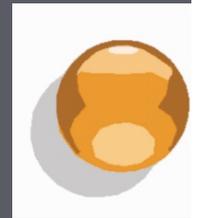
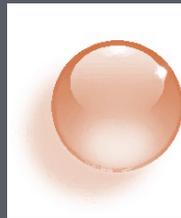
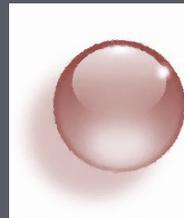


Summer

## Endodontic Solutions



## Biofilm Dissolution and Cleaning Ability of Different Irrigant Solutions on Intraorally Infected Dentin

### Introduction

The aim of this study was to evaluate the biofilm dissolution and cleaning ability of different irrigant solutions on intraorally infected dentin

### Methods

One hundred twenty bovine dentin specimens were infected intraorally by using a removable orthodontic device. Thirty samples were used for each irrigant solution: 2% chlorhexidine and 1%, 2.5%, and 5.25% sodium hypochlorite (NaOCl). The solutions were used for 5, 15, and 30 minutes and at 2 experimental volumes, 500  $\mu$ L and 1 mL. The samples were stained by using acridine orange dye before and after the experiments and evaluated by using a confocal microscope.

The percentage of biofilm, isolated cells, and noncolonized dentin was measured by using a grid system. The differences in the reduction or increase of the studied parameters were assessed by using non-parametric methods ( $P < .05$ ).

### Results

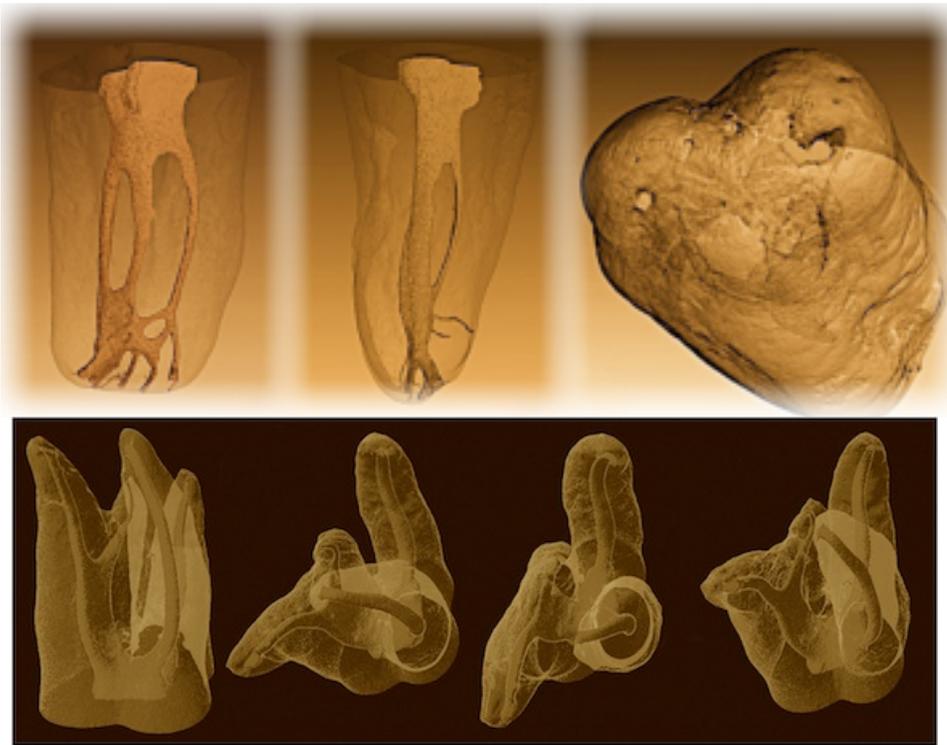
The higher values of biofilm dissolution and non-colonized dentin were found in the 30-minute NaOCl group and in the 5-minute and 15-minute groups of 5.25% NaOCl. The use of 2% chlorhexidine solution did not improve the biofilm dissolution or

increase the cleaning of the dentin in comparison with the NaOCl solutions ( $P < .05$ ).

