

VIDEOKYMOGRAPHIC ANALYSIS OF VOCAL FOLD VIBRATION IN UNILATERAL VOCAL FOLD PARALYSIS

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I. INTRODUCTION

The study investigated vocal fold vibration in patients with unilateral vocal fold paralysis with the aim of answering the following questions: I) Does the paralyzed vocal fold tend to vibrate faster or slower than the healthy vocal fold? II) What are the most important features that distinguish the vibration of the paralyzed from the healthy vocal fold?

II. METHODS

A systematic protocol, which visually rates 33 vibratory features of the vocal folds using pictograms, was used to evaluate videokymographic images obtained from 46 patients diagnosed with unilateral vocal fold paralysis. The evaluation was done independently by four evaluators. Statistical analysis of the parameters was performed using the R GNU and G-power software.

III. RESULTS

The results revealed a statistically significant tendency of the paralyzed vocal fold to vibrate with different frequency, amplitude and phase than the healthy vocal fold. However, there was no clear tendency of the paralyzed vocal fold to vibrate slower or faster than those of the healthy vocal fold – both of these possibilities were observed.

The most prominent features for distinguishing the paralyzed vocal fold from the healthy one (approaching but not reaching statistical significance) were a) the reduced sharpness of lateral peaks and b) increased amplitude of the paralyzed with respect to the healthy vocal fold.

IV. DISCUSSION

The paralyzed vocal fold tends to behave differently in different patients. These intra-individual differences should be taken into account for diagnostic and therapeutic purposes. The data can also be used for refining the biomechanical models of the vocal folds in voice disorders.

ACKNOWLEDGMENTS

The research has been supported by the Technology Agency of the Czech Republic project no. TA04010877 (JGS, JV, MF) and by the Palacky University student's projects IGA_PrF_2014_029 (PA) and IGA_PrF_2015_025 (ZM).