcome of death(1-4). Fish bones constitute more than 85% of all ingested foreign bodies(5). The penetration of the foreign bodies extra-luminally from the upper digestive tract and their migration to surrounding structures is a rare condition. The ingestion of foreign body has caused gastrointestinal perforation in less than one percent of investigated patients(6) because foreign body tend to be naturally excreted from the body(7-9).

The common sites for fish bones afflicting injuries are at the base of the tongue, the palatine tonsils, the vallecula, and the upper oesophagus(10). Most foreign bodies can be found by a thorough history taking and physical examination. The history obtained from children or mentally impaired patients may be unreliable. The possibility that foreign body may be ingested should always be kept in mind, though the foreign body can be located by physical examinations in most cases. The physicians may need to use diagnostic tools such as radiography, barium ingestion coupled with radiography, computed tomography (CT) or endoscopy if history taking and physical examinations are inconclusive in achieving locating a foreign body. An imaging tool such as plain radiography or a CT scan of the neck is an essential tool for confirming the presence of the foreign bodies and locating them accurately. Negative rigid or flexible endoscopies that show ulcerative lesions with surrounding oedematous mucosa may also indicate a possibility of foreign body migration.

The removal of an oropharyngeal foreign body is usually done in an office setting under local anesthesia. Most of these cases can be easily treated without major complications. However, a minor portion of the cases need general anesthesia, such as the case of huge foreign body or sharp foreign bodies that have penetrated out of the digestive tract lumen. There have been a few reports of the migration of the foreign bodies from the upper digestive tract. We report two such unusual cases with a review of the literature.

Ethical approval

This case-series study received the approval from the Ethics Committee for Human Research, Khon Kaen University: project No. HE581262.
Case Report

Case 1

A 63-year-old man was referred to our university hospital for his persisting throat complaints from a local hospital. Referral letter and history taking revealed his seven months suffering since accidentally swallowing fish bone. He experienced a sensation of foreign body and stabbing throat pain immediately after the meal. His self-attempts to remove the fish bone failed before consulting a general practitioner who prescribed him antibiotics. However, the symptoms remained. A month after the man visited a local hospital for lingering odynophagia and was treated for bacterial pharyngitis for two weeks without success.

A re-examination of his throat by the same hospital physician divulged swollen right posterior pharyngeal area. Further investigations with a CT scan of the neck displayed a tubular shaped calcified lesion approximately 1.4 centimeters long at the right side of the prevertebral space, posterior to the right pyriform sinus (Fig. 1). He underwent laryngoscopy and esophagoscopy under general anesthesia, but nothing was found in the upper digestive tract. The physician from the local hospital then decided to refer this case to our university hospital.

The man was clinically stable with a body temperature (BT) of 37.6°C, a pulse rate (PR) of 68 bpm, a respiration rate (RR) of 20 tpm and a blood pressure (BP) of 154/97 mmHg with no underlying disease. He was admitted as an in-patient for further management. We examined his throat by using the fiber optic laryngoscope and found a white-colored plaque at the right posterior pharyngeal wall. The fiber optic laryngoscopy did not find the fish bone. We decided to explore his neck under general anesthesia.

To make sure that there were no foreign bodies in the upper digestive tract, we conducted laryngoscopy and esophagoscopy examinations before surgery. The foreign body was not seen in the lumen. We explored the neck by a lateral neck incision on the right side of the neck displayed a tubular shaped calcified lesion approximately 1.4 centimeters long at the right side of the prevertebral space, posterior to the right pyriform sinus (Fig. 1). He underwent laryngoscopy and esophagoscopy under general anesthesia, but nothing was found in the upper digestive tract. The physician from the local hospital then decided to refer this case to our university hospital.

The patient exhibited signs of malaise and high temperature. He was unable to eat due to the odynophagia. The vital signs were BT 38.0°C, PR 90 beats per minute, RR 20 times per minute, and BP 156/78 mmHg. Routine physical examination revealed a tender point at the right side of his neck around the cricoid level. A flexible fiberoptic endoscopy was performed. The tongue base, vallecular, epiglottis, posterior pharyngeal wall, larynx, and vocal cords all appeared normal.

