Masticatory performance in patients with natural dentitions was significantly higher than that with conventional complete dentures and implant-supported complete dentures ($P < .05$). Increasing the retention of the mandibular complete denture with two implants improved masticatory performance ($P = .01$). While masticatory area in patients with complete dentures was lower than that in patients with natural dentitions ($P = .004$), maximum mouth opening during mastication in the same patient group was lower when compared to patients with natural dentitions ($P < .001$) and implant-supported overdentures ($P < .001$). There was no significant difference between the complete denture and implant-supported overdenture groups with respect to masticatory area ($P = .533$).

Discussion

The present study was conducted to make a quantitative evaluation regarding masticatory efficiency for implant-supported mandibular overdentures, conventional complete dentures, and natural dentitions.

Numerous reports on the various benefits of implant insertion, such as bone preservation and retention of complete dentures, are available. The present study demonstrated that treatment with two interforaminal implants also increased masticatory performance. Haraldson et al[4] reported that mandibular overdentures retained by two implants did not improve masticatory performance. In a 5-year prospective clinical study, implant-supported mandibular overdenture treatment permitted better occlusal and masticatory function than conventional complete dentures.[5] van Kampen et al[6] reported that improved mandibular complete denture retention after insertion of implants resulted in better masticatory function when compared with conventional complete dentures. On the other hand, increasing the retention of mandibular complete dentures after application of two interforaminal implants may cause a probable lack of retention with the maxillary complete denture.

Conclusion

Within the limitations of this study, the null hypothesis was rejected. Masticatory performance of patients with implant-supported complete dentures was higher than that of patients with conventional complete dentures.

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Literature Abstract

Regulation of tooth number by fine-tuning levels of receptor-tyrosine kinase signaling

Tooth numbers are highly variable among mammals, with evolution leading to a reduction in tooth numbers in many species. Humans have two incisors in each quadrant while mice only have one incisor per quadrant. The rodent incisor is difficult to trace from fossil records, and the influence of specific genes on the number of incisors is not clearly defined. Loss of sprouty gene function has been previously linked to dental anomalies. The aim of this study was to examine a series of mice with sprouty gene mutations to determine whether these mutations affect the number of incisors. The investigation found that modifying the sprouty gene dosage affected the number of incisors produced. Decreases in sprouty gene dosage led to an increased number of teeth. A large decrease in the sprouty gene also led to the development of two independent incisors. This study concluded that altering sprouty gene dosages in rodents has an influence on tooth numbers, and that tooth numbers can be progressively regulated by changing levels of activity of a single signal transduction pathway.

Charles C, Hovorakova M, Ahn Y, et al. *Development* 2011;138:4063–4073. **References:** 58. **Reprints:** Ophir D. Klein, Department of Pediatrics and Institute for Human Genetics, University of California San Francisco, San Francisco, CA 94143, USA. Email: ophir.klein@ucsf.edu—*Clarisse Ng, Singapore*