

# **SURGICAL REMODELLING OF THE GLOTTAL GAP IN VOICE DISORDERS**

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**Introduction:** Voice disorders resulting from glottal insufficiency are a common clinical problem in everyday phoniatic practice. They are the result of presbyphonia, unilateral vocal fold paralysis or vocal fold scar or sulcus. Methods of treatment encompass phonosurgery with dissection or resection and injection laryngoplasty.

**Aim:** Evaluation of treatment results of the glottal incompetence with surgical remodelling.

**Material:** The material of the study consisted of 99 subjects with glottal insufficiency and voice disorders. There were 45 patients with unilateral vocal fold paralysis, 30 with sulcus vocalis and 24 with presbyphonia.

**Methods:** All of the patients underwent stroboscopic examination, perceptual voice assessment (GRBAS) and objective acoustic analysis (MDVP). Subjective voice evaluation was performed by Voice Handicap Index questionnaire.

Surgical treatment with augmentation of hyaluronic acid (Surgiderm 24XP) and/or calcium hydroxyapatite (Radiesse Voice Implant) and combined in sulcus cases with microflap approach technique were applied in the studied group.

Follow-up examinations were conducted 6 and 12 months after surgery.

**Results:** Postsurgical evaluation of voice using GRBAS scale after 6 and 12 months showed statistically significant improvement of all studied parameters. In objective assessment of voice (MDVP) performed before surgery the highest values of Jitt and Shim were observed in patients with unilateral vocal fold paralysis and in this group we achieved statistically significant improvement either 6 and 12 months in the follow up. In patients with sulcus and presbyphonia we got lower values of studied parameters but the differences were not significant. Noise to Harmonic Ratio parameter showed significant improvement in the paralysis group and Soft Phonation Index values significantly decreased in patients with sulcus and presbyphonia.

**Conclusions:**

1. Surgical remodelling of the glottal gap gives the best voice results in patients with unilateral voice paralysis
2. Individualized approach to each patient and applying mixed surgical techniques are an effective and voice-improving methods restoring speech production.