FULLY-CUSTOMIZED MINIPLATES WITH GUIDED INSERTION FOR TEMPORARY SKELETAL ANCHORAGE IN ORTHODONTICS

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Introduction: Treatment of severe malocclusion nowadays is unimaginable without the use of skeletal anchorage. While mini-screw type of devices provides easy insertion, quick healing and cost-effective advantages, orthodontic miniplates withstand higher orthodontic forces and can be applied in severe malocclusion treatment cases.
Objective: Our study seeks to present a fully-guided individually customized miniplate implantation treatment protocol, compare with conventional skeletal anchorage systems and discuss possible benefits and drawbacks
Case series: A 25-year-old male was being prepared for bimaxillary orthognathic surgery in private clinic in Vilnius, Lithuania. Pre-op orthodontic treatment plan required mandibular molar uprighting to create space for incisors retroclination. Another 42-year-old female treated in the same clinic required mandibular second molar uprighting to open up space for first molar implants as a part of finalizing orthodontical treatment plan after bimaxillary orthognathic surgery to treat skeletal Class II. Individual miniplates were planned as a skeletal anchorage in order to reach orthodontic goals for both cases. Multidisciplinary team of dental technician, oral surgeon and maxillofacial surgeon planned the design and site of insertion. The fully customized miniplates were inserted under local anesthesia.
Results: Patients did not experience any complications after the surgery. Follow up showed stable miniplates after being loaded with high forces.
Conclusions: Up-to-date digital workflow of 3D planning and printing orthodontic miniplates minimizes the risk of jatrogenic complications, ensures patient comfort and reliable procedure results

Keywords: miniplates, skeletal anchorage, temporary anchorage device, orthodontics