Displacement of Residual Gore-Tex Thyroplasty Implant Presenting as a True Vocal Fold Mass

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Abstract

Outcome Objectives: We aim to describe the unique presentation and management of a patient with an ipsilateral true vocal fold mass following revision thyroplasty that was identified to have migration of residual Gore-Tex thyroplasty implant into the superficial lamina propria of the anterior true vocal fold.

Methods: A single case of a patient who underwent revision type I thyroplasty after an unsuccessful attempt elsewhere using a Gore-Tex implant is reported. At the time of revision surgery, it was thought that all prior implant material was extricated and the patient underwent revision type I thyroplasty using a carved silastic Netterville Implant with arytenoid adduction.

Results: After initial improvement following the revision type I thyroplasty, the patient experienced deterioration of her voice. Indirect laryngeal examination revealed fullness on the superior surface of the right true vocal fold affecting mucosal wave and glottic closure. Microdirect laryngoscopy with endoscopic evaluation revealed migration of residual implant material into the superficial lamina propria. Using microtip technique, excision of the residual Gore-Tex thyroplasty implant was successfully performed with a combination of carbon dioxide laser and cold-section techniques.

Conclusions: This case report describes the unique presentation of a displaced, non-extruded residual Gore-Tex thyroplasty implant, which presented as new onset dysphonia, and mass involving the superior surface of the true vocal fold. This case demonstrates that displaced or migrated Gore-Tex thyroplasty implant material can be successfully removed endoscopically using a modified microtip technique.

Introduction

Unilateral vocal fold paralysis can have numerous etiologies with neoplasms, iatrogenesis, and idiopathic paralysis being the most common. This clinical entity manifests with symptoms of breathy dysphonia, vocal fatigue, and sometimes dysphagia. Various surgical treatments are available with the goal of mediatizing the paralyzed vocal fold in order to produce improved glottic closure. Type I thyroplasty is often employed and involves the implantation of a non-absorbable material, most commonly silastic or Gore-Tex. We describe the unique presentation and management of a patient with an ipsilateral vocal fold mass following revision type I thyroplasty, which was later found to be migration of Gore-Tex implant material into the superficial lamina propria.

Case Report

A 46-year-old woman underwent an anterior cervical discectomy and fusion at an outside institution that resulted in right true vocal fold paralysis from injury to the recurrent laryngeal nerve. Approximately 2 months post-operatively, she underwent medialization via a Type I thyroplasty with a Gore-Tex implant at the same outside institution. She tolerated this procedure well, but reported only minimal improvement in her voice following the procedure.

Five months later, she presented to our clinic with moderate breathy dysphonia and significant vocal fatigue. Flexible laryngoscopy with videostroboscopy was performed and revealed an immobile right true vocal fold in a paramedian position along with a moderate amount of bulk added from presumed Gore-Tex implant material. A revision type I thyroplasty with arytenoid adduction was recommended and subsequently performed. Approximately 10.5 cm of Gore-Tex was removed from a window in the patient’s thyroid cartilage (see Figure 1). This area was thoroughly searched for any remaining implant material. When no remaining material was identified, a carved silastic implant was inserted and arytenoid adduction was performed to achieve adequate true vocal cord medialization. The patient was discharged on post-operative day 1 with improved voice quality.

Soon after surgery, the patient’s voice began to deteriorate. She returned to clinic 3 months post-operatively with a rough, raspy voice. Flexible laryngoscopy revealed a submucosal mass on the superior surface of the right true vocal fold affecting glottic closure and mucosal wave (see Figure 2). The patient was taken back to the operating room where microdirect laryngoscopy was performed. An incision to the level of the superficial lamina propria was made just lateral to the true vocal fold mass using a CO2 laser. A microtip was elevated and 3.5 cm of residual Gore-Tex implant was removed (see Figure 3). The incision was closed using Tissueel, and the patient had an uneventful post-operative course (see Figure 4).

Discussion

• While the safety and efficacy of Gore-Tex in vocal fold medialization surgeries has been well-established, various complications have also been seen, including prolonged hospital observation, infection, extrusion, dyspnea, and bleeding. The incidence of implant extrusion for all types of implants has been reported to be as high as 8.6% in earlier series; however, larger and more recent studies suggest an extrusion rate closer to 0.8%. This case report describes the unique presentation of a displaced, non-extruded residual Gore-Tex thyroplasty implant.

• Similar to case reports of implant extrusion6,4, our patient presented with dysphonia. Other presenting symptoms of extrusion include persistent cough9 and dysphagia.4 Unlike cases of extrusion where laryngoscopy typically reveals an area of granulation tissue or foreign body, laryngoscopy in our patient showed what appeared to be a submucosal mass.

• The superficial nature of the mass made it amenable endoscopic removal using a microtip technique. Another important factor in the safe removal of the implant is the low immunogenicity of Gore-Tex.4,9 This case report describes the first reported case of removing residual Gore-Tex thyroplasty implant material without damage to surrounding laryngeal structures.

References

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