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Study of changes in the facial framework in patients with congenital or acquired facial paralysis during growth, through the Functional Matrix theory

Facial growth is the result of a complex combination of genetic and acquired factors. Several studies indicate that the quality of mechanical stimuli generated during functional activities can significantly influence craniofacial morphology. Studies in animals and one study in humans investigated and concluded that, in humans with congenital or childhood-acquired facial paralysis, changes in the facial framework occurred, corresponding to what occurred in animals with apparent induced paralysis. CT scan measurements in humans showed one measurement related to the midface region and seven measurements related to the mandible. Observing the measurements obtained from the cited study, we made comparisons with the literature referring to the Functional Matrix Theory, relating one to the possible altered matrix due to lack of innervation. Considering that the musculature innervated by the facial nerve has a close relationship with the dermis through a superficial musculoaponeurotic system and entheses, we observed that a search for reorganization of these tissues occurred. However, this demand occurs asynchronously. On the paralyzed side, the absence of traction in the functional periosteal matrix—particularly in the ramus region—resulted in an anomalous form characterized by a compensatory increase in the mandibular body. In contrast, the healthy side showed greater traction in the ramus, possibly due to a lack of contralateral muscular opposition, or one that altered its dimensions. We conclude, therefore, that the interconnection through the fascia and entheses, under completely unsystematic muscular recruitment, subverts the orientation of growth, culminating in an altered skeletal conformation.

Keywords: rehabilitation, growth, Facial Paralysis,

Biography

Dr. Rosana Queiroz is a Dental Surgeon specializing in Functional Orthopedics of the Maxillofacial region. She holds a PhD in Health Sciences and has postgraduate training in Otorhinolaryngology. Her professional and research interests focus on craniofacial development, functional jaw orthopedics, and the relationship between oral health, facial growth, and airway-related conditions. She contributes to advancing knowledge in multidisciplinary approaches to maxillofacial and healthcare sciences.