ABSTRACT

Office-based laryngeal surgery has experienced a renaissance in recent years, motivated by increased availability of high-definition endoscopic equipment in concert with economic factors as well as pressure on optimized patient access. We present our technique for management of the bulky vocal process granuloma in patients with substantial comorbidities in the office environment.

This is a retrospective review of patients undergoing resection of large symptomatic vocal process granulomas in the office environment. Five patients were treated with resection of granulomas with primarily transoral excision, with transnasal resection and laser ablation utilized as adjunct techniques. Botox injections were also used in a subset of patients to optimize healing. All procedures were documented with video. All patients received topical anesthesia with no peri-procedural sedation.

All patients had resolution of their granulomas or self-reported their vocal function had returned to baseline after healing.

Large vocal process granulomas can be treated in a single session in the laryngology procedure suite on the unsedated patient. An excellent outcome can be attained with readily available technology to include rigid endoscopy, flexible transoral laser laryngoscopy, and Botox injections. Consideration should be given to treating these bulky granulomas in the office based environment.

INTRODUCTION

Vocal process granulomas have been conclusively shown to relate to factors including reflux, intubation and psychologic stress.

As an initial treatment step, management strategies including medical reflux therapy, with dietary modifications and proton pump inhibitors or H2-blockers has been found to be somewhat effective.

Occasionally, speech therapy targeted at minimizing abusive vocal behaviors including competitive speaking and throat clearing may also be a useful adjunct to reflux precautions.

However, many granulomas are refractory to this conservative treatment. Recent literature has demonstrated the value of botulinum toxin to arrest phonotraumatic behaviors which are thought to underlie persistence of granulomas. This therapy is advantageous as it can be administered percutaneously in the office environment.

Our reviewed was design to present outcomes from maximal definitive up front therapy including surgery and Botox injection in the office environment. We report our experience with combined transoral resection in the office with concurrent transoral botulinum toxin vocal fold injection.

METHODS AND MATERIALS

A retrospective review of patients evaluated and treated at the Kaiser Permanente South Sacramento Medical Center’s office based laryngeal surgery service was performed from the service inception in December 2012 to the present.

Five patients were identified who were referred to our service for vocal process granulomas. Of the patients in this series, three of the five had attained their granulomas secondary to intubation. Two of the five patients had attained their granulomas due to reflux and abusive vocal behaviors.

Four out of five patients underwent transoral botulinum toxin injection with the Medtronic vocal fold injection system. (Figure 1)

All patients underwent transoral resection of their granulomas with Storz transoral laryngeal forceps. (Figure 2). Three of the five resections were performed in a piecemeal fashion. (Figure 3)

All injections and resections were performed under rigid endoscopic visualization with a Pentax 9106 telescope.

One patient required concurrent transnasal KTP laser ablation of the vascular stump of the granuloma. (Figure 4).

RESULTS

All patients experienced complete resolution of their granulomas with this approach.

Presenting symptoms of hoarseness and laryngeal tenderness over the posterolateral thyroid cartilage were completely resolved at the time of followup four weeks after the office procedure.

All patients underwent bilateral botulinum toxin injections with between 3 and 5 units injected per cord.

The symptoms of the botulinum toxin, including breathy dysphonia and dysphagia, were resolved at the time of followup.

No patients experienced aspiration or aspiration pneumonia following the procedure.

DISCUSSION

Vocal process granulomas can be a challenging entity to treat due to their recalcitrant nature.

The classical conservative therapy of reflux management and speech therapy, while adhering to the doctrine of “primum non nocere”, or first do no harm, is a reasonable first step but has a less than impressive success rate in causing satisfactory resolution or regression of these lesions.

Resection via microlaryngoscopy is similarly frustrating – while the immediate appearance of the surgical resection can be satisfying to the surgeon and patient, underlying vocal behaviors, such as baseline phonatory muscle tension with supraglottic compression, or compulsive throat clearing, are likely to cause prompt recurrence.

This is disapplying for patients and surgeons alike. Our approach of chemical paralysis to arrest the underlying vocal behaviors predisposing patients to recurrence in conjunction with definitive surgical resection has been shown to be feasible, safe and well tolerated.

While the initial postoperative period is notable for breathy dysphonia as well as dysphagia, we have found that these side effects are nominally challenging for the well-counseled patient. Moreover, the chemical denervation of the larynx for several weeks after the procedure may be of further value by allowing the patient to “reset” adverse vocal behaviors which were either the primary source of the granuloma in conjunction with reflux, or potentiated the granuloma development after endotracheal intubation.

CONCLUSIONS

Concurrent office based botulinum vocal cord injection and transoral resection of vocal process granulomas is a feasible, safe and effective approach for the definitive treatment of these bulky lesions.

The Botox injection may optimize healing via both chemical denervation, (hence preventing contact trauma on the denuded vocal process resection site) as well as inhibition of abusive vocal behaviors in the immediate postoperative period.

Efforts should be made to offer this therapy in the office environment not only due to its effectiveness, but to its inherent avoidance of intubation which is a common risk factor for the development of bulky vocal process granulomas.

REFERENCES