Palatopharyngoplasty with Bilateral Buccal Mucosal Graft Repair to Alleviate Oropharyngeal Stenosis

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Abstract

Objective

Oropharyngeal stenosis is a rare, but known complication that may result from tonsillectomy procedure causing cicatricial scar formation between the soft palate, lateral pharyngeal walls, and base of tongue. A 15-year-old female patient presented to our Otolaryngology clinic with refractory dysphagia, mild obstructive sleep apnea, and snoring. Her medical history was significant for recurrent strep pharyngitis and the tonsillectomy she underwent 3 years prior to presentation. On examination, there was noted to be a severe cicatricial oropharyngeal scar involving the soft palate, anterior tonsillar pillars, and base of tongue. This cicatricial palatopharyngeal scar band resulted in a 1-cm² airway.

Methods

Methods

Surgical Technique

The palatopharyngeal scar bands were released bilaterally, using Bovie electrocautery. Harvesting bilateral buccal mucosal grafts and securing them using interrupted circumferential Vicryl sutures repaired the resultant oropharyngeal defects. The buccal mucosa donor sites were addressed using chromic suture to partially close the open wound by securing the remaining mucosal edge to the underlying muscle.

Results

The patient is now 1-year postoperative for severe oropharyngeal stenosis. She no longer complains of difficulty breathing or dysphagia. Her oropharynx has healed well, with no complications.

Conclusions

Lysis of scar with immediate reconstruction represents a viable option in treating severe oropharyngeal scar bands that may result from tonsillectomy misadventures. Buccal mucosa grafting represents a useful tool in the Otolaryngologist’s armamentarium for the closure of oropharyngeal defects.

Introduction

Oropharyngeal stenosis is a rare, but known complication that may result from tonsillectomy procedure causing cicatricial scar formation between the soft palate, lateral pharyngeal walls, and base of tongue.1,2,3 This is believed to arise from overaggressive dissection creating denuded adjacent mucosal surfaces at the inferior tonsillar poles and adjacent lingual tonsil tissue, resulting in adhesion of the anterior tonsillar pillars and inferior tonsillar fossa to the base of tongue.2,3 Presenting symptoms may include dysphagia on exertion, dysphagia, poor weight gain, sleep disordered breathing (SDB), or obstructive sleep apnea (OSA).2,3

A 15-year-old female patient presented to our Pediatric Otolaryngology clinic with refractory dysphagia, loud snoring, and dysphagia to solid food. Her medical history was significant for asthma, mild OSA, recurrent strep pharyngitis and the tonsillectomy she underwent 3 years prior to presentation. On examination, there was noted to be a discrete scar band crossing the hypopharyngeal wall, tethering the soft palate inferiorly, and pulling the lateral pharyngeal walls medially at the level of the anterior horizon of the soft palate, thus creating a severe cicatricial oropharyngeal scar involving the soft palate, anterior tonsillar pillars, and base of tongue. This cicatricial palatopharyngeal scar band resulted in a 1-cm² airway.

Several surgical interventions have been described for alleviating similar oropharyngeal and nasopharyngeal stenosis patterns, including injection of triamcinolone, manual dilation, and division with skin grafts, local palatal or pharyngeal mucosal flaps, and free flap repair.2,3,4,5 We present a case describing palatopharyngoplasty using bilateral buccal mucosal grafts to alleviate severe oropharyngeal stenosis that resulted from tonsillectomy misadventure.

Methods

Study Design

Case report

Surgical Technique

The palatopharyngeal scar bands were released bilaterally, using Bovie electrocautery. Harvesting bilateral buccal mucosal grafts and securing them using interrupted circumferential Vicryl sutures repaired the resultant oropharyngeal defects. The buccal mucosa donor sites were addressed using chromic suture to partially close the open wound by securing the remaining mucosal edge to the underlying muscle.

Results

The grafts were scored using a 15-blade scalpel to create simple meshing, then onlayed to the defect sites. Both grafts were sutured in place using interrupted Vicryl sutures in circumferential fashion, spaced 0.5 cm apart (Figure 2).

The buccal mucosa donor sites were addressed using chromic suture to partially close the open wound by securing the remaining mucosal edge to the underlying muscle. This process reduced the denuded surface area dramatically, without creating tension.

Discussion

Tonsillectomy surgical misadventure may result in distinct oropharyngeal or nasopharyngeal stenosis. Several surgical interventions have been described to alleviate these stenosis patterns.1,2,3 We present a case describing a unique closure technique for palatopharyngoplasty, using bilateral buccal mucosal grafts to alleviate severe oropharyngeal stenosis that resulted from tonsillectomy misadventure. The patient has noted improvement in her presenting complaints of difficulty breathing and dysphagia to solid food, with no complications. Direct visualization of the oropharynx 1-year postpalatopharyngoplasty revealed marked improvement of the oropharyngeal stenosis.

Buccal mucosa has become a popular source for harvesting tissue due to easy access of the harvest site, little to no cosmetic disturbances postoperatively, and the tissue’s resilient and pliable construction. Considering its high capillary density and elastic-rich consistency, buccal mucosa grafting is ideal for reconstructive surgery requiring viable wet tissue. Historically, the procedure has been lauded for its low morbidity at harvest site, good outcome, and its inherent feasibility.3 Morbidity of the use of the inner cheek as host site can include damage of Stenson’s duct or trauma to the buccal nerve, both of which are rarely reported. Other reported complications include donor-site hemorrhage, suture irritation, transient reduction in salivary flow, and trismus.5 The primary limitation to buccal mucosa grafts is the limited surface area from which the graft can be harvested.

Conclusions

Lysis of scar with immediate reconstruction represents a viable option in treating severe oropharyngeal scar bands that may result from tonsillectomy misadventures. Buccal mucosa grafting represents a useful tool in the Otolaryngologist’s armamentarium for the closure of oropharyngeal defects.

References