Air Pulse Device for Laryngeal Reflex Examination

Published date: March 15, 2017

Technology description

Air Pulse Device for Laryngeal Adductor Reflex Evaluation The current invention developed at the University of Missouri presents a unique technology to objectively measure the laryngeal adductor reflex (LAR). This technology may be used to quantify and evaluate the LAR in all types of mammals ranging from laboratory rodents to horses and humans. This system utilizes air pulses which may be delivered to the vocal cords at varying pressures and durations and has many advantages over the current state-of-the-art, which are presented below. The integrated control system allows numerous LAR responses to be obtained with minimal operator input and is designed to interface with commercially available endoscopes. This technology will improve the diagnosis and treatment of mammals affected with maladies that exhibit LAR abnormalities, such as dysphagia and neurological disorders. Current systems only measure the threshold pressure that elicited the LAR whereas this technology is capable of measuring the response in its entirety and allows more accurate diagnosis and treatment. The LAR is a brief, bilateral, and involuntary closure of the vocal folds that prevents foreign material from entering the airway. One of the most clinically significant applications of the LAR is its use in laryngopharyngeal sensory discrimination testing. Abnormalities in the LAR may predict dysphagia, vocal cord dysfunction, or pediatric apneas. Potential Areas of Applications Diagnosis of dysphagia in mammals Early screening for neurological disorders, such as ALS and Parkinson’ s Prediction of vocal cord dysfunction and pediatric apneas Main Advantages of Invention Interfaces with commercially available endoscopes Respiratory sensor that permits automated, synchronized air pulses Near silent operation, compact size, wide range of operable pressures Ability to visualize and quantitate the entire LAR and associated parameters with timed video capture

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