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Soft Palate and Tongue Position in Relation to Osseous Bases

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Introduction: The habitual position of the tongue is an important factor for the development of the dental arches, being considered one of the etiological factors of malocclusion. Several authors have specifically shown the relationship between tongue pressure and teeth positioning¹⁻³. However, few are the studies that relate the tongue with the types of bone structures and with velum position. Studies regarding myofunctional interferences over hard tissues present different opinions, sometimes divergent and with methodologies which are not very objective. It seems that a method of simple application does not exist in order to verify the intraoral craniofacial structures of hard and soft tissues and their respective supports. The use of image exams, like cephalometry, can provide data which complement the diagnosis and which can give a better direction to myofunctional treatment, allowing the visualization of structures and spaces, facial bone pattern, especially regarding the maxilla and mandible⁴⁻⁷.

Purpose: To observe and characterize the position of the base of the tongue and soft palate related to bone structures through cephalometry analyses, as well as to verify the possible association between: position and inclination of the soft palate and base of the tongue in Class II and Class III osseous bases individuals, delineating objective data regarding characterization and habitual position of these structures.

Method: Analyses of norm lateral radiographic images of 40 patients, with ages between 07 and 15 years, who presented position of bone structures classified as Class II and Class III osseous bases. In order to verify the antero-posterior maxilla-mandibular relationship and to characterize bone structures, cephalometry analyses and Ricketts' classification were used. In order to verify the position and inclination of the soft palate, base of the tongue and relationship of support, specific tracings were developed for this research, which were previously used in a pilot study. Descriptive statistics and the chi-square test were used to assess possible associations between the variables.



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Results: It was observed that the inclination of the soft palate is related to the bone structures, with statistically significant differences. In Class II individuals the predominant position of the soft palate is "partially inclined" and in Class III individuals the predominant position is "mainly vertical". No statistical differences were found for: association between the position of the base of the tongue to the bone structures, as well as to the inclination and support on soft palate.

Conclusion: Specific tracing for these soft tissue structures demonstrated to be efficient for the visualization and characterization of position, inclination and support of the soft palate and base of the tongue. The position of the bone structures seems to determine the posture and inclination of the soft palate, this being "partially inclined" in Class II individuals and "mainly vertical" in Class III individuals. The position of the base of the tongue does not seem to be related to the bone structures, nor to the inclination of the soft palate.

References:

- 1- Becelli R; Perugini M; Gasparini G; Iannetti G. Dental and skeletal malformations: 434 cases of II and III dental skeletal class. [Minerva Stomatol.](#) 2000;49(7-8):347-53.
- 2- [Beane RA](#), [Reimann G](#), [Phillips C](#), [Tulloch C](#). A cephalometric comparison of black open-bite subjects and black normals [Angle Orthod.](#) 2003;73(3):294-300
- 3- Nobre DG, Gushiken FT, Periotto MC, Araújo RH. A integração entre a Fonoaudiologia e a Odontologia no respirador bucal: a relação com malocclusão do tipo Classe II de Angle e o seu tratamento. *Rev. paul. odontol.* 2004;26(2):4-11.
- 4- Bianchini EMG. A cefalometria nas alterações miofuncionais orais: diagnóstico e tratamento fonoaudiológico, 5ª ed. Carapicuíba-SP: Pró-Fono; 2002.
- 5- Tessitore A. Análise radiográfica da posição habitual da língua. [Dissertação]. Campinas: Unicamp-Faculdade de Ciências Médicas;2001.
- 6- Bianchini EMG. Avaliação Fonoaudiológica da Motricidade Oral: Distúrbios Miofuncionais Orofaciais ou Situações Adaptativas. *R Dental Press Ortodon Ortop Facial.* 2001; 6:73-82.
- 7- Lowe, A.A.; Takada, K.; Sakuda, M. Dentoskeletal and tongue soft-tissue correlates: a cephalometric analysis of rest position. *Am J orthod.* 1995;88(4):333-41.