

بسم الله الرحمن الرحيم



HOSSAM MAGHRABY



شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



HOSSAM MAGHRABY

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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



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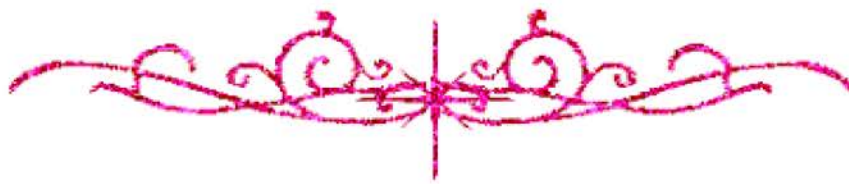
تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



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بعض الوثائق الأصلية تالفة



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بالرسالة صفحات

لم ترد بالأصل



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Tanta University
Faculty of Dentistry

B1E991

**DIGITIZED DENTAL RADIOGRAPHS
AS A DIAGNOSTIC AID IN PERIODONTICS**

THESIS

**Submitted In Partial Fulfillment of
the Requirements of Master Degree in
Oral Medicine, Periodontology, Oral Diagnosis & Radiology**

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1996

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ACKNOWLEDGMENT



I would like to express my sincere thanks and deepest gratitude to Dr. Mona Y. Abd El-Razzak, Associate Professor, Department of Periodontology, Oral Medicine, Oral Diagnosis & Radiology , Faculty of Dentistry, Tanta University for her inspiring Supervision, excellent guidance, and kind help throughout the various phases of this work .

My deep thanks and appreciations are expressed to Dr. Maher M. El-Tounsy, Associate Professor, Department of Periodontology, Oral Medicine, Oral Diagnosis & Radiology, Faculty of Dentistry, Tanta University for his kind help and guidance throughout this work .

I do express my deep thanks and appreciation to my teacher and friend Dr. Hussein I. Saudi, Lecturer of Oral Medicine, Periodontology, Oral Diagnosis & Radiology Faculty of Dentistry, Tanta University, for his great help and guidance throughout this work .

Finally, my sincere thanks and appreciation are expressed to Prof. Samia A. Darwish Professor of Periodontology, Oral Medicine, Oral Diagnosis &

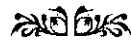
Radiology , Faculty of Dentistry, Tanta University for her effort to provide our department with the scanner and the computer used in the present study .



To My Parents

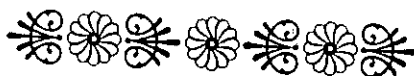


Contents



INTRODUCTION	1
AIM OF THE WORK	4
REVIEW OF LITERATURE	5
- The Digital Subtraction radiography	6
- Uses of Subtraction Radiography	7
- Bone Lesions Detectability	11
- Advantages and Disadvantages of Subtraction Radiography	18
MATERIALS AND METHODS	20
- The standardization device	20
- The Computer Assembly	22
- The software Technique	23
- Observer's form for conventional and Digital Subtraction images	33
RESULTS	34
- The Projection distortion results	34
- The Lesion size changes results	36
- The Lesion site changes results	36

DISCUSSION	62
SUMMARY AND CONCLUSIONS	70
REFERENCES	73
ARABIC SUMMARY	82



Introduction

One of the most important features of periodontal diseases is alveolar bone loss (Manson, 1976) . The distance from the cemento-enamel junction to the crest of the alveolar bone is used as a measure to detect the amount of bone loss (Goodson et al., 1984).

Intra-oral conventional radiographs have been the primary diagnostic method for the assessment of osseous changes due to periodontitis (Jeffcoat, 1992) . However, the information obtained from such radiographs depend on the image quality and abilities of the observer (Rossmann, 1969) .

Over the past two decades many investigators have developed radiographic methods that improved the observer's abilities to detect and measure changes in the alveolar bone (Wenzel, 1990) . However, it was found that the measurement of morphological bone changes is an insensitive method compared to other methods measuring density changes on the radiographs as a result of demineralization or remineralization (Janseen et al., 1989) . In addition, the image quality in the conventional film radiography is determined during exposure and processing of the image. Once the film has left the processing solutions, nothing can be done to improve the image quality except bleaching of dark radiographs (Kaplen et al., 1990) .

Accordingly, it was aimed to find out a technique or a procedure that increases the detectability of small bone changes and eliminates the inherent difficulties of the radiographic interpretation (Reddy, 1992) .

The digital subtraction radiography was introduced into periodontal diagnosis because of its potential of being more sensitive than the conventional radiographs specially when comparing a pair of serial radiographs (Hausmann et al., 1991). In addition, the images in digital radiography are viewed at display stations with a possibility for interactive image manipulation . As such, image quality may be improved prior to interpretation (Wenzel, 1991) .

The idea of the digital subtraction technique is based on superimposition of two radiographs, achieving an overlap of identical anatomic structures in the image, where after the homologues information in one image is subtracted from that in the other . This is achieved by a special computer software and a video camera or a scanner which convert the processed radiographs into images (Wenzel, 1990) .

Generally, the background anatomic structures which conceal the signal of interest in a radiographic image are termed structured or anatomic noise which may be a limiting