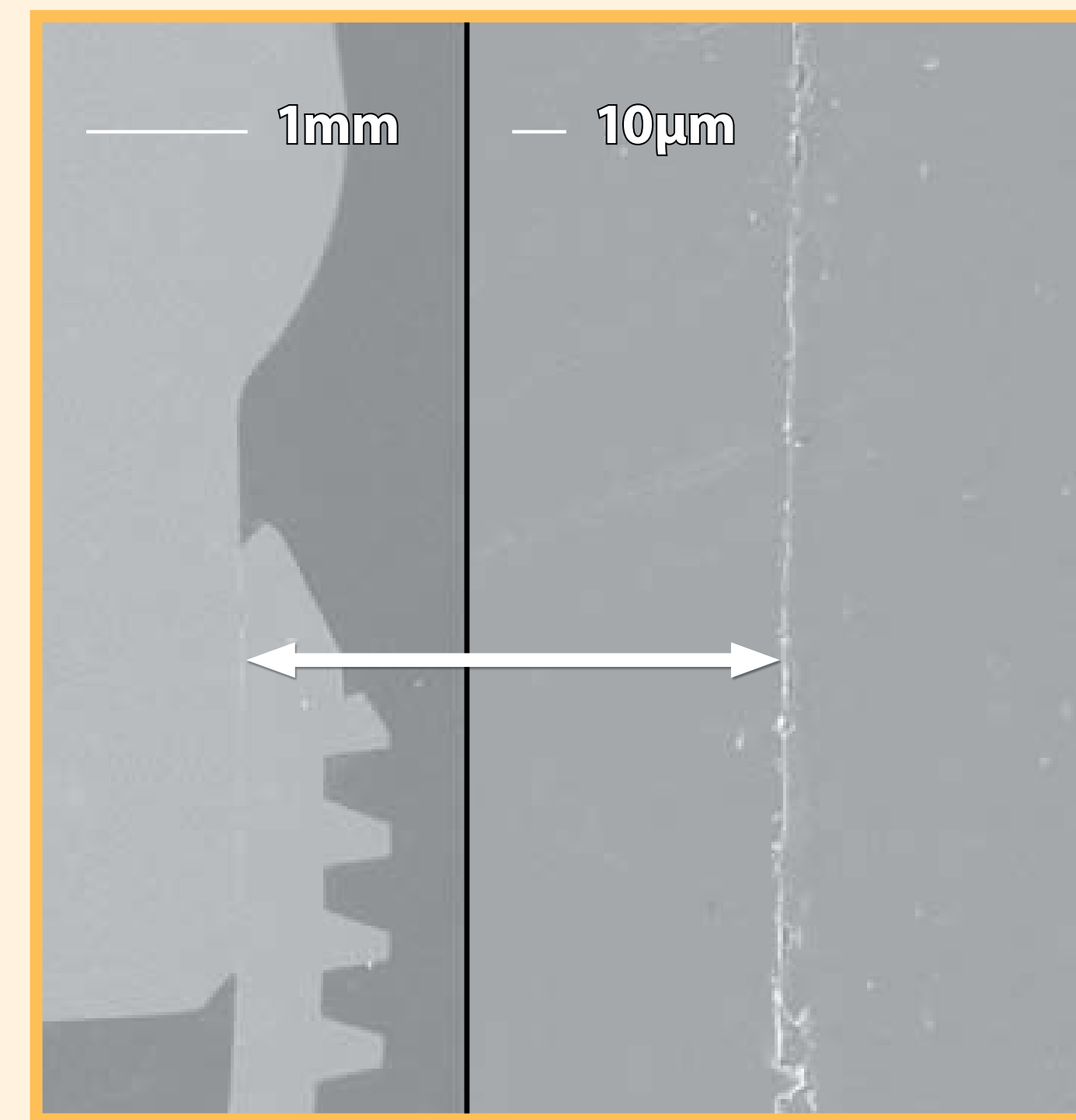


## Introduction:

The microgap associated with a screw-retained implant-abutment connection is often cited as the reason for crestal bone level changes around dental implant-supported restorations. The design of the implant abutment connection may influence crestal bone loss. The purpose of this study was to evaluate crestal bone levels for 50 bacterially sealed locking-taper implants to abutment connections at 3 periods of time after implant placement.



Courtesy of Bicon



Courtesy of Ziedonis Skobe, PhD, Forsyth Institute, Boston, MA and Thomas G.H. Diekwisch, DDS, PhD, UIC College of Dentistry Chicago, IL

## Methods:

A retrospective case series study design was used. The sample (33 patients, 50 implants) was randomly selected from patients who received immediately loaded implants between February 2002 and November 2005. The study measured and compared bone levels on the mesial and distal aspect of the implant-abutment connection at three periods of time: time 1- immediately after implant placement, time 2- at least 7 months (post-integration) after placement and time 3- most recent radiograph available but at least 14 months after placement. Descriptive statistics were used to report the results.

