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Applications of digital dentistry in modern dentistry from virtuality to reality

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Digital dentistry is now very widely accepted and is already in use in dental practice all over the world. This presentation will demonstrate how this innovation can provide the dentist with useful diagnostic information and additional treatment skills. This concept can integrate and combine a many different specialities together to produce a standardized computer generated surgical and restorative dental solutions guides for the patients by allowing the operator and general practiomers to apply the predetermined treatment plan for different surgical and prosthetic treatments that are difficult or even impossible to obtain by conventional methods. In this presentation, computer guided implant surgery will be discussed in details from A to Z, starting from the CBCT scanning protocol till the drilling protocol and types of drilling systems. Also in this presentation the types of computer generated surgical stents used for orthognathic surgeries will be highlighted. Also planning for different types of prosthetic restorations can be planned in three-dimensional aspects and also executed. In addition the translation of the digital smile design can be planned and physically achieved by the aid of many 3rd party softwares. Finally, other applications of digital dentistry will be mentioned briefly.

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Innovational approaches in normalization of occlusal plane

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Introduction & Objectives: The goal of our study was to develop methods of orthodontic treatment of patients with problems in the TMJ area, as well as leveling of the occlusal plane in partially edentulous patients with missing posterior teeth. The lack of tooth support limits of orthodontic treatment occlusal plane for the further successful prosthetic rehabilitation, it is therefore necessary to find innovational approaches of treatment without active patient compliance with treatment regimens.

Methods: Several cases were referred by other orthodontists for finding solutions after few years' orthodontic treatments. Other patients were referred by the prosthodontists for potential preservation of misplaced teeth and correction of occlusal plane for further prosthetic treatment. In some cases it was not possible to use bracket systems without additional support. Introduction of micro-implants in the practice of an orthodontist and knowledge of biomechanics of movements helped to solve these problems.

Results: As a result, the use of micro-implants as a skeletal anchorage and partner relationship with osteopathy's support the clinician can obtain results similar to surgery, but without it and with lower risks and cost, especially in cases with TMJ problems. Using micro-implants as a skeletal anchorage instead of missing posterior teeth let us to correct the horizontal occlusal plane, to align some teeth resulted in correction of the vertical and transverse occlusal plane. In cases of alignment of the orbital plane in space of the skull, the use of micro-implants for intrusion of the teeth has limited indications.

Conclusion: Prosthodontists have now an opportunity to perform right prosthetic treatment, use more implants and at the same time preserve more teeth, correct masticatory functions and TMJ problems and improve the smile without surgery in a lot of cases.

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