

سامية محمد مصطفى



شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم



سامية محمد مصطفى



شبكة المعلومات الجامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



سامية محمد مصطفى



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله 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



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بعض الوثائق الأصلية تالفة



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بالرسالة صفحات لم ترد بالأصل



**SCANNING ELECTRON MICROSCOPIC STUDY
ON THE EFFECT OF RADIOSURGERY VERSUS
RADIOSURGERY WITH FORMALIN ON
DENTINAL TUBULES OCCLUSION**

Thesis

Submitted in Partial Fulfilment for

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Oral diagnosis and Radiology

By

Kareman Said Mohamed El-Soudany

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Oral Medicine, Periodontology,

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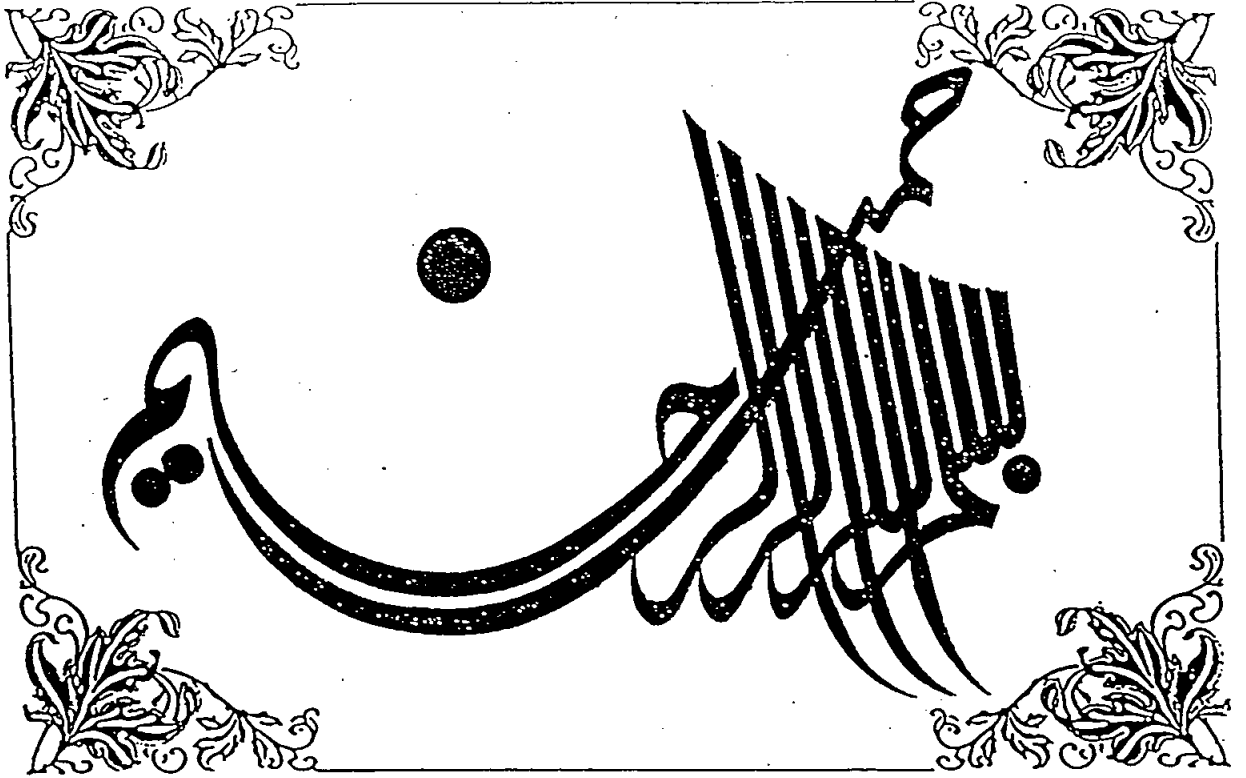
Faculty of Dentistry

