



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

M. Horodynski¹, A. Impellizzeri², D. Giovannoni³, E. Serritella², G. Galluccio⁴

¹DS, Sapienza University of Rome

²PhD Student, Sapienza University of Rome

³DS, Post graduate student, Sapienza University of Rome

⁴Associate Professor, Sapienza University of Rome

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

Giuliano Irlandese¹, Alberto De Stefani², Giovanni Bruno³, Luca Mezzofranco⁴, Antonio Gracco⁵, Edoardo Stellini⁶

¹University of Padua, Department of Neuroscience, Dental School

²University of Padua, Department of Neuroscience, Dental School

³University of Padua, Department of Neuroscience, Dental School

⁴University of Padua, Department of Neuroscience, Dental School

⁵University of Padua, Department of Neuroscience, Dental School

⁶University of Padua, Department of Neuroscience, Dental School

Aim: Obstructive Sleep Apnea Syndrome (OSAS) is