A Pilot Study of Mini Implants as a Treatment Option for Prosthetic Rehabilitation of Ridges with Sub-Optimal Bone Volume

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Additional article information

Abstract

Implants are the latest development in the field of prosthodontics. Full dent with implant and bonded bridges are the latest treatment options for edentulous patients with sub-optimal bone quantity and quality accommodating the concomitant implants. The implants used in this study were mini implants which specialized and the manufacturers have recently launched a series of mini implants of narrower diameter. The long-term success rate of mini implants diameter implants, needs to be evaluated.

Keywords: Mini implants, Ridge deficiency, Prosthetic rehabilitation

Introduction

Loss of bone width and alveolar ridge deficiency has been reported as an encumbrance in the case of patients with edentulous ridges for dental implants treatment. The patients would then have to be contended to undergo a complex surgical procedure additional procedures for the placement of the implants. Conventional implants demand adequate bone quantity and quality for their successful osseointegration. The success of dental implants is governed by the minimum diameter of the implant which is 3.25 mm and the length of the implant is 7.5 mm. The large or extended supporting bone structures of the alveolar ridge.

Literature review shows difficulties with insertion of the implants in the edentulous ridges with the lack of adequate bone quantity and quality. Hence the integration of intraoral screws dropped implants with a diameter of 1.8 mm and a length of 10 mm in sheep's of 6 mm long implants of varying diameters (1.8 mm, 2.4 mm, 3.0 mm) in the lateral metapodium of sheep, after 12 weeks of healing, the implants showed osseointegration. Mini implants with a diameter of 1.8 mm and 2.4 mm diameter. However, a similar study by Block et al. reported that the implants with 2.4 mm diameter exposed to extract hydroxyapatite coated showed a 7.5 % of failure. Mini implants with 2 and 3 mm length from sheep's lateral metapodium showed osseointegration. Mini implants with a diameter of 1.8 mm showed better osseointegration than 2.4 mm diameter. Statistically, a study by Block et al. (2.4 mm compared to the diameter of 1.8 mm and large diameter (3.25 and 4.25 mm) dental implants showed no significant difference in the survival rate of the implants in the edentulous ridges.

In the past decade, many implants being introduced in the market with different diameters and lengths. Mini implants are one of the latest developments.

These mini implants have been placed in the edentulous ridges with the help of surgical expeditiously, Non-Rigid Dental Lifting and Stabilization (NRDLS) technique, which is a method to collect and summarize 2 years of clinical data on 2 mm diameter mini implants, 1.8 mm and 2.4 mm diameter mini—implants (Ellis, 2010) for single—molar restorations.

Materials and methods

Mini implants (Medentis Medical, Germany) 1000 patients requiring simple tooth replacements were selected as candidates for mini implants. Patients were from non-available for standard implant treatment because of insufficient bone volume or severe dental aspect was at least 2 mm. Patients with a history of medical problems, such as uncontrolled diabetes mellitus, cardiac disease, and history of undergoing augmentation procedures and those with parafunctional habits were excluded from the study. Informed consent was obtained from all patients. A sample group of 1000 patients was selected and it was from unbiased randomly and reviewed consecutively. Patients were treated with the implants and were followed up. Clinical and radiographic evaluations were done pre-operative, post-operatively and periodically 1month follow up. Radiographs. Were were observed using a standardized technique to assess the bone density and percent the measurement of marginal bone loss around implants. Data collection and all complications were recorded. Data on patient demo-graphics and treatment data were compiled as pre-operative measurements (Bone density and degree of plunge, prosthetic rehabilitation, Modeling etc.,amount of bone loss, implant diameter and length, implant length from the gingival margin (Figure 1), (Figure 2), (Figure 3).