A NOVEL SURGICAL TECHNIQUE FOR UNILATERAL VOCAL FOLD PARALYSIS
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Abstract: Medialization thyroplasty has become treatment of choice for un recovering unilateral vocal fold paralysis. Though the surgical technique of medialization thyroplasty has become standardized, still the ideal implant has not been defined in the management. We present our experience of Goretex as the implant material in medialization thyroplasty.

Keyword: Medialization thyroplasty, Goretex, Vocal cord palsy

Introduction: Vocal fold paralysis is a rather common problem causing speech problems to the patient. If the other cord does not compensate adequately these patients may have troublesome aspiration also. Aspiration happens to be the most dreaded complication of vocal fold paralysis. Management of these patients is possible only by performing medialization thyroplasty. Various implants have been used in this procedure. Presently a lot of interest has been generated in Goretex medialization thyroplasty.

Materials and methods: A study was conducted in Govt. Stanley medical college, Chennai from July 2010 to October 2012. In this period we did 5 cases of medialization thyroplasty with Goretex material. Cases were evaluated objectively and subjectively.

Inclusion criteria:
1. Unilateral vocal fold paralysis due to paralysis, paresis, atrophy.
2. Unilateral vocal fold scarring, soft tissue loss.
3. In selected cases of Parkinson’s disease with vocal fold atrophy.

Exclusion criteria:
1. Previous history of irradiation or surgery.
2. Malignant lesions involving larynx.
3. Poor abduction of contralateral vocal fold.

Patient evaluation:

Objective measures:
1. Videolaryngoscopic examination: Videolaryngoscopic examination was done and recorded for all patients to compare pre operative with post operative vocal cord status. Glottic gap, overriding of arytenoid are noted.

Subjective measures: Patient’s self evaluation: 1. Voice: Scoring was given to evaluate the voice of the patient as below.
The patient is assessed.

Surgical technique: All cases were done under local infiltration anaesthesia using 2% xylocaine mixed with 1 in 1,000,000 units adrenaline.

And patients were followed up on 3 months and 6 months and the same quality of voice is assured.

Discussion: Gore-Tex is a waterproof/breathable fabric, and a registered trademark of W.L. Gore and Associates. A porous form of polytetrafluoroethylene (the chemical constituent of Teflon) with a micro -structure characterized by nodes interconnected by fibrils. Gore-Tex materials are typically based on thermo-mechanically Expanded polytetrafluoroethylene (PTFE) and other fluoropolymer products. They are used in a wide variety of applications such as high performance fabrics, medical implants, filter media, insulation for wires and cables, gaskets, and sealants. However, Gore-Tex fabric is best known for its use in protective, yet breathable, rainwear. The outer layer is typically nylon or polyester and provides strength. The inner one is polyurethane, and provides water resistance, at the cost of breathability.

The first treatment of unilateral vocal cord paralysis in the modern era was Bruning’s intracoronal injection of paraffin in 1911. In 1915 Payr introduced anteriorly based thyroid cartilage flap. Each procedure produced only limited success. In 1960s the first synthetic material, teflon was used for vocal fold injection for medialization. Several authors then introduced different modifications but the procedure did not become popular until the late 1970’s when Isshiki introduced his thyroplasty technique. This involved displacing and stabilizing a rectangular, cartilaginous window at the level of the vocal cord, therefore pushing the soft tissue medially. This technique gained wider acceptance after Isshiki reported the successful use of Silastic as the implant material. This procedure has been modified by many surgeons by using different prosthesis. In 1996 Hoffman and McCullouch reported the first case of medialization thyroplasty using Gore tex material. There are some notable advantages to the Gore tex material. The flexibility of the ribbon allows the surgeon to distribute the degree of medialization differently along the length of the vocal fold. This allows finely tuned intraoperative adjustments that do not involve removal and replacement of the entire prosthesis. This flexibility also allows the surgeon to fit the window through a small cartilage fenestration. The Gore tex implant does not require carving, is relatively easy to place, and is malleable permits contouring of the surrounding tissue. Greater pliability also may decrease extrusion potential and make Gore tex a more natural implant for vocal fold augmentation. Because of these unique properties inherent to the material itself, and the case of surgical placement, indications for thyroplasty may be expanded to include almost any anatomic defect at the glottic level that leads to aerodynamically glottic insufficiency.
References:
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