ABSTRACTS

Abbs, J. H., The Influence of the Gamma Motor System on Jaw Movements during Speech: A Theoretical Framework and Some Preliminary Observations. *J. Speech Hear. Res.*, *16*, 175–200, June, 1973.

A selective anesthesization technique was applied to the mandibular branch of the trigeminal nerve in man, and jaw activity was observed during speech under conditions of gamma motor blockade. The basic procedure involves special application of a conventional nerve block whereby it appears possible to selectively block the gamma efferent fibers of a motor nerve while leaving the alpha fibers unaffected. Measurement and analysis of jaw displacement, velocity, and acceleration under both normal and gamma block conditions revealed systematic effects for two experimental subjects. The experimental changes in jaw activity were interpreted to suggest that the spindle afferent facilitation of alpha motoneurons, thought to optimize the initiation of movement under normal conditions, was absent or disrupted. Thus, the jaw musculature was unable to produce adequate opening and closing forces with

normal temporal control. Furthermore, from these data, under normal conditions, the spindle motor system would appear to operate most clearly under conditions of movement where large values of acceleration, velocity, and displacement were demanded. Finally, these findings were accepted as support for spindle motor system operation in oral-facial movements during the production of speech. (Author's Summary: Lerman)

Black, F. O., E. N. Myers, and L. B. Rorke, Aplasia of the first and second branchial arches. *Archives of Otolaryngology, 98,* 124–130, 1973.

The authors have reviewed congenital anomalies involving the first and second branchial arches of which cleft lip and cleft palate are a portion and presented an illustrated case. They concluded, "The rare lethal syndrome of microstomia, aglossia, agnathia and synotia (otocephalus, otocephalia) is the most severe form of the so called first arch anomaly. A baby with this combination of malformations offered an opportunity to study the pathologic morphology of structures derived from the first and second arch anlage. Although the pathologic anatomy varies from case to case, the observations of several authors along with our findings pose questions regarding the embroyology of the midface, cranial, base, and derivatives of the first two branchial arch structures. Current concepts require critical revision in order to logically classify the myriad of deformities that are presently designated first and second arch malformations." (Gregg)

Cohen, M., Diminished tooth size in mongoloids. *Tufts Health Science, 1,* 18–19, 1970.

In a quantitative analysis of tooth size in a large population with Down's Syndrome, all of the permanent teeth showed mesio-distal diameters reduced at a significant level. In addition, maxillary central incisors were found to be unusually smaller, and lateral incisors are generally congenitally missing. (Goldenberg)

Gorlin, R. J. and H. Sedano, The 18q- syndrome. *Modern Medicine, 41,* 65, 1973.

This syndrome, due to long arm deletion of a chromosome 18, is characterized by profound mental retardation, hypotonia, frequent seizures, somatic growth impairment, low pitched voice, long tapering fingers, supernumerary ribs, frequent congenital heart defects, and hypoplastic genitalia. There may be skin dimples over the subacromion and epitrochlear areas, lateral to the patellae and over the knuckles. Midfacial hypoplasia, mild microcephaly, deep set eyes, glaucoma, strabismus, nystagmus, tepetoretinal degeneration, and optic atrophy may occur. Other malformations may be found in the mouth, nose, and ears. Cleft lip and palate have been reported concomitantly. Fingerprint whorls characteristically exceed five in number. This paper is a brief description of the syndrome with illustrations of a typical case. (Gregg)

McClean, M., Forward Coarticulation of Velar Movement at Marked Junctural Boundaries, *J. Speech Hear. Res., 16,* 286–296, June, 1973.

The author, utilizing high-speed cinefluorographic techniques, studied velar movement in order to ascertain whether marked junctural boundaries may delay the onset of forward coarticulation. Three normal speaking subjects produced a constant CVVN sequence, and frame by frame analysis were made of velar movement. Where marked junctural boundaries existed the onset of forward co-articulation to nasal consonants was delayed. (Lerman)

Moller, K. T., M. Path, L. J. Werth, and R. L. Christiansen, The Modifi-

cation of Velar Movement, *J. Speech Hear. Dis., 38*, 323–333, August, 1973.

The authors attempted to modify velar elevation through the use of displacement transducers and techniques of applied behavior analysis. One 12-year old male with moderate hypernasality served as the subject. An analysis of the results indicates that a change in velar movement did occur within the framework of a limited speech task. The authors suggested the need for further research using more complex speech tasks and to overcome the problems encountered in instrumentation. (Lerman)

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