

Vocal folds



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Running head: VOCAL FOLDS Vocal Folds and Phonation The vocal folds located in the larynx plays a primary role in the production of sound. As air passes through the larynx during breathing and phonation, the sound is produced as the vocal folds vibrate or contact each other. More popularly known as vocal cords, these two folds of mucous membrane extend across the interior of the larynx and are attached to " the inferior edge of the thyroid angle to the anterior part of arytenoids" (Mobius, n. d.). According to Story (2002), vocal folds have the ability to abduct (move apart) during respiration and the ability to adduct (move together) during phonation. With its location at the neck and its adducting and abducting abilities, the vocal fold becomes the " point of division between the subglottal and supraglottal airways".

With their corresponding properties, Hirano classifies the layers of the vocal folds into five minute layers (as cited in Altman, n. d.). The outer protective layer is the squamos epithelium, which is responsible for sustaining the form of the vocal fold and its hydration. The next layer is the superficial lamina propia (SLP) which is composed of loose fibrous and elastic components that possess mechanical properties due to its cushion-like assets. The intermediate lamina propia (ILP) on the other hand, is generally composed of elastic fibers, which therefore adds to the elasticity of the vocal folds. Then there is the deep lamina propia (DLP), the vocal fold layer that consists of collagenous fibers that is responsible for the durability of the vocal fold. The fifth layer is the vocalis muscle. It as a muscle and therefore has active (contractile) properties that helps in controlling the stiffness of the vocal folds when it is vibrating, contracting or at rest. These layers vary in terms of stiffness and therefore were grouped further accordingly. The cover layer or <https://assignbuster.com/vocal-folds/>

mucosa is composed of epithelium and SLP, while the vocal ligament is composed of the ILP and DLP. The vocalis muscle serves as the body of the vocal fold.

The vibrating movements of the vocal folds enable the process of phonation. " Air pressure from the lungs controls the opening of the folds, and the Bernoulli effect controls the closing phase" (Nave, n. d.). The vibrating cycle of the vocal folds starts with the top of the folds opening and the bottom closing. When the top is closed, pressure buildup causes the bottom to open. The vibration therefore moves upward from the bottom to the top of the vocal folds. The brief puff of air that escapes in every vibration produces the audible sounds at a frequency of the opening. To change the pitch of the sound, " the muscles of the larynx, changes the elasticity and the tension of the vocal folds" (Nave, n. d.). Sound or voice intensity can also be intensified by increasing air flow or pressure from the lungs and the vocalis muscle or body of the vocal fold exerting resistance. With increased air pressure, vocal folds are prolonged in a wider stretched position thus producing increased sound amplitude.

In conclusion, the vocal folds are substantial in sound production because of its main function in the larynx. It not only serves its function in sound production but also in activities such as swallowing, breathing, vomiting, generating high abdominal pressure connected to defecating and child birth and etc.

Reference

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