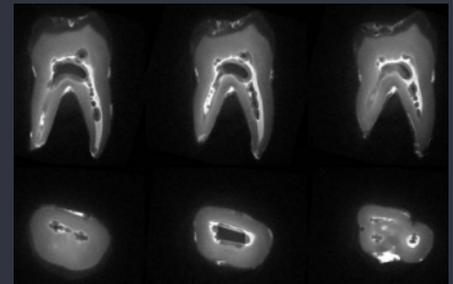
### Conclusions

**Two percent chlorhexidine does not dissolve the biofilms. Thirty minutes of NaOCl are necessary to have higher values of biofilm dissolution and to increase the cleaning of the dentin independently of the concentration in comparison with the 5-minute and 15-minute contact times.**





MINNEAPOLIS / ST. PAUL (June 1, 2011)— A new study conducted by University of Minnesota researchers found that magnetic resonance imaging (MRI) scans using a new MRI technology known as SWIFT are practical for clinical dental applications.



## Introduction

Clinical dentistry is in need of noninvasive and accurate diagnostic methods to better evaluate dental pathosis. The purpose of this work was to assess the feasibility of a recently developed magnetic resonance imaging (MRI) technique, called SWIFT, to visualize dental tissues.

## Methods

Three *in vitro* teeth, representing a limited range of clinical conditions of interest, imaged using a 9.4T system with scanning times ranging from 100 seconds to 25 minutes. *In vivo* imaging of a subject was performed using a 4T system with a 10-minute scanning time. SWIFT images were compared with traditional two-dimensional radiographs, three-dimensional cone-beam computed tomography (CBCT) scanning, gradient-echo MRI technique, and histological sections.

