

Verbal performance of total laryngectomized patients rehabilitated with esophageal speech and tracheoesophageal speech: impacts on patient quality of life

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Introduction: Total laryngectomy has important psychophysical and social consequences for patients' quality of life because of the functional changes resulting from the removal of the larynx. Voice deprivation is perhaps the most relevant limiting factor in social relationships, increasing feelings of solitude and tending to drive individuals into social isolation. Multiple voice rehabilitation methods after total laryngectomy are available. This study aimed to determine the acoustic quality of the rehabilitated voice achieved with esophageal speech (ES) and tracheoesophageal speech (TES), and acoustic quality impacts on patients' perceptions of their quality of life.

Materials and methods: The patient inclusion criterion was the completion of a speech rehabilitation course with ES or TES at least 6 months after total laryngectomy. The voice acoustic analysis was carried out automatically by using the Multidimensional Voice Program. The following parameters were extracted: fundamental frequency (F0), jitter% (jitter), shimmer% (Shimmer), and noise-to-harmonic ratio (NHR). Subjective voice evaluation was performed by using the following questionnaires: Voice Handicap Index (VHI), Voice-related Quality of Life (V-RQOL), and Voice Performance Questionnaire (VPQ).

Results: The acoustic analysis showed a difference between ES and TES patients on all acoustic parameters; this difference was significant for F0 (133.09 ± 2.4 and 119 ± 3.3 , respectively; $p < 0.001$), NHR (0.43 ± 0.21 and 0.31 ± 0.14 , respectively; $p = 0.02$), and maximum phonation time (2.02 ± 0.38 s and 10.64 ± 0.28 s, respectively; $p = 0.01$). Regarding patient-related outcomes, TES correlated with better total scores compared with ES; however, the differences in the total scores on the VHI ($p = 0.09$), V-RQOL ($p = 0.39$), and VPQ ($p = 0.52$) were not statistically significant.

Conclusion: The rehabilitation of laryngectomized patients must be addressed by a multidisciplinary team that considers the personalities, personal needs, and relational conditions of individual patients in order to determine and apply the phonatory rehabilitation method most suitable for achieving a better quality of life.

Keywords: total laryngectomy, tracheoesophageal speech, esophageal speech, laryngeal cancer

Introduction

Laryngeal cancer represents 4.5% of all malignancies and is one of the most common cancers of the upper aerodigestive tract.¹ The main modalities of surgical treatment include transoral laser microsurgery, open preservation surgery, and total

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Speech Rehabilitation Of The Laryngectomized

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