The patient underwent a neck exploration under general anesthesia. A lateral neck incision was made. We found a fish bone at the post-cricoid level in the pre-vertebral muscle with approximately 2 cc of pus. After the operation, an intravenous antibiotic was given. The fever was gone by the third day. The patient was then discharged without further complications.

Discussion

The lodging of fish bones in the upper aerodigestive tract is a commonly encountered problem. A thorough oral examination, reflex mirrors, and fiber optic laryngoscopies are routine procedures used for identifying and removing foreign bodies. In cases with negative findings, lateral neck radiographies and rigid or flexible esophagoscopies are the most common procedures for identifying suspected oesophageal impaction(11).

The examiner must keep in mind the possibility of foreign body perforating the surrounding structures from the digestive tract. A history of ingesting the foreign bodies and the persistent pain experienced even after adequate treatment with antibiotics is the most
digital technology, which yield a better visualization and a better precision(13). The use of digital radiography as a diagnostic tool for identifying fish bones that are lodged in the throat may help to decrease unnecessary endoscopy and CT procedures.

The CT scan is the most frequently used investigation of choice. When the office-based examination or fiber-optic endoscopy fails to identify a foreign body, a CT scan is useful for determining the exact location of the foreign body and its relationship to the vital structures in the neck, and it allows the surgeon to locate the foreign body during an exploration of the neck(14).

The manipulation of the rigid endoscopy procedure under general anesthesia may further compress the fish bone from the esophageal lumen and speed up its extrapharyngeal migration. Although rigid endoscopy is a widely used technique for removal of foreign bodies in the airway and oesophagus, with a very high success rate and a very low complication rate, it is also a cause of death in patients(15). Clear visual fields and delicate manipulation are key points for a successful rigid endoscopy. Before pushing the endoscope forward, the saliva should be sucked out and the mucosa checked carefully to avoid missing submucosal foreign bodies or compressing them further(11).

Leaving foreign bodies in the neck can result in acute complications such as deep neck infection, mediastinitis or vascular complications, which can all increase morbidity or even mortality. A fever also suggests the possibility of complications caused by infections. In the second case, the patient exhibited signs of a fever and an abscess was found around the foreign body.

**Conclusion**

We present a case series of foreign bodies migrating from the upper digestive tract. Our case series would help to increase the awareness of these conditions. In the event that a conventional endoscopy procedure is unable to find the foreign body, the CT scan is useful for ruling out the penetrating foreign bodies.

**What is already known on this topic?**

The lodging of fish bones in the upper aerodigestive tract is a commonly encountered problem. A thorough oral examination, reflex mirrors, and fiber optic laryngoscopies are common procedures used for identifying and removing foreign bodies.
What this study adds?

The examiner must keep in mind the possibility of foreign body perforations from the digestive tract.

The CT scan is useful for ruling out the penetrating foreign bodies.

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Potential conflicts of interest

None.

References

สิ่งแปลกปลอมหรือสูตรอาหารส่วนบุคคล - การศึกษาในผู้ป่วยหลอดอาหาร

กรีมทองธัย, วิสุทธิ์ วีร์พืชคู่

ภาวะที่มีพฤติกรรมที่มีสิ่งแปลกปลอมและสูตรอาหารส่วนบุคคลของผู้ป่วยได้ ภาวะนี้พบได้ไม่แย่จนทำให้เกิดความผิดหวังหรือไม่ยอมรับกลั่นกลืน ผู้ป่วยมักพบผู้ป่วยมีอาการที่รับประทานได้ไม่แน่นอนแต่ดีใจในลักษณะ คอมพิวเตอร์ที่มีกลิ่นกลืนอาจทำให้ผู้ป่วยรู้สึกไม่หายใจได้ เมื่อสิ่งแปลกปลอมในอาหารส่วนบุคคลของผู้ป่วยที่ต้องการให้การดีต่อไปในที่ผ่านมาอาจมีผลกระทบต่อสิ่งแปลกปลอมในอาหารส่วนบุคคลในผู้ป่วยหลอดอาหารได้สิ่งแวดล้อม

แพทย์สามารถมีการปรึกษาในลักษณะที่ผู้ป่วยที่ต้องการให้การดีต่อไปในที่ผ่านมาอาจมีผลกระทบต่อสิ่งแปลกปลอมในอาหารส่วนบุคคลในผู้ป่วยหลอดอาหารได้สิ่งแวดล้อม