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Analysis of Vocal Pathologies Through Subglottic Pressure Measurement

Authors : Perla Elizabeth Jimarez Rocha, Carolina Daniela Tejeda Franco, Arturo Minor Martínez, Annel Gomez Coello

Abstract : One of the biggest problems in developing new therapies for the management and treatment of voice disorders is the difficulty of objectively evaluating the results of each treatment. A system was proposed that captures and records voice signals, in addition to analyzing the vocal quality (fundamental frequency, zero crossings, energy, and amplitude spectrum), as well as the subglottic pressure (cm H2O) during the sustained phonation of the vowel / a /; a recording system is implemented, as well as an interactive system that records information on subglottic pressure. In Mexico City, a control group of 31 patients with phoniatric pathology is proposed; non-invasive tests were performed for these most common vocal pathologies (Nodules, Polyps, Irritative Laryngitis, Ventricular Dysphonia, Laryngeal Cancer, Dysphonia, and Dysphagia). The most common pathology was irritative laryngitis (32%), followed by vocal fold paralysis (unilateral and bilateral,19.4 %). We take into consideration men and women in the pathological groups due to the physiological difference. They were separated in gender by the difference in the morphology of the respiratory tract.

Keywords : amplitude spectrum, energy, fundamental frequency, subglottic pressure, zero crossings
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