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A new era of splinted implant design for immediate replacement of a wide mandibular molar

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Background: This study was carried out to evaluate (both clinically & radiographically) the ability of a new splinted implant design to overcome the obstacles associated with utilizing the immediate implant placement and immediate loading protocols for restoration of a single missing mandibular molar tooth, where the results obtained from measuring the implant stability, bone height and bone density around the implants revealed that the new splinted implant design could be used successfully for immediate replacement of a single mandibular first molar tooth with a great success rate and without affecting the osseointegration process.

Introduction: Replacement of a single posterior missing tooth in the molar region has been a challenging clinical situation. Immediate implant placement protocols in post-extraction sites without waiting for the site to heal have been proposed to achieve many advantages of reducing the treatment time and decreasing the patient's discomfort, in addition to the high predictability and aesthetic outcome. Various studies recommended the combined use of the immediate post-extraction implant placement with the immediate non-functional loading protocols in an attempt to further reduce the treatment period. However, the success rate of such a combination requires a strict adherence to several precautions. To achieve the combined immediate implant placement and immediate loading protocols, a new implant design will be introduced and tested for validity in such cases.

Materials & Methods: For the purpose of this study, twenty patients were selected with a single mandibular first molar indicated for extraction and with specific criteria. Those patients had undergone atraumatic extraction of the mandibular first molar and by the aid of a computer-guided surgical stent; each patient immediately received two implants; one in the mesial and one in the distal socket. A plastic castable coping was screwed to each implant, shortened and a wax pattern was formed over both plastic castable, sprued and casted to form a crown assembly with a fitting surface of two custom-made abutments. The whole assembly was tried in the patient's mouth and then finished into full porcelain crown that was screw-retained in the patient's mouth.

Results: Paired t-test was used to study the changes by time in different parameters and revealed that: For Osstell measurements; there was a statistically significant increase in the mean values from zero to 12 months of prosthesis placement. For bone height measurements; there was a statistically non-significant increase in the mean values-indicating non-significant bone resorption-from zero to 12 months of prosthesis placement. For bone density measurements; there was a statistically non-significant decrease in the mean values of bone density from zero to 12 months of prosthesis placement.

Conclusion: The new splinted implant design could be used successfully for immediate replacement of a single mandibular first molar tooth without affecting the osseointegration process and with highly acceptable outcomes.

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Temporary anchorage devices

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In the last 20 years the orthodontic field has gone through tremendous changes, ever since the introduction of Temporary Anchorage devices, orthodontists has been capable to solve problems that were only possible to solve with orthognathic surgery. This lecture is oriented to explain the origin of Temporary Anchorage devices, their indications, contraindications as well as advantages and disadvantages. Through a series of cases it will be presented how to treat Severe Anterior Open bites, severe tooth agenesis, multidisciplinary cases and the combination to solve difficult orthognathic surgery cases using TADS. It will also be explained the type of TAD recommended and how to utilize them effectively to achieve the best possible result.

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