

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/jpor

Original article

Comparison of patient-reported outcomes between immediately and conventionally loaded mandibular two-implant overdentures: A preliminary study[☆]

Yuri Omura DDS^a, Manabu Kanazawa DDS, PhD^{a,*},
Daisuke Sato DDS, PhD^b, Shohei Kasugai DDS, PhD^c,
Shunsuke Minakuchi DDS, PhD^a

^a Gerodontology and Oral Rehabilitation, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University (TMDU), Tokyo, Japan

^b Department of Implant Dentistry, School of Dentistry, Showa University, Tokyo, Japan

^c Oral Implantology and Regenerative Dental Medicine, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University (TMDU), Tokyo, Japan

ARTICLE INFO

Article history:

Received 16 September 2015

Received in revised form

14 December 2015

Accepted 28 December 2015

Available online xxx

Keywords:

Immediate loading

Implant

Mandibular overdenture

Patient-reported outcome

Quality of life

ABSTRACT

Purpose: The aim of this preliminary study is to compare patient-reported outcomes between immediately and conventionally loaded mandibular two-implant overdentures retained by magnetic attachments.

Methods: Nineteen participants with edentulous mandibles were randomly assigned into either an immediate loading group (immediate group) or a conventional loading group (conventional group). Each participant received 2 implants in the inter-foraminal region by means of flapless surgery. Prostheses in the immediate and conventional groups were loaded using magnetic attachments on the same day as implant placement or 3 months after surgery, respectively. All participants completed questionnaires (the Japanese version of the Oral Health Impact Profile for edentulous [OHIP-EDENT-J], the patient's denture assessment [PDA], and general satisfaction) before implant placement (baseline) and 1, 2, 3, 4, 5, 6, and 12 months after surgery. The median differences between baseline and each monthly score were compared using the Mann–Whitney *U* test. The differences in median and 95% confidence interval between two groups were analyzed.

Results: The immediate group showed slightly lower OHIP-EDENT-J summary score at 1 and 3 months than the conventional group ($P = 0.09$). In the lower denture domain of PDA, the immediate group showed a statistically higher score at 3 months ($P = 0.04$). There was no statistically significant difference in general satisfaction between the two groups.

[☆] The clinical trial registration number: UMIN000009889.

* Corresponding author at: Gerodontology and Oral Rehabilitation, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University (TMDU), 1-5-45 Yushima, Bunkyo-ku, Tokyo, Japan. Tel.: +81 3 5803 5563; fax: +81 3 5803 5586.

E-mail address: m.kanazawa.gerd@tmd.ac.jp (M. Kanazawa).

<http://dx.doi.org/10.1016/j.jpor.2015.12.010>

1883-1958/© 2016 Japan Prosthodontic Society. Published by Elsevier Ltd. All rights reserved.

Conclusions: Based on this preliminary study, immediate loading of mandibular two-implant overdentures with magnetic attachments tends to improve oral health-related quality of life and patient assessment earlier than observed with a conventional loading protocol.

© 2016 Japan Prosthodontic Society. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Implant overdentures (IOD) have improved the clinician's ability to successfully treat edentulous patients. Several studies have shown that IOD provide adequate denture stability and retention and improve patients' quality of life (QoL) and lead to higher denture satisfaction, including better function, speech, and comfort [1,2]. The McGill consensus suggested that a two-implant overdenture (2-IOD) should become the first choice of treatment for the edentulous mandible [3]. According to the Brånemark protocol, a 3–6-month healing period should be incorporated after implant placement to achieve osseointegration [4]. The long healing period might impose aesthetic, functional, psychological and socially intolerable consequences for edentulous patients [5]. In the original implant placement protocols, a mucosal flap was commonly elevated to better visualize the implant recipient sites despite postoperative morbidity and discomfort [6]. In contrast, flapless surgery reduces surgical invasiveness and an immediate loading protocol permits denture use on the same day as implant placement.

Immediate loading of IOD treatment has been attempted to shorten the healing period and to allow earlier use of dentures. Several studies have reported that the immediate loading of 4-IOD and 2-IOD splinted by bar attachments lead to a high implant success rate [7–10]. In recent years, several pre–post studies without control groups have reported that immediate loading of 2-IOD with non-splinted attachments achieves preferable results [11–16]. In addition, three randomized clinical trials compared immediate loading of 2-IOD retained by ball attachments [17,18] and locator attachments [19] with conventional loading. Although, implants in the immediate group showed lower survival rate than seen in the conventional groups, the difference was not statistically significant. In addition, with regard to retention mechanisms, magnetic attachments appear to reduce lateral force to the implants. Implant survival rates, marginal bone resorption and peri-implant tissue responses with immediate loading 2-IOD have been evaluated [11–16]. However there are no randomized clinical trials comparing patient reported outcomes (PROs) after immediate loading of 2-IOD retained by magnetic attachments to 2-IOD retained in similar fashion and utilizing a conventional loading protocol.

The aim of this study is to compare PROs of immediately- and conventionally-loaded mandibular 2-IOD retained by magnetic attachments. The null hypothesis was that there would be no differences in the oral health-related quality of life (OHRQoL) between immediately- and conventionally-loaded mandibular 2-IOD.

2. Materials and methods

2.1. Trial design

This study was a randomized unblinded parallel-group trial to compare the PROs of immediately loaded mandibular 2-IODs retained by magnetic attachments with those of conventionally loaded mandibular 2-IODs.

All participants were given oral and written information about the study and signed informed consent forms. The Ethics Committee at Faculty of Dentistry, Tokyo Medical and Dental University approved the study protocol (Number 693). Participants had to meet the following inclusion criteria: (1) a completely edentulous mandible and any opposing maxillary remaining tooth condition, (2) adequate bone volume in the anterior mandible for placement of 2 implants with a minimum dimension of 4.0×10.0 mm, (3) no need for bone augmentation, (4) willing to wait at least 4 months of healing after extraction, (5) good oral hygiene, and (6) possession of an adequate understanding of written and spoken Japanese to respond to our questionnaires. The exclusion criteria for the patients included the following: (1) uncontrolled systemic disease that might compromise implant surgery, (2) a history of chemotherapy or radiotherapy to the head and neck region, (3) heavy smokers, and (4) a history of bisphosphonate administration. Participants were randomly assigned equally into two groups: the immediate loading group (immediate group) and the conventional loading group (conventional group). Randomized treatment allocation of participants was executed by the minimization method to ensure pretreatment comparability of the groups with respect to age, gender and the American College of Prosthodontists (ACP) classification [20]. As there were no previous studies comparing PROs of these two loading protocols, a sample size of 10 participants per group was chosen for this preliminary study.

2.2. Surgical and prosthetic procedures

Panoramic radiographs were utilized for preoperative clinical assessment of each mandible. Each participant received new mandibular complete dentures or had their existing mandibular complete dentures relined to improve the denture fitting before implant placement. All participants were treated following a previously described protocol including computed tomography (CT) scans, preoperative planning, manufacturing of surgical guides and implant placement procedures [21,22]. Two implants (Nobel Speedy Groovy RP $\varphi 4 \times 10$ –18 mm, Nobel Biocare, Gothenburg, Sweden) were inserted in the inter-foraminal area of each participant according to the manufacturer's protocol for a flapless surgical procedure [23].

Download English Version:

<https://daneshyari.com/en/article/8706871>

Download Persian Version:

<https://daneshyari.com/article/8706871>

[Daneshyari.com](https://daneshyari.com)