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التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

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قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

Apical Extrusion of debris and cleaning Abilitiy using three Rotary Ni-Ti Sytems

(An In Vitro Study)

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خير علم ما كانت الخشية معه،

فالعلم إن قارنته الخشية فلك

وإلا فعليك...

ابن عطاء الله السكندري

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Dedication

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They say times a healer, but as time goes on, I seem to find it just as hard to face the fact you have gone. I hope that today I made you proud of me.

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Chapter 1

Introduction

Successful root canal treatment depends on proper cleaning of the root canals. In attempt to achieve successful treatment, chemo mechanical preparation must be done in proper way to remove vital and necrotic tissue, dentinal debris and microorganisms. Incomplete removal of debris, smear layer and microorganisms might directly affect the success of endodontic treatment and lead to failure. Therefore, effective cleaning of the entire root canal system is still challenging as till today every available file system still leaves some debris and smear layer within the root canal system especially in the apical third where complete cleaning ability is limited.

The presence of smear layer might compromise the end result of the root canal treatment as it might interfere with the irrigant action, adaptation of the sealer to canal walls and can facilitate the penetration of the irritants into the periradicular tissues

All preparation techniques and instruments leads to some extrusion of debris from apex to the periapical tissue. It has been reported that manual instruments causes more debris extrusion than motor driven instruments, also it has been reported by many

researchers that reciprocated files preparation causes more debris extrusion than rotary files preparation.

The amount of extruded debris might vary according to many factors such as instrumentation technique and other factors related to the instrument such as file size, file shape and type. The preparation method must be done in an attempt to reduce the amount of debris extrusion into the periapical tissues from the apical foramen of the canal.

One of the most important reasons for post operative pain is the extrusion of the debris which includes infected dentin, bacteria and the irrigation solution to the periradicular tissue from root apex during the chemomechanical preparation. This might cause acute inflammatory response and also destroy the periradicular tissues, according to the amount of damage in periapical tissues the post operative pain is moderate to high level.

Incidence of flare ups is estimated to be 1.4-16%. This is partially depending on iatrogenic errors and host related factors.{1}

Technological advancements in rotary nickel-titanium have facilitated the root canal preparation by new design concepts, improving the materials properties by different methods of treatments and more simple and faster techniques so it reduced the amount of iatrogenic errors which used to occur before due to older design and poor material properties.{2,3}.