Tanta University

1997

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12/1/97



قال الرسول الكريم عليه الصلاة والسلام :

”من أراد الدنيا فعليه بالعلم ومن أراد الآخرة فعليه بالعلم

ومن أرادهما معاً فعليه بالعلم“

صدق رسول الله

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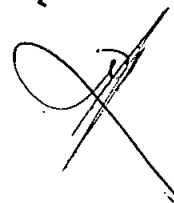
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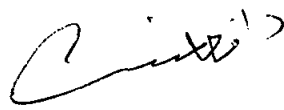
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TO

MY FATHER

MY SON

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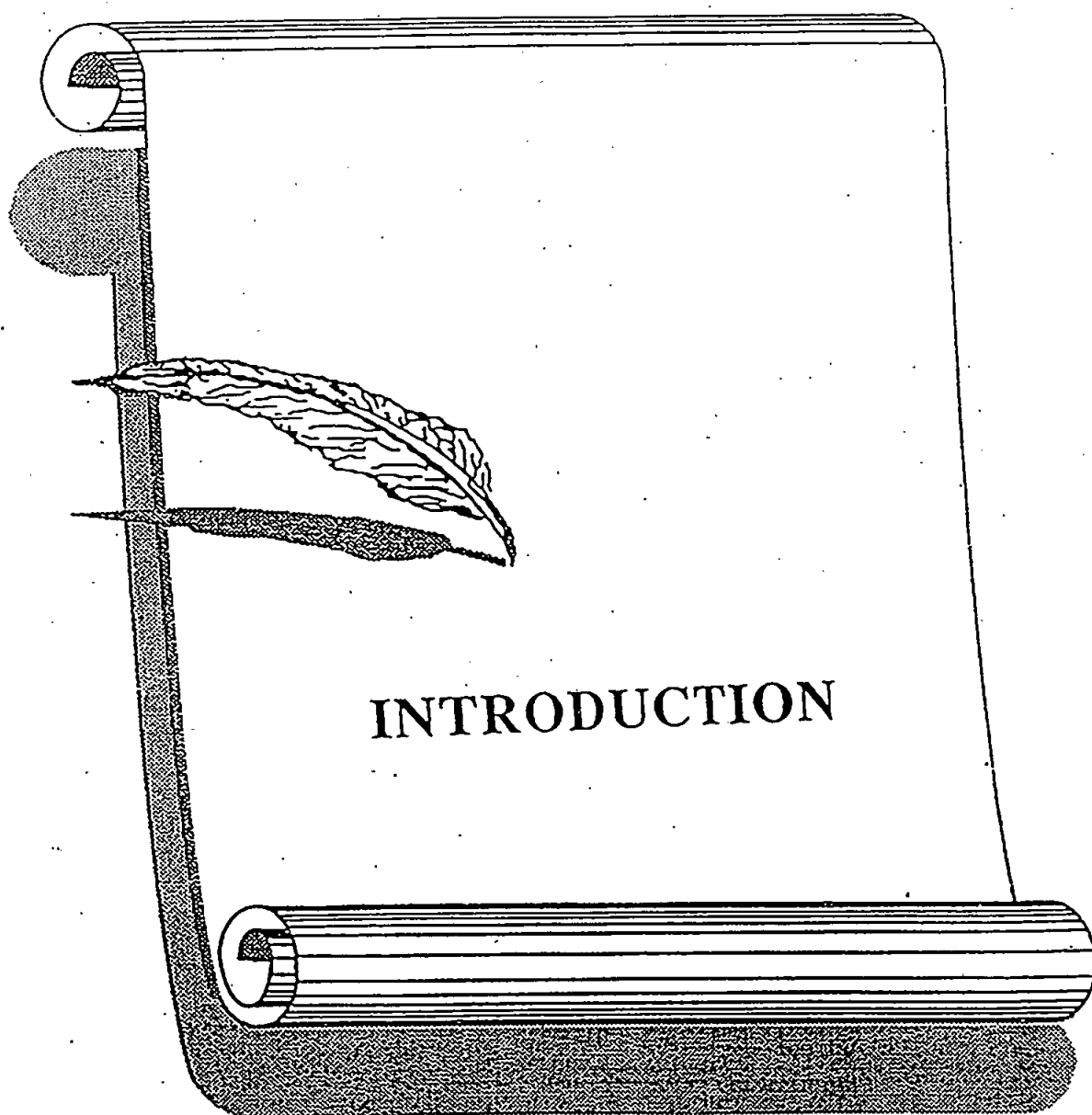
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ABSTRACT

