Introduction

Wire bristles are an unusual foreign body, and they have only been described in a handful of case reports. This foreign body presents insidiously and is difficult to extract. We present our experience with wire bristle oropharyngeal and esophageal foreign body removal, as well as a new technique for extraction using a tool familiar to otolaryngologists, the coblator.

Materials and Methods

Three cases of oropharyngeal wire bristles were identified between 2009 and 2011 at our tertiary academic medical center. These cases were reviewed retrospectively and described in this report.

Case 1

A 43-year-old female presented with progressive neck and back pain. A computed tomography (CT) scan demonstrated a neck mass, with possibly a foreign body reaction surrounding a metal object. Upper esophageal endoscopy was performed, but no lesion or object was found. Neck exploration was subsequently performed, during which a metallic object was discovered periesophageally surrounded by abscess. The wound was thoroughly irrigated and closed over a Penrose drain. Her neck wound healed well, and her neck and back pain subsided.

Case 2

A 12-year-old female presented with odynophagia and foreign body sensation after eating at a barbecue. CT demonstrated a linear radiopaque foreign body at the level of the base of tongue (Figure 1). Direct laryngoscopy and rigid esophagoscopy were performed. The wire bristle was identified and briefly grasped, but was subsequently released and lost.

A second CT scan was performed, revealing a persistent radiopaque foreign body deeper within the lingual tonsil (Figure 2). Once again, the patient was brought to the operating room. The technique used for extraction was consistent with standard practices for lingual tonsillectomy, as described by Khoja, et al. The coblator, under 70° endoscopic visualization, was used to carefully dissect through the lingual tonsil. The metallic foreign body was quickly uncovered and removed. Her symptoms resolved, and at three years she is free of symptoms or complications.

Case 3

A 72-year-old female presented with two weeks of progressive throat pain and foreign body sensation that began while eating steak cooked on a grill. A CT scan demonstrated a linear radiopaque foreign body in the base of tongue (Figure 3). At an outside hospital, she underwent an unsuccessful exploration and attempted removal. At our institution, direct laryngoscopy and partial lingual tonsillectomy were performed with micdebrider, but the bristle was not identified.

Two days later the patient returned to the operating room for a repeat exploration. Partial lingual tonsillectomy was performed with the coblator using the same technique described in Case 2. The wire bristle was uncovered and removed using alligator forceps. She had no perioperative complications, her symptoms resolved, and she was discharged after a short period of observation.

Discussion

Oropharyngeal or upper esophageal wire bristles have been described in a small number of case reports. We present our experience with wire bristle foreign body of the upper aerodigestive tract, focusing on a new method of extraction.

Wire bristles are difficult to diagnose and manage. Usually, there is a history of ingesting grilled food, but occasionally there is no such given history. The CT scan, in our experience, was critical for diagnosing and locating the foreign body. Plain radiographs may be helpful in initial diagnosis, but the CT is essential for surgical planning and localization.

Patients who present with ingested wire bristles inevitably require multiple procedures for extraction. Wire bristles are difficult to extract due to their size, and they frequently within the thick lymphoid tissue at the base of tongue.

Our series describes an effective method for locating and removing base of tongue wire bristles. The coblator is increasingly used in common Otolaryngology procedures. Coblation was initially described as a useful tool for lingual tonsillectomy in 2006. This instrument, with the assistance of an angled endoscope, improved the typical lingual tonsillectomy from a bloody procedure with difficult exposure into a relatively easy performed case. The indications for coblator lingual tonsillectomy included lingual tonsil hypertrophy resulting in obstructive sleep apnea or persistent dysphagia. Foreign body retrieval previously has not been described as an indication for coblation lingual tonsillectomy.

Using this more effective technique, wire bristles could potentially be extracted during the first surgical attempt. Timely removal would prevent the patient morbidity related to persistent foreign body and repeated general anesthesia. In our series, the coblator successfully retrieved the wire bristles in two cases where previous attempts had failed. The technique is similar to published lingual tonsillectomy methods, and therefore should be familiar to many otolaryngologists in the community. Additionally, hemostasis can immediately be achieved with the same versatile instrument.

Conclusions

Wire bristles are unfortunately difficult to extract and can cause significant patient morbidity. Safety regulations regarding this tool should be stringent, and quality should be highly regulated to prevent the unintentional ingestion of the destructive foreign body. The coblator, already implemented in many common Otolaryngological procedures, is a familiar tool that significantly assists with the extraction of this particular foreign body. The relative risks and benefits, however, of coblator-assisted lingual tonsillectomy are not fully described as of yet.

References

1. Coblator Plasma Surgery System. ENTEC, ArtCraft Corporation, 519 North Pacific Avenue, Sunnyvale, CA 94086.