Hypopharyngeal Pharyngoplasty: An Emerging Adjunct to Laryngeal Framework Surgery for Paralytic Dysphonia

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Abstract

Objectives: To present our surgical technique and experience with hypopharyngeal pharyngoplasty as an adjunct to laryngeal framework surgery with unilateral vocal fold paralysis and dysphagia.

Study Design: Retrospective case series

Subjects and Methods: Twelve patients between 19 and 82 years of age with dysphagia and unilateral vocal fold paralysis underwent hypopharyngeal pharyngoplasty in addition to laryngeal framework surgery, medialization laryngoplasty, and cricothyroid subluxation between June 2004 and December 2006. We present surgical indications and technique, perioperative management, subjective change in dysphagia, and complications.

Results: All patients reported decreased dysphagia, including tolerating a greater variety of textures, no further need for compensatory techniques, and requiring less gastrosomitory tube nutrition. Follow up data of 4 - 36 months suggest sustained improvement in swallowing. There were no serious complications.

Conclusions: Our preliminary experience performing hypopharyngeal pharyngoplasty as an adjunct to laryngeal framework surgery shows uniform improvement in swallowing function without added morbidity.

Introduction

Unilateral vocal fold immobility (UVFI) causes significant morbidity due to its impact on phonation, airway protection, and the cough mechanism, as well as its secondary effects on aspiration. While patients with UVFI’s may seek medical attention due to poor voice quality or inadequate voice amplitude, many of these patients also suffer from dysphagia and chronic aspiration. The swallowing mechanism involves a complex series of coordinated events that conducts a bolus through the oral cavity, oropharynx, hypopharynx, and larynx. Dysfunction during any phase of swallowing, whether anatomic, muscular, or neurologic in origin, will cause dysphagia and may lead to aspiration. Videofluoroscopic swallowing studies on patients with UVFI have shown aspiration rates of 23% to 53% [1-3].

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Objective: Laryngeal framework surgery, including medialization thyroplasty, adduction arytenopexy, and cricothyroid subluxation, has been shown both to produce improved phonation ability and to decrease aspiration by allowing more complete glottic closure in patients with UVFI. Improvement in voice following laryngeal framework surgery is well established, but satisfactory improvement in dysphagia has been more difficult.

Methods

1. Retrospective review of all patients at Massachusetts Eye and Ear Infirmary, Boston, MA, from June 2004 to December 2006 with diagnoses of unilateral vocal fold immobility and dysphagia, who underwent hypopharyngeal pharyngoplasty.

2. All patients were clinically evaluated for dysphagia preoperatively.

3. Modified bulbous swallowing performed post-operatively if significant concern for aspiration.

4. Hypopharyngeal pharyngoplasty was performed as an adjunct to adduction arytenopexy, cricothyroid subluxation, and cricopharyngeal myotomy.

Results

1. Twenty patients underwent hypopharyngeal pharyngoplasty between June, 2004 and December, 2006, and all were included in the study.

2. All twenty patients reported satisfactory voice improvement at the one week post-operative visit.

3. Three patients noted improved swallowing at post operative clinic visits seven days after surgery. One of these patients continued to have some aspiration during the post-operative period, and was discharged home with a nasogastric tube. The other two patients continued to have some aspiration during the post-operative period, and were discharged home with a nasogastric tube.