

A STUDY ON ARTICULATORY MOVEMENTS IN CLEFT PALATE SPEECH

Masayuki Sawashima

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The most typical pattern of the cleft palate speech is a combination of the hypernasal voice quality, the nasal emission and faulty articulations. In the author's previous study, it was concluded that the most important defect in cleft palate speech was the faulty articulation.

There are three types of faulty articulation: a glottal stop used as a substitute typically for stop consonants, a pharyngeal fricative for /s/ and nasal consonants for voiced stops and affricates.

In the present work, the author investigated the movements of the tongue and the larynx in the articulations of the glottal stop and the pharyngeal fricative.

1) Lateral views of the vocal tract by cineradiography

When the glottal stop is used for /k/, the tongue remains motionless and the normal articulatory movement for [k] is hardly observed.

In the case of the glottal stop used for /t/, the movement of the tongue is apparently less active than in the normal articulation, but the tip of the tongue touches the alveolar ridge.

In the pharyngeal fricative used for /s/, the base of the tongue is drawn back to the point that it appears to touch the posterior pharyngeal wall at the level of the tip of the epiglottis. This is quite different from the tongue position for a normal [s].

2) Postero-ventral views of the larynx by cine-laryngography

In normal articulations of voiceless stop consonants in intervocalic position, it can be observed that the vocal cords are set in a slightly abducted position.

When the glottal stop is used in cleft palate cases, however, the false cords as well as the vocal cords tightly close together. This is quite similar to the closure in coughing. In the explosive phase of the glottal stop, the false cords separate very quickly.

3) Laryngoscopic observations of consonantal articulations by use of a special fiberscope

The author devised a thin flexible fiberscope for observing the glottis through the nose without disturbing articulatory movements of the speech organs. In the case of normal speakers, the vocal cords abduct to a certain extent for voiceless stops. In cleft palate cases, it is impossible to keep visualization of the larynx through the scope at the moment of the glottal stop. This observation suggests a displacement of the larynx associated with its strong constrictive action. Occasionally, at the beginning of the glottal stop, a tight closure of the vocal cords and the false cords is clearly observed.