Glottal Function Index and GRBAS Scale of Patients Undergoing Vocal Cord Medialization: A Series of Five Patients

ABSTRACT

Objective: Vocal cord paralysis or immobility is a debilitating condition that may result from neural injury or mechanical fixation of the vocal cord (VC). When permanent, therapy is aimed at improving closure by modifying the position of the vocal cord. Whatever surgical intervention is chosen, pre- and post-operative voice evaluation is important. This study aimed to investigate the usefulness of the Glottal Function Index (GFI) and Grade, Roughness, Breathiness, Asthenia, Strain (GRBAS) Scale in the evaluation of treatment outcomes in patients with unilateral vocal cord paralysis (UVCP) who underwent medialization thyroplasty type 1 with a modified lock-in soft silicone implant.

Methods:

- **Design:** Descriptive Case Series
- **Setting:** Tertiary Government Hospital
- **Patient:** Five

Results: Five patients (3 females, 2 males) consulted due to hoarseness underwent rigid endoscopy. Four (2 right, 2 left) had unilateral paramedian VC paralysis while one had bilateral paresis with bowing of the left vocal cord. One of those with left VC paralysis was diagnosed as idiopathic; the four were iatrogenic (3 from thyroid surgery, 1 from multiple surgical procedures). All patients underwent medialization thyroplasty type 1 using locked-in soft silicone implant. The GFI and GRBAS scale were utilized for pre-operative and post-operative perceptual evaluation of voice. The GFI showed severe glottic insufficiency among all five patients prior to surgery with improvement of subjective symptoms one day and one week post-surgery in four patients. Likewise, the Hirano GRBAS scale showed improvement of voice quality and correlated well with the improvement of the patient’s subjective symptoms from the GFI scores. However, case 5 with bilateral vocal cord paresis, showed no improvement of voice quality despite recovery from subjective symptoms.

Conclusion: For glottal insufficiency, perceptual voice evaluation using self-administered GFI and GRBAS scale assessment are important parameters in determining quality of life among patients with glottal insufficiency undergoing medialization laryngoplasty.

**Keywords:** hoarseness, unilateral vocal cord paralysis, medialization thyroplasty, Glottal Function Index, Hirano GRBAS Score