A Scanning Electron Microscopical (SEM) study was conducted to evaluate and compare the efficacy of radiosurgery treatment alone or adjunct to 10% formalin versus the application of formalin alone on the degree of dentinal tubules occlusion and to detect any surface abnormal changes in the root following these treatments. The experimental materials were twenty extracted human teeth. The tested teeth were scaled and root planned. Each tooth was sectioned horizontally below cemento-enamel junction (CEJ) and then perpendicular to the pulp chamber to obtain a dentine disc 5 mm thick. Each dentine disc was cut into 4 small, identical wedge shaped sections. A total of 80 dentine experimental surfaces were divided into four groups, each group contained 20 specimens. Group I served as the control one which received no additional treatment, group II was treated with 10% formalin solution, group III was treated with 10% formalin solution and radiosurgery and group IV was treated with radiosurgery alone.

The specimens were then fixed and examined by SEM. The results of the present study indicated that scaling and root planning performed for hypersensitive root followed by 10% formalin and radiosurgery (partially rectified current & 3.8 MHZ frequency) produced the most complete obliterating effect among the different treatment modalities evaluated. It is concluded that combination of mechanical and radiosurgical treatments adjunct to 10% formalin may present a longer lasting alternative choice in the treatment of dentine sensitivity.



INTRODUCTION

Dentine hypersensitivity is a common intermittent chronic tooth pain sensation that experienced by adult dentate population (Graf & Galasse 1977). It affects the teeth with exposed dentinal tubules. It may result from thermal, tactile or osmotic stimulation. Abrasion, erosion, leaking restorations, root caries, root planning and periodontal therapy may induce exposure of the dentinal tubuli, leading to dentine hypersensitivity (Peden 1977). This condition is not due to cracked teeth, pulpal abscess or occlusal trauma (Dowell and Addy 1983 , Addy 1985, Dowell et al., 1985) .

It may be present on several teeth, in one area of the mouth or on specific tooth. The pain associated with dentine hypersensitivity may vary in the degree and the intensity from a slight amount of sensitivity to excruciating pain (Stout 1955).

The exact mechanism of transmission of the pain response from the dentine to the terminal nerve endings is not clear but there are currently four hypothesis have been proposed.

1. The modulation theory (Jenson & Doering 1987).
2. The transducer theory (Jenson & Doering 1987).

3. The direct nerve stimulus theory (Jenson & Doering 1987, Forrest et al., 1988).
4. The hydrodynamic theory (Krauser 1986 , Muzzin & Johnson 1989).

The hydrodynamic theory is the most widely accepted theory which proposes that the pain producing stimuli causes rapid movement of dentinal fluid in the tubules. Such fluid movement stimulates nerve processes in the pulpal areas of the dentine and/or nerves in the dental pulp.

According to this hypothesis, effective treatment of hypersensitivity requires obturation of the dentinal tubules to reduce or inhibit the movement of dentinal fluid (Brannstrom 1966, Uchida et al., 1980, Greenhill & Pashley 1981).

Previous studies have shown that sensitive teeth have increased number of tubules per unit area and are wider in diameter than those of non-sensitive dentine (Absi et al., 1987). Therefore, reducing the number of open tubules or decreasing their diameters is an aim of therapy for sensitive teeth (Dowell & Addy 1983, Addy & Dowell 1983, Berman 1985 , Pashley & Gallaway 1985).