

is relatively common, with a prevalence of 21% to 85%. The etiology of mandibular asymmetries is multifactorial, including genetic, environmental and congenital influences. Temporomandibular joint (TMJ) structural abnormalities are important etiologic factors that may lead to mandibular growth disturbances. Some alterations of condylar morphology can lead to the development of mandibular asymmetry: Bifid or trifid mandibular condyles are extremely rare entities, of unknown etiology, although they have been associated with trauma involving the temporo mandibular joint (TMJ). Although there are cases supporting this hypothesis, bifid condyle has also been reported in patients with no known history of trauma; Condylar Hyperplasia is a disorder characterized by an excessive bone growth of the mandibular condyle which brings a number of facial, occlusal and functional alterations that may also interfere with the patient's psychosocial development; Condylar hypoplasia is a bone disease characterized by the decreased development of one or both the mandibular condyles. All these alterations of condylar growth lead to the development of mandibular asymmetries that are usually asymptomatic. The objective of this report is to describe three cases of mandibular asymmetry associated with trifid condyle, condylar hyperplasia, bifid condyle and condylar hypoplasia, which were attended by the Orthodontic Department in the Faculty of Dentistry of the University Central of Venezuela. Cases Report: 1- Male patient of 12 years of age, asymptomatic, with a history of facial trauma at 3 years of age. An extra-oral examination revealed a slight mandibular deviation towards the left side. Skeletal and dental Class II patient with deep bite was present. The articular clinical evaluation presented normal-mobility in opening and closing and in excursion movements, as well as the absence of joint noises. The evaluation of Computed Tomography (CT) shows a trifid condyle on the left side. 2- Male patient of 15 years of age, with antecedent trauma at the chin at 4 years of age. Extra-oral examination revealed gross facial asymmetry of the lower third of the face with deviation of the mandible to the left side. Patient showed a skeletal and dental Class I, deep bite and canting the occlusal plane. There was evident reciprocal clicking of the left TMJ and pain associated on palpation of the left TMJ. CT revealed condylar hyperplasia in the right TMJ. MRI showed disc displacement with reduction in left TMJ and disc thinned in right TMJ. 3- Female patient, asymptomatic, 21 years old with severe mandibular asymmetry with deviation on the right side. Skeletal Class III and dental Class I right and left Class III with canting of the occlusal plane. The TMJ evaluation revealed bilateral noises. CT showed a bifid condyle on the left side and condylar hypoplasia on the right side. In MRI, bilateral disc displacement was observed. Conclusions: The relationship between TMJ morphology and facial skeletal deformities was reported

from many authors. These cases suggested that mandibular asymmetry was associated with condylar morphology. Understanding the etiology of mandibular asymmetry is extremely important in the management of patients. Early diagnosis of this condition is the key for satisfactory results in such patients.

Simplified protocol for tomographic evaluation of mandibular asymmetry

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Aim: Facial asymmetries occur near and even above 20% of the patients who attend consultation of Orthodontics. They are the result of the interaction of multiple factors that influence the growth and development, causing discrepancies in size and position between various structures that make up the complex facial skull that depending on the severity and the potential for adaptation of the individual may compromise your facial balance and function. The etiology is believed to be related to congenital, developmental, or acquired factors. Genetic and trauma-related asymmetries may involve muscles, produce excessive unilateral growth, or adversely affect mandible development. Genetic and trauma-related asymmetries may involve muscles, produce excessive unilateral growth, or adversely affect mandible development. The growth of the skull, maxilla, and mandible are closely related. If growth is altered in one of these areas, the asymmetric growth and development of part of the craniofacial skeleton may result in a chin deviated from the mandibular midline. The advent of computed tomography has greatly reduced magnification errors from geometric distortions that are common in conventional radiographs. The three-dimensional software (3D) recently introduced allows 3D reconstruction and the multiplanar images obtained from the tomography allow the quantitative measurement of the maxillofacial complex, useful to understand the asymmetric structures involved. The aim of the present work was developing a simplified protocol on Cone Beam tomography (CBCT) or computed tomography (CT) images, for evaluation of the morphology and dimensions of bone structures involved in the etiology of mandibular asymmetry, for better diagnosis and treatment planning.

Methods: Based on the review of the literature is



elaborated a descriptive protocol for evaluation of facial asymmetry on CBCT or CT. Different softwares are applied: volumetric reconstructions in 3D, multiplanar and 2D radiological images. Three reference lines were defined to assess facial asymmetry (vertical, horizontal and axial), from which the structures will be studied; anatomical landmarks are located, and linear and angular measurements are obtained. The asymmetry indices of the bilateral landmarks were calculated.

Results: The measurements were recorded in columns showing the right and the left values, respectively and the difference for each pair was recorded in a third column. All measured values were recorded on a chart, and the differences between the right and left side were analyzed. The asymmetry index of each landmark is summarized.

Conclusion: The morphological study of the mandibles structures on CBCT or CT and their interpretation is very important for the orthodontic and surgical diagnostic and treatment planning phases as well as in the postoperative follow-up. The protocol proposed in this work simplifies the identification of structures involved in the facial asymmetry, as well as its severity, facilitates the diagnosis and the multidisciplinary management.

Digital technologies to monitor dental movement in orthodontics

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Aim: Several digital technologies are nowadays used in Orthodontics, gradually modifying normal orthodontic practice. The popularity and availability of virtual technology in orthodontics for the replacement of hard-copy records with electronic records is growing rapidly, with a move towards a 'digital' patient for diagnosis, treatment planning, monitoring of treatment progress and results. Making an accurate dental impression is one of the most important procedures in dentistry. The introduction of the intraoral scanner allows us to overcome the disadvantages of the analogical impression, obtaining digital models more precise and accurate. The aim of the study is to demonstrate the validity of the monitoring through intraoral scanner of the dental movements and the real importance, advantages and convenience, to frequently monitor patients with the scanner application. Another aspect of the study is focused on the differences between digital and conventional monitoring.

Methods: In this study we performed a monitoring of dental movement of impacted palatally canines, only surgically treated with a new surgical approach, laser operculectomy, without using any type of orthodontic traction. We analysed the radiographs by performing the prognosis of the eruption's canines on the OPT according to Ericson and Kurol, and we have also reconstructed the root position and the morphology of impacted canines, using software to convert CT files into STL models. Then, we measured, using the software Meshlab to overlay 3D models obtained from CT and from intraoral scans, the values of eruption, exposed palatal and vestibular areas and distances between the cusp of the canines and the palatal zenith of central and lateral incisors. We made the same measurements on the plaster casts with compass and ruler. Then, we compared the two monitoring methods by evaluating the error obtained for each measured data. This comparison allowed us to demonstrate the superiority in precision of digital measurements. Based on the analysis of the data obtained, we made correlations between the entity of eruption movement and age, type of inclusion and starting inclination of the canines (angle α).

Results: We realized a descriptive and inferential statistical analysis of each data obtained from both conventional and digital monitoring, determining the statistical averages, the percentage increase and performing the T Student Test for paired data. Using digital technologies, we have been able to calculate the real eruption of the impacted canines and to evaluate the characteristics of the dental movement, correlating it to the variability of the sample. From this study it emerged that monitoring with digital technologies is more precise than conventional monitoring.

Conclusion: The advantages of digital monitoring are numerous. It allows us to eliminate the error caused by manual measurement on plaster casts, making real measurements, and to compare over time of the same patient.

Severe Obstructive Sleep Apnea Syndrome solved with an orthodontic mandibular advancement device: a case report

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Aim: Obstructive Sleep Apnea Syndrome (OSAS) is