Are we there yet in digital dentistry for prosthodontics?

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Digital dentistry has been introduced to prosthodontics in a number of ways for a number of reasons. Some have chosen to use it because they felt it was accurate. Some chose it because it was thought to eliminate the laboratory and reduce costs. And again some feel it is more efficient. This article will discuss the benefits that the digital approach offers. The type of analog data that is necessary will be discussed and how it will be converted into the digital form. Digital dentistry can be taught in a vertical manner. The main concept would be to digitally provide wax-ups from complete dentures to complex implant cases using the same software solution. Titanium milled bars will be used to provide support for provisional, support for trial set-ups and finally for the definitive protheses. The 3D printer will be used for custom trays, implant jigs and trial 3D printed trial try-ins. The milled denture is effective in eliminating heat processing resulting in better stability. The same set-up can be used for other treatment options and digitally used over for future needs. The accuracy and flexibility of the digital solution will be demonstrated in a number of case studies. The software is designed to be user friendly for the treating dentist and the laboratory within the workflow.

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The association between the frontal sinus morphological variations and the cervical-vertebral maturation for the assessment of skeletal maturity

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Introduction: The assessment of skeletal maturity is important for planning dentofacial orthopedics or orthognathic surgery for the treatment of different skeletal malocclusions. Cervical vertebral maturation is widely used method to evaluate skeletal maturity of patients undergoing orthodontic treatment. In the past decade, another method is being proposed which is based on frontal sinus morphology. So, the aim of this study is to evaluate the association between frontal sinus morphological variations and cervical vertebral maturation for the assessment of skeletal maturity.

Method: Lateral cephalograms of 252 subjects aged 8-21 years were collected from the dental clinics of AKUH. The sample was divided into six groups based on cervical vertebral maturation stages. The frontal sinus index was calculated by dividing frontal sinus height and width and the cervical vertebral maturation stages were evaluated on the same radiograph. Data were analyzed using SPSS (version 19). Kruskal-Wallis test was applied to compare frontal sinus index at different cervical stages and Post hoc Dunnett t3 test was applied to compare frontal sinus index between adjacent cervical stage intervals in males and females. A $p$-value of ≤0.05 was considered as statistically significant.

Results: The frontal sinus height and width were significantly associated with the individual cervical vertebral maturation stages in males and females. However, frontal sinus index wasn’t significantly associated with the individual cervical vertebral maturation stages in males and females.

Conclusion: Frontal sinus index cannot differentiate between pre-pubertal, pubertal and post-pubertal adolescent growth stages therefore; it cannot be used as a reliable maturity indicator.

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