INFLUENCE OF INSERTION ANGULATIONS OF MINISCREW IMPLANT ON THE MECHANICAL RETENTION



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved

THE GRADUATE SCHOOL CHIANG MAI UNIVERSITY MARCH 2008

INFLUENCE OF INSERTION ANGULATIONS OF MINISCREW IMPLANT ON THE MECHANICAL RETENTION

SIRINUN ARUNYAWONGSAKORN

A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN ORTHODONTICS

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved

THE GRADUATE SCHOOL CHIANG MAI UNIVERSITY MARCH 2008

INFLUENCE OF INSERTION ANGULATIONS OF MINISCREW IMPLANT ON THE MECHANICAL RETENTION

SIRINUN ARUNYAWONGSAKORN

THIS THESIS HAS BEEN APPROVED

TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE

IN ORTHODONTICS

EXAMINING COM	MITTEE	32		A			
	Eduardo	we Su	e	CH	AIRPERS	SON	
Dr.	Eduardo Yugo Suzuki	12 2	7	ME	EMBER		
	soc. Prof. Vachara Phe	100					
a dans Ass	soc. Prof. Dr. Boonsiva	Buranastidp	orn	ME	EMBER	H	IJ
Convright	D. Jolika	ette	1ai	ME	EMBER	rsit	tv
A I I I	soc. Prof. Dhirawat Joti	kasthira e	S		r v	e	d

24 March 2008

© Copyright by Chiang Mai University

ACKNOWLEDGEMENTS

The completion of this thesis would mean nothing to me if I failed to acknowledge a number of people who have contributed a great deal of encouragement as well as assistance for this research.

I would like to thank all the people who helped me on this journey:

First of all, Dr. Eduardo Yugo Suzuki and Dr. Boonsiva Suzuki for supervising my thesis. With their enthusiasm, their inspiration, and their great efforts to explain things clearly and simply, they helped to make experimental research fun for me. Throughout my thesis-writing period, they provided encouragement, sound advice, good teaching, and lots of good ideas, even though the writing of the papers was often a painful birth. With their help I learned the rigorous and logical construction of experiments and the writing of papers. I would have been lost without them.

I wish to express my deepest gratitude and appreciation to Associate Professor Dhirawat Jotikasthira, my thesis co-advisor for his special efforts, unforgettable support, and excellent encouragement. This thesis would not have been a complete success without his professional guidance.

I would also like to express gratitude to Dr. M. Kevin O Carroll, Professor Emeritus of the University of Mississippi School of Dentistry, and Faculty Consultant at Chiang Mai University Faculty of Dentistry, for his valuable suggestion and in preparation of the manuscript.

I would also like to express thankfulness to Associate Professor Piyanart Chatiketu and Instructor Narumanas Korwanich for their kind statistics advice in this research project.

I am deeply indebted to Instructor Thepparat Khemaleelakul and Ms. Phannee Odthon, staff in the Dental Laboratory, for their help on the pullout machine.

My sincerest thanks to Mr. Chittakone Thipthammavong, instructor, Prosthodontic and Orthodontic Unit Department of Dentistry University of Health Sciences Laos, for helping with specimen preparation and pullout testing.

I wish to express my thanks of all the members of the staffs of the Department of Orthodontic, Faculty of Dentistry, Chiang Mai University for their helpful suggestions and critic.

My Friends, KISS team, for their friendship, moments we shared, help, support and everything friends are there for.

I would like to acknowledge the financial support from the Faculty of Dentistry, Chiang Mai University.

Finally, I am particularly grateful to my family members, all of whom were especially supportive and extremely helpful, for their understanding, emotional assistance, and encouragement.

I tried to thank everybody who helped me to achieve this goal. Therefore, if some people are missing on this list, I apologize to them at this point and of course thank them very much for their help and presence.

Sirinun Arunyawongsakorn

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved

E TO MAI