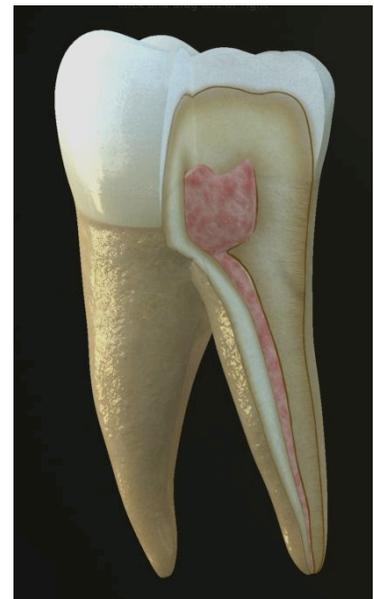
## Results

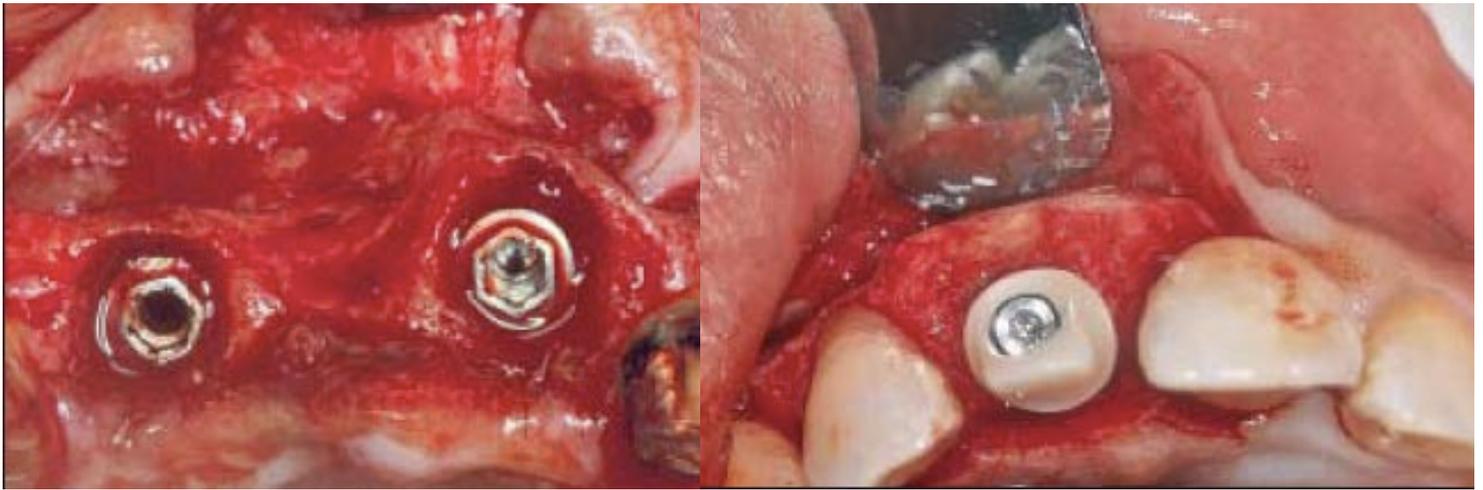
A resolution of 100  $\mu\text{m}$  was obtained from *in vitro* teeth. SWIFT also identified the presence and extent of dental caries and fine structures of the teeth, including cracks and accessory canals, which are not visible with existing clinical radiography

radiofrequency coil produced initial images of multiple adjacent teeth at a resolution of 400  $\mu\text{m}$ .

## Conclusions

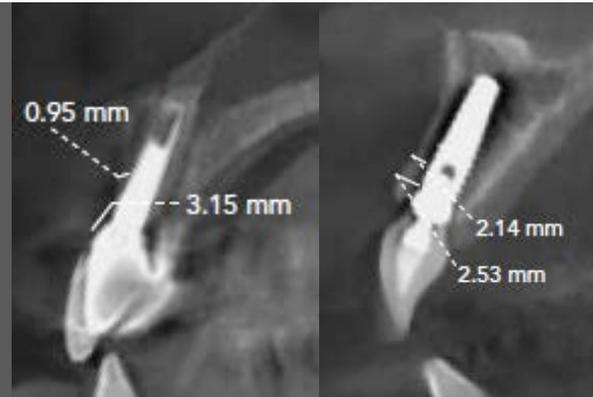
SWIFT MRI offers simultaneous three-dimensional hard- and soft-tissue imaging of teeth without the use of ionizing radiation. Furthermore, it has the potential to image minute dental structures within clinically relevant scanning times. This technology has implications for endodontists because it offers a potential method to longitudinally evaluate teeth where pulp and root structures have been regenerated.





## Dental Cone Beam Computed Tomography Analysis of Postoperative Labial Bone Thickness in Maxillary Anterior Implants: Comparing Immediate and Delayed Implant Placement

(Int J Perio Rest Dent – 2011; 31:215-225)



By Yasukazu Miyamoto DDS, Tadakazu Obama DDS

This study aimed to evaluate the influence of labial alveolar bone thickness and the corresponding vertical bone loss on postoperative gingival recessions around anterior maxillary dental implants. Using cone beam computed tomography (cbCT) scanning, the temporal changes of the three-dimensional images of alveolar bone were monitored to determine hard and soft tissue outcomes of two different implant placement techniques; delayed two-stage and immediate placement. Furthermore, for the delayed two-stage placement, guided bone regeneration was applied using either non-resorbable or resorbable membranes combined with anorganic bovine bone matrix. The comparative results suggested that gingival recessions were significantly lower in delayed two-stage placement, especially when using a non-resorbable membrane compared to immediate placement, and labial bone thickness, measured by cbCT, offered an effectual indicator to assess gingival recession in the anterior region.



## Useful patient education materials

To download the .mov files playable through Quick Time

<https://public.me.com/ken.serota160>

Look for Mandibular molar.mov and Ankylos.mov

