بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / سلوي محمود عقل

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: لا يوجد

Efficiency of different irrigation protocols on Cleanliness and disinfection of root canal An (In-vitro) study

A thesis Submitted to the Faculty of Dentistry
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Dedication

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Abb.	Full term
AO	Acridine orange
AP	Apexit sealer
aPDT	Antimicrobial photodynamic therapy
BHI	Brain heart infusion
CFU	Colony forming unit
CHX	Chlorhexidine
CLSM	Confocal laser scanning microscope
CSI	Conventional syringe irrigation
E.faecalis	Enterococcus faecalis
EDTA	Ethylenediaminetetraacetic acid
ER.Cr:YSGG laser	Erbium, Chromium:Yttrium-Scandium-Gallium-garnet
ER:YAG	Erbium Yttrium Aluminum Garnet
GP	Gutta Percha
HEBP	Hydroxyethylidene bisphosphonate
KTP	Potassium-titanyl phosphate
LAD	Light-activated disinfection
LAI	Laser activated irrigation
NAOCL	Sodium hypochlotite
PAD	Photo-activated disinfection
PBS	Phosphate buffered saline
PI	Propidium iodine
PIPS	Photon-initiated photoacoustic streaming
PUI	Passive ultrasonic irrigation
RR	Reaction rate
RS	RealSeal
SEM	Scanning Electon Microscope
UI	Ultrasonic instrumentation
XP	Xp finisher

Introduction

Shaping and cleaning of root canals is considered a key step during root canal treatment where complete debridement is crucial for subsequent obturation and long-term success. Endodontic procedures use mechanical instrumentation and chemical irrigants in the attempt to three dimensionally debride, clean and decontaminate the endodontic system. Irrigation techniques include manual irrigation with needles and canulas, machine-assisted agitation systems, sonic and ultrasonic energy sources. In general, all file systems generate smear layer and leave debris in the root canal. Sodium hypochlorite (5.25%) as an irrigant alone isn't capable of removing the smear layer and debris. Other irrigants such as 17% ethylene diamine tetraacetic acid (EDTA), 2% chlorhexidine gluconate and 10% citric acid have been used to help eliminate debris, but they have verified limited ability to effectively reach all surfaces of complicated root canal architecture. The presence of debris and smear layer may prevent sealer adaptation to the canal walls and impede penetration of irrigants into dentinal tubules and accessory canals. Accordingly, alternative, more effective methods to debride, clean and penetrate the dentinal walls should be explored.

Throughout the last two decades many activation methods were employed and continuously evaluated. Passive ultrasonic irrigation (PUI) in particular was the method that gained much popularity because it is as effective as it is cheap and affordable. Two of the recent activation methods that have very different concepts are the XP-Endo finisher and the Photon Induced Photoacoustic Streaming (PIPS) technique. The XP-

Introduction

Endo Finisher instrument was introduced with the promise of enhancing root canal cleaning and disinfection

The effectiveness of lasers in endodontics continues to be an area of discussion. Although the use of lasers for endodontic treatment of the root canal system has been reported since the early 1970s, acceptance has been slow. Thermal damage has always been a common feature of dissatisfaction associated with the application of laser photonic energy. PIPS employs Er:YAG laser and its interaction with the aqueous irrigant solutions, thus it is different from previous modes of laser activated irrigation. This technique uses more of the photoacoustic and photomechanical phenomena rather than the photothermal. PIPS activation has an intriguing concept, especially the fact that it allows the activation tip to be only placed in pulp chamber thus allowing for promising results with minimal root canal enlargement.

Therefore, evaluation of efficiency of different irrigation activation protocols on canal cleanliness and disinfection was thought to be of value.