## Results:

The sample consisted of 33 patients who collectively had 50 immediately loaded implants placed. The mean age of the implants was  $2.3 \pm .82$  years. Mean changes in bone levels on mesial (m) and distal (d) surfaces at time: (1), (2) and (3) were reported as: The mean differences for bone levels on mesial and distal surfaces between time (2) and (1) was: on the mesial,  $0.3 \pm 0.7$  mm and on the distal,  $0.4 \pm 0.6$  mm. The mean differences for bone levels on mesial and distal surface between time (3) and (1) was: on the mesial,  $1.0 \pm 2.1$  mm and on the distal,  $1.2 \pm 2.1$  mm. The mean differences for bone levels on mesial and distal surface between time (3) and (2) was: on the mesial,  $0.2 \pm 0.7$  mm and on the distal,  $0.2 \pm 0.7$  mm.



October 16, 2003



November 10, 2004



August 19, 2005



September 4, 2003



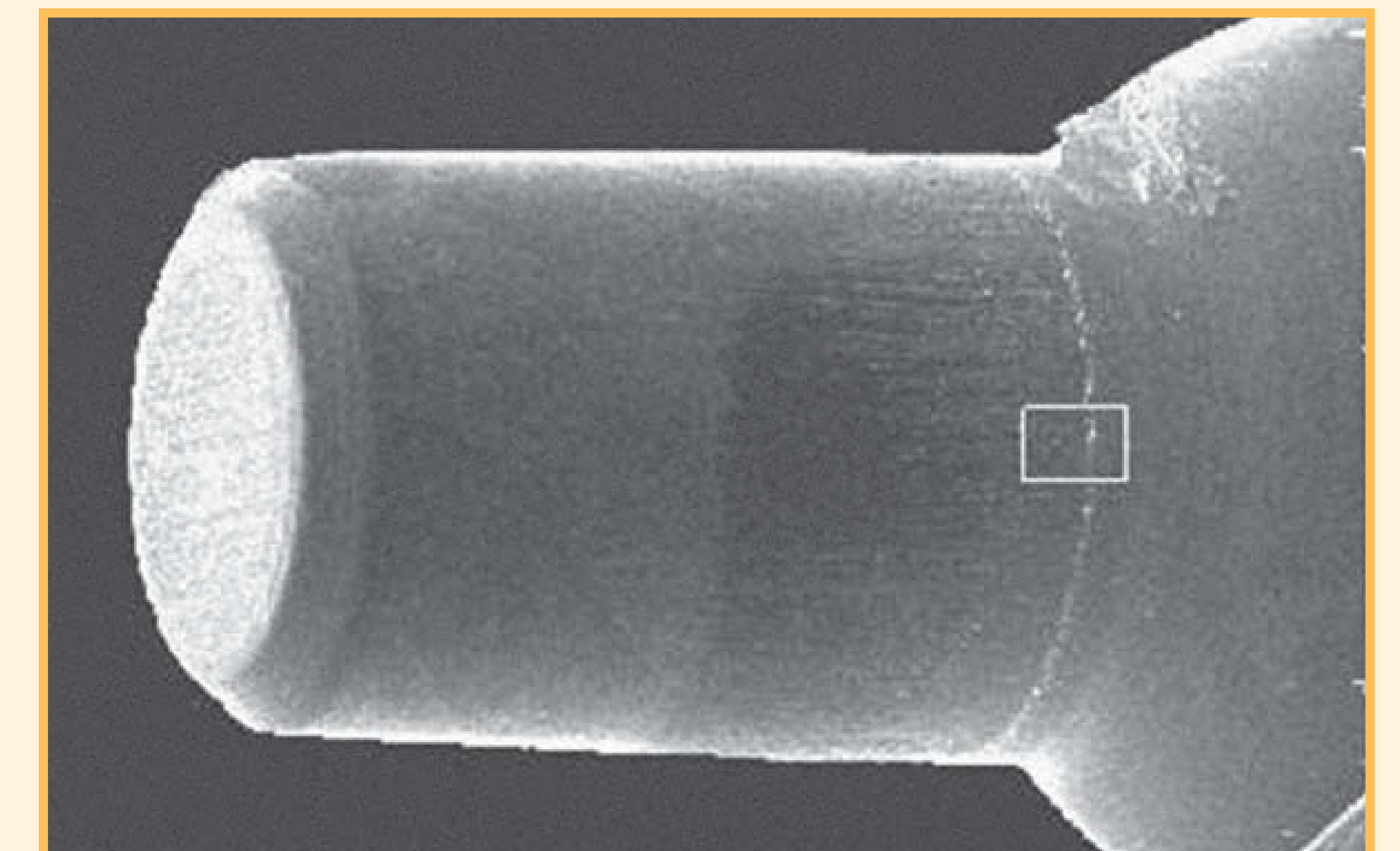
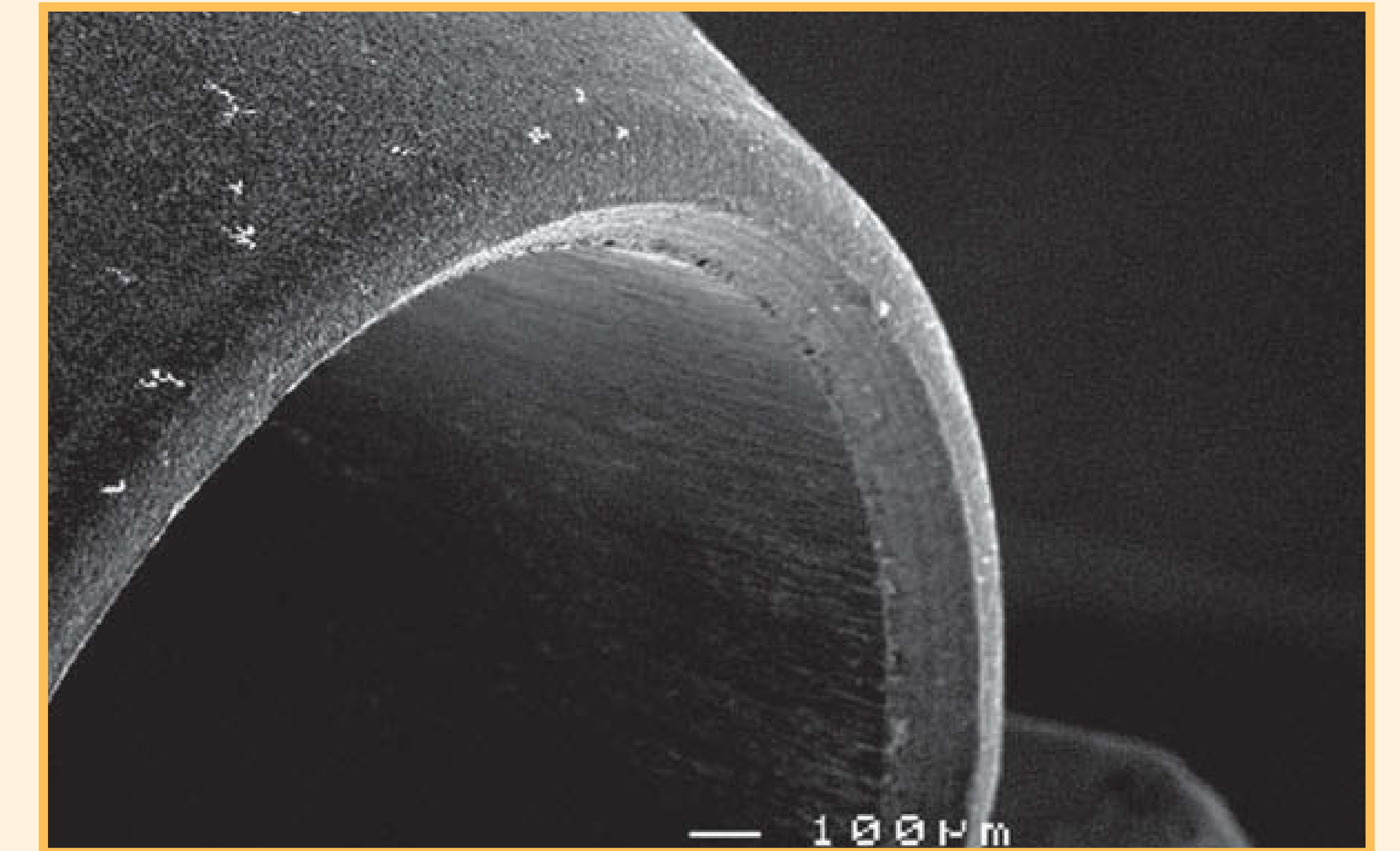
August 24, 2004



June 7, 2006

## Conclusion:

An increase in mesial and distal crestal bone levels was found during the observation period. This could suggest that the bacterially sealed screwless 1.5° locking-taper implant to abutment connection may have an important role in maintaining crestal bone levels around implants of this design.



Courtesy of Serge Dibart, DMD, Martha Warbington, MS, Ming Fan Su, DMD, MS, Department of Periodontology and Oral Biology, Boston University School of Dental Medicine, Boston, MA and Ziedonis Skobe, PhD, Forsyth Institute, Boston, MA