Lateral thyroid cartilage thyrotomy approach to an embedded paraglottic fishbone

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ABSTRACT

Fishbones are of particular interest to otolaryngologists. Most fishbones can be removed transorally or via endoscopic guidance. Transcervical neck exploration is occasionally necessary, especially in cases of an embedded foreign body. Computed tomography is the most sensitive and specific imaging modality for identifying embedded fishbones. To our knowledge, this is the first reported case of a laryngeal foreign body embedded in the paraglottic space that was removed using an open approach via a lateral thyroid cartilage window.

KEYWORDS

Foreign body – Thyroid cartilage – Glottis

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Fishbones are of particular interest to otolaryngologists as accidental ingestion is among the most common reasons for otolaryngology related emergency department referrals.¹ Most fishbones can be removed transorally or via endoscopic guidance. In approximately 15% of adult cases, fishbone removal under general anaesthesia via rigid laryngoscopy is required.

Transcervical neck exploration is occasionally necessary, especially in cases of an embedded foreign body. To our knowledge, this is the first reported case of a laryngeal foreign body embedded in the paraglottic space that was removed using an open approach via a lateral thyroid cartilage window.

Case history

A 62-year-old man with hypertension and stented triple vessel disease complained of having had voice changes, odynophagia, dysphagia and a foreign body sensation for the previous 3 weeks. He recalled possibly ingesting a fishbone prior to the onset of his symptoms. However, he did not seek treatment at the time of the incident as the symptoms were mild. On examination, there was no swelling of the neck. There was mild tenderness with palpation of the right thyroid region. Fibreoptic laryngoscopy showed reduced right-sided vocal cord mobility as well as an oedematous arytenoid and false cord on the right side. No pooling of saliva was noted in the pyriform fossa and no foreign body could be visualised.

A lateral neck x-ray was performed and no foreign body could be clearly seen. Computed tomography (CT) was

performed and showed a linear hyperdense foreign body embedded in the right paraglottic muscle, medial to the thyroid cartilage, with surrounding soft tissue oedema. There was no abscess (Fig 1).

The patient underwent a direct laryngoscopic examination, which showed an oedematous false cord and arytenoid. Exploration was performed using the microlaryngeal technique; however, endoscopy failed. Following this, neck exploration was carried out via an external approach. A horizontal skin crease incision was made over the middle of

Figure 1 Axial computed tomography showing a dense linear foreign body situated medially to the thyroid cartilage

Figure 2 Intraoperative photo taken with an endoscope showing the right thyroid cartilage region, with artery forceps pointing to the foreign body in the paraglottic muscle. (The white arrow indicates the thyroid notch.)

the thyroid cartilage. A subplatysmal flap was raised and the laryngeal framework exposed. A rectangular thyroid cartilage window was then created and the inner perichondrium of the thyroid cartilage was cut to explore the muscle. The foreign body, which measured approximately 4cm, was embedded in the muscle (Fig 2). After removing the foreign body, the perichondrium was sutured with Vicryl® (Ethicon, Somerville, NJ, US) and the wound was closed after placing a drain. The patient was extubated immediately after surgery and exhibited no stridor. Postoperatively, he was discharged home.

Discussion

Fishbone ingestion is a common problem seen by otorhinolaryngologists. Most cases are fairly straightforward with respect to their management. However, in cases of an embedded foreign body, patients sometimes undergo extensive investigations and multiple procedures in an effort to locate and remove the foreign body. It is believed that pharyngolaryngeal movement during swallowing allows the

foreign body to migrate from the site of mucosal entry to a deeper location in the muscle.²

CT is the most sensitive and specific imaging modality for identifying fishbones.⁵ Lateral neck x-rays are less sensitive, especially in cases in which the foreign body is located near the larynx as laryngeal cartilage calcification and mixed density tissues often make foreign body difficult to demonstrate.⁴ In our case, CT clearly showed the foreign body. However, the lateral neck x-ray was inconclusive. CT is therefore recommended as the gold standard investigation for patients suspected of having a foreign body with indeterminate x-ray findings.

Foreign bodies in the airway are often removed using endoscopic techniques. Although the vast majority of foreign bodies can be removed endoscopically, this is not possible in all cases⁵ and neck exploration may be required. For patients in whom the foreign body is difficult to find intraoperatively, an image intensifier or intraoperative ultrasonography can be of great help.⁵ Lupo *et al* discussed the laryngofissure technique and agreed that a lateral window approach can be used in certain scenarios.⁵

In our case, the lateral thyroid cartilage window approach was chosen to avoid injuring the anterior commissure, which may have led to a need for a tracheostomy and keel insertion. In addition, the fishbone was confined to the right side.

Conclusions

Fishbone ingestion is a common entity faced by otorhinolaryngologists. Fishbones that have become embedded in or migrated deeper into muscles pose a challenge to clinicians managing these cases. CT remains the most specific and sensitive imaging modality for identifying fishbones, most of which can be removed endoscopically. In certain cases, an external transcervical approach may be needed. Lateral thyroid cartilage thyrotomy is a good and safe option for a paraglottic foreign body embedded medially to the thyroid cartilage.

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