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Short Communications

Nasendoscopy guided removal of fish bones from the base of tongue and the vallecula

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Abstract
Impaction of a fish bone at the base of tongue or the vallecula is a very common problem. Removal of the bone from these sites without a general anaesthesia can be challenging to surgeons and patients alike. Various manoeuvres to facilitate this procedure have been described, some are very successful but may require specialized instruments, while others may cause excessive discomfort to the patients and even inadvertent dislodgement of the bone. We describe a method using a flexible fibreoptic nasendoscope to provide a visual guide in order to facilitate peroral removal of the bone with a pair of forceps. This method is well tolerated by patients and avoids the need for a general anaesthesia in many cases.

Key words: Foreign bodies; Tongue; Oropharynx

Introduction

The commonest foreign bodies to be lodged in the pharynx are fish bones. The great majority of these are impacted in the tonsils and most of the rest in the base of tongue and vallecula (Nandi and Ong, 1978; Phillips and Patel, 1988; Ngan *et al.*, 1990; Jones *et al.*, 1991). Clinical examination is of paramount importance in the diagnosis of an impacted fish bone as X-rays may be unreliable and are often difficult to interpret (Carr, 1987; Jones *et al.*, 1991; Ell and Parker, 1992). Fish bones which are lodged in the tonsils are usually clinically obvious and are easily removed perorally under direct vision. Those at the base of tongue and the valleculla are generally less accessible and usually require indirect laryngoscopy for detection. In cases where indirect laryngoscopy fails to show a fish bone but clinical suspicion remains high, flexible fibreoptic nasendoscopy is recommended as it provides an excellent view of the hypopharynx and also allows a prolonged and unhurried examination of the area. It is not uncommon for a fish bone to be missed on initial indirect laryngoscopic examination only to be subsequently identified nasendoscopically (Jones *et al.*, 1991). This is particularly true of a small translucent bone which shows up better using the close, magnified and illuminated view of a nasendoscope. Nasendoscopy is also indicated in patients who are unable to tolerate indirect laryngoscopy due to a strong gag reflex.

In addition to aiding the detection of a fish bone, we have found flexible nasendoscopy a useful visual guide for peroral removal of the bone with a pair of forceps. We have successfully removed a number of fish bones and other foreign bodies from the base of tongue and the vallecula using this technique in patients who would otherwise have required a general anaesthesia for the purpose. The method is essentially a simple extension of a skill familiar to most otolaryngologists and is extremely well tolerated by patients (even those with a strong gag reflex).

Technique

A preliminary indirect laryngoscopy is performed to confirm the site of impaction of the bone. If the bone is found at the base of tongue or the vallecula but is not readily removable, or if it is not detectable on indirect laryngoscopy but clinical suspicion remains high, then the

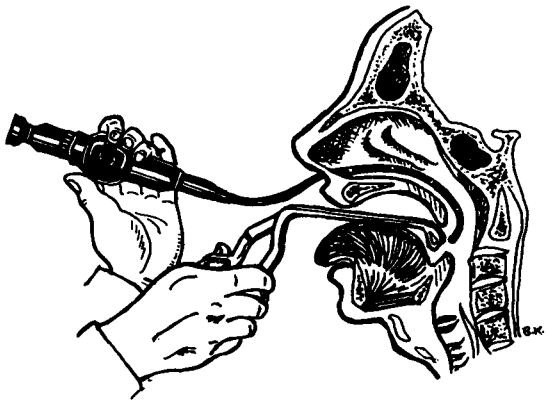

FIG. 1
Demonstration of the positions of the nasendoscope and the forceps during removal of a base of tongue or vallecular foreign body.

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patient is prepared for nasendoscopy. The oropharynx and the hypopharynx are sprayed with xylocaine and the wider of the nasal passages is sprayed with 10 per cent cocaine.

With the patient sitting, a well lubricated flexible fibreoptic nasendoscope is passed until a good view of the tongue base is obtained. The patient is instructed to protrude his tongue and hold it in a gauze swab thus widening the vallecula and elevating the base of tongue to make the bone stand out more proudly. The help of an assistant is required at this stage to steady the nasendoscope against the columella so that the operator has one hand free to use the forceps. A pair of McGill forceps is inserted through the mouth until the tips are just visible through the nasendoscope (Figure 1). The bone is then grasped with the forceps and gently dislodged and removed from the mouth.

Discussion

Various techniques for the removal of fish bones from the base of the tongue and the vallecula have been described. Traditionally, the bone is identified and removed perorally with the aid of a laryngeal mirror and indirect laryngoscopy. This requires patience and skill from the surgeon and a good level of tolerance from the patient. Although successful in most cases, there still remains a group of patients in whom this procedure is impossible because of a strong gag reflex or anatomical difficulties. Removal of the bone (with the patient awake) under direct vision using a Macintosh or McGill laryngoscope with the patient in the 'intubation' position is also used with success. However, this procedure may be difficult to perform in patients with cervical spondylosis and carries a small risk of damage to the teeth. Some patients may find the 'intubation' position extremely uncomfortable and the procedure difficult to tolerate. Without the aid of fibreoptic instruments, removal of the bone under a general anaesthesia through a rigid pharyngoscope or laryngoscope is usually necessary if all methods fail with the patient awake.

The advent of flexible fibreoptic endoscopes has added a new dimension to the management options for foreign bodies in the throat. Ngan *et al.* (1990) described the use of a flexible gastroscope to identify fish bones in the oropharynx and the hypopharynx, and also their removal with biopsy forceps passed through the biopsy channel of the gastroscope. However, the design of a gastroscope is not ideal for this purpose due to its large external diameter and transoral route of insertion causing a high degree of gag reflex and throat discomfort. In addition, the incidence of inadvertant dislodgement of hypopharyngeal fish bones using this method is as high as 28 per cent.

Choy *et al.* (1992) described a more superior method using a nasendoscope with a biopsy forceps channel. Here the biopsy nasendoscope is passed in the usual way and the fish bone is removed using the biopsy forceps. This method appears to be effective but does require specialized instruments which may not be readily available in a standard Otolaryngology Department. Due to the addition of a biopsy channel, the external diameter of the biopsy nasendoscope (5.9 mm) is much wider than that of a standard nasendoscope (3.4 mm) and may therefore cause more discomfort to the patients during insertion and also be more difficult to pass through a narrow nasal passage.

The technique described here is in our experience simple to perform, effective and well tolerated by patients. We recommend this technique for the removal of a base of tongue or vallecular foreign body if it is not readily removable using indirect laryngoscopy, and before contemplating removal under general anaesthesia.

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