Differences in Masticatory Function in Patients with Endodontically Treated Teeth and Single-implant–supported Prostheses: A Pilot Study

Karl F. Woodmansey DDS, Mural Aylik DDS, Peter H. Burschang PhD, Cathy A. White BS, Jaking Ho DMD PhD

Published Online: November 19, 2008

DOI: http://dx.doi.org/10.1016/j.joen.2008.10.016

Abstract

Endodontic treatment and dental implants are both viable treatment options to restore a compromised dentition. How these treatments impact patients’ ability to chew has not been studied. The purpose of this study was to compare various parameters of masticatory function in patients with endodontically treated teeth and single-implant supported prostheses. Fifty patients were included in this study. Twenty-five patients had mandibular molar root canals, and 25 had single-implant-supported prostheses in the mandibular molar region. The natural teeth contralatera to the treated side served as the internal control. Maximum bite force, chewing efficiency, and areas of occlusal contact and near contact (ACNC) were recorded for each subject, along with a questionnaire to evaluate subjective chewing ability. When compared with contralateral controls, dental implants were found to have significantly lower maximum bite forces, reduced chewing efficiency, and smaller ACNC. Endodontically treated teeth were not statistically different than their contralateral controls. These results indicate that endodontically treated natural teeth may provide more effective occlusal contact during masticatory function compared with implant-supported restorations, leading to more efficient mastication.

Key Words:
Bite force, endodontic treatment, implant, masticatory function, occlusal contact

To access this article, please choose from the options below

Log In
Email/Username:
Password:
Remember me
Log In

Purchase access to this article
You must be logged in to purchase this article.

Claim Access
If you are a current subscriber with Society Membership or an Account Number, claim your access now.

Subscribe to this title
Purchase a subscription to gain access to this and all other articles in this journal.

Institutional Access
Visit ScienceDirect to see if you have access via your institution.

Supported by a research grant from Baylor College of Dentistry and Baylor Oral Health Foundation.