The Possible Effect of an Anti-Oxidant Addition to Two Dental Irrigants on Surface Morphology and Elemental Profile of Radicular Dentin In Vitro Study using Scanning Electron Microscope and Energy-Dispersive X-ray Analysis

A Thesis submitted to the Faculty of Dentistry, Ain Shams University, in partial fulfillment of the requirements for the Master's Degree in Oral Biology

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Dedication

This work is dedicated to

My family and friends for their love, prayers, support and encouragement throughout my life. They taught me many things in life and without them I would not be here today.

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List of Contents

List of Abbreviations ..... **i**

List of Tables ..... **iii**

List of Figures ..... **iv**

Introduction **1**

Review of Literature

- Structure of Dentin 4
- Radicular Dentin and Endodontic Irrigants 8
- Classification of Endodontic Irrigants 10
- Sodium Hypochlorite 10
- Chlorhexidine Gluconate 18
- Antioxidants and their mechanism of action 22
- Lycopene 25
- Scanning Electron Microscope 28
- Energy Dispersive X-ray Analysis 29

Aim of the Study **31**

Materials and Methods **32**

Results

- Scanning Electron Microscope Examination 37
- Energy Dispersive X-ray Analysis Results 50

Discussion **61**

Conclusions **71**

Recommendations **72**

Summary **73**

References **77**

Arabic Summary **97**

List of Abbreviations

BSED	Back-Scattered Electron Detector
C	Carbon
Ca	Calcium
$Ca(OH)_2$	Calcium Hydroxide
CHX	Chlorhexidine Gluconate
ClO2	Chlorine dioxide
DBA	Dentin Bonding Agent
DCJ	Dentinocemental Junction
DEJ	Dentinoenamel Junction
DNA	Deoxyribonucleic Acid
ECM	Extracellular Matrix Molecule
EDTA	Ethylenediaminetetraacetic acid
EDXA/EDS/XEDS	Energy Dispersive X-ray Analysis
Fig.	Figure
H2O2	Hydrogen Peroxide
HEBP	Human pancreatic estrogen binding protein
$HOCl^-$	Hypochlorous acid
ICP-AES	Inductively Coupled Plasma Atomic Emission Spectrometry
KV	Kilovolt
L	Lycopene
LDL	Low-density lipoprotein
LFD	Large Field Detector

MCJ	Morinada Citrifolia Juice
Mg	Magnesium
MMPs	Matrix Metallo-proteinases
MTAD	Mixture of tetracycline isonomer, an acid and a deterg
NaOCl	Sodium Hypochlorite
NCP	Non-collagenous protein
NH	Amino group
NO2	Nitrogen Dioxide
O	Oxygen
OCl^-	Hypochlorite ions
Org. Mag.	Original Magnification
P	Phosphorous
PA	Phosphoric Acid
PH	Potential Hydrogen
P-value	Probability value
ROS	Reactive Oxygen Species
RS	Thiyl
RSO2	Sulfonyl
SD	Standard Deviation
SE	Secondary Electrons
SEM	Scanning Electron Microscope
SH	Sulphydryl group
SPSS	Statistical Package for Scientific Studies
Wt%	Weight percentage

List of Tables

Table no.	Title	Page
1	Mean percentage weights (wt%) ± Standard Deviations of the five detected elements in radicular dentin for each group.	48
2	Multiple comparisons between the Calcium content (wt%) of the different study groups.	49
3	Multiple comparisons between the Phosphorus content (wt%) of the different study groups.	51
4	Multiple comparisons between the Magnesium content (wt%) of the different study groups.	53
5	Multiple comparisons between the Carbon content (wt%) of the different study groups.	55
6	Multiple comparisons between the Oxygen content (wt%) of the different study groups.	57

List of Figures

Figure no.	Title	Page
1	Saponification reaction between NaOCl and organic tissue……	13
2	Amino acid neutralization reaction between NaOCl and organic tissue……..	13
3	Chloramination reaction between NaOCl and organic tissue……..	14
4	Mechanism of action of CHX…….....	19
5	Structure of lycopene and several isomers....	27
6	Lycopene……	32
7	SEM sputter coater……..…….....	34
8	SEM attached with EDX……..	35
9	SEM micrograph of group 1……..	38
10	SEM micrograph of group 1……..	39
11	SEM micrograph of group 1……..	40
12	SEM micrograph of group 1……..	41
13	SEM micrograph of group 2……..	42
14	SEM micrograph of group 2……..	43
15	SEM micrograph of group 3……..	44
16	SEM micrograph of group 3……..	45
17	SEM micrograph of group 4……..	46
18	SEM micrograph of group 4……..	47
19	SEM micrograph of group 5……..	48