Homogenity And Sealing Ability Of GuttaFlow® As Root Canal Filling Material

Thesis

Submitted to the Endodontic Department

faculty of dentistry –Ain Shams university

for

Partial Fulfillment of requirements of Master Degree

In Endodontics

By

Ahmed Mohammed Abd Elhamid Sobieh

B.D.S. Ain Shams university

(2004)

Supervisors

Prof. Dr. Hossam Mohammed Essam El Din Tawfik

Professor of Endodontics

Faculty of dentistry - Ain Shams University

Asso. Prof. Dr. Shehab El din Saber

Associate professor of Endodontics

Faculty of dentistry - Ain Shams University

Faculty of dentistry

Ain Shams University

2014

Acknowledgements

I would like to express my deepest gratitude to Prof. Dr. ***Hossam Tawfik*** *Professor of Endodontics faculty of dentistry - Ain Shams University for his help and general guidance. A true and sincere mentor.*

I would also like to thank Asso Prof Dr. ***Shehab El din Saber*** *Associate professor of Endodontics Faculty of dentistry - Ain Shams University, for going through every single detail in this work and for his valuable advice and support.*

Dedication

I would like to dedicate this work to my wonderful parents, to whom I owe everything and the true reason behind my success.

I would also like to thank my wonderful wife, for her endless support throughout this work & all the happy times.

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Introduction

Successful obturation of the delicate anatomy found within the root canal system of teeth is considered a big challenge to clinicians. The intricacies of the canals, accessory canals, fins, etc, have stretched the limits of the available materials to successfully accomplish this procedure. The task goes well beyond the accurate filling of the 3-dimensional space within the canal. It is essential to create an impervious seal along the length of the root canal, including both the apical and coronal ends of the root canal system, to prevent bacterial recolonization.

Sealing of root canal system ensures total isolation and prevention of micro organisms from reinvading root canal system. Gutta Percha have been the golden standard for obturation over one century , however , lack of adhesive qualities of gutta percha constitute a major disadvantages .

Clinicians have tried to adapt materials to be used for bonding to root canal dentin . Bonding inside root canal have always been challenged by the difficultly of moisture control and inability of curing light to reach the apical portion of canal. The high configuration factor (C factor) is considered an added challenge which increase polymerization shrinkage thus jeopardizing the seal. Several materials exhibiting sealing and adhesive qualities have been suggested among which GuttaFlow was recently Introduced .

GuttaFlow is combination of powdered Gutta Percha mixed with resin sealer and applied through a direct delivery system . The manufacture of GuttaFlow advocate its use as sole filling material or a Gutta Percha point can be inserted as single cone . Presence of voids and interface gaps with either technique have been a matter of controversy .