

AMERICAN SOCIETY OF CATARACT AND REFRACTIVE SURGERY

JOURNAL OF
**CATARACT &
REFRACTIVE SURGERY**

EUROPEAN SOCIETY OF CATARACT AND REFRACTIVE SURGEONS

Register or Login: Password: Auto-Login [Reminder]

Search for

[Advanced Search](#) - [MEDLINE](#) - [My Recent Searches](#) - [My Saved Searches](#) - [Search Tips](#)

JOURNAL HOME
CURRENT ISSUE
BROWSE ALL ISSUES
EDITORS' CHOICE
SEARCH THIS JOURNAL
JOURNAL INFORMATION
• Aims and Scope
• Editorial Board
• Submit Manuscript
• Author Information
• Abstracting/Indexing
• Contact Information
• Society Information
• Pricing Information
SUBSCRIBE TO JOURNAL
INFO FOR ADVERTISERS
VISIT OPHSOURCE
RSS

Volume 35, Issue 1, Pages 35-41 (January 2009)

◀ previous 20 of 47 next ▶

Corneal architecture of femtosecond laser and microkeratome flaps imaged by anterior segment optical coherence tomography

Burkhard von Jagow, MD, Thomas Kohnen, MD

Received 8 May 2008; received in revised form 20 August 2008; accepted 6 September 2008.

Purpose

To assess and compare the morphology of laser in situ keratomileusis flaps (LASIK) created by a 60 kHz femtosecond laser and a mechanical microkeratome.

Setting

Department of Ophthalmology, Johann Wolfgang Goethe-University, Frankfurt am Main, Germany.

Methods

Anterior segment optical coherence tomography (AS-OCT) (Visante) was used to assess 1 week postoperatively the morphology of 20 LASIK flaps created with the IntraLase femtosecond laser or the Zyoptix XP microkeratome. The flap diameter and flap thickness were assessed at 20 measuring points across each flap. First, the repeatability of the AS-OCT flap measurement was evaluated. On this basis, the dimensions of femtosecond laser flaps and microkeratome flaps were tested and their regularity, reproducibility, and accuracy compared.

Results

The method was approved with a repeatability of maximum 8.9 μm. The femtosecond laser flaps were more regular than the microkeratome flaps ($P = .02$). The reproducibility of flap morphology was not different in the central 1.0 mm radius area ($P = .26$); however, the femtosecond laser was significantly more precise than the microkeratome in the peripheral area ($P = .001$). The mean thickness of the femtosecond laser flap was significantly more accurate than the mean thickness of the microkeratome flap ($P = .01$), with a mean deviation of +16.9 μm and 40.8 μm, respectively.

Conclusions

The flap architecture created with the femtosecond laser was more regular and accurate than the flap architecture created with the microkeratome.

ABSTRACT
FULL TEXT
FULL-TEXT PDF (454 KB)
CITATION ALERT
CITED BY
RELATED ARTICLES
EXPORT CITATION
EMAIL TO A COLLEAGUE
REPRINTS/PERMISSIONS
BOOKMARK ARTICLE
FULL TEXT ELSEWHERE

More periodicals:

FIND A PERIODICAL
FIND A PORTAL
GO TO PRODUCT CATALOG

From the Department of Ophthalmology (von Jagow, Kohnen), Johann Wolfgang Goethe-University, Frankfurt am Main, Germany, and the Cullen Eye Institute (Kohnen), Baylor College of Medicine, Houston, Texas, USA



Corresponding author: Thomas Kohnen, MD, Johann Wolfgang Goethe-University, Department of Ophthalmology, Theodor-Stern-Kai 7, 60590 Frankfurt am Main, Germany.

Neither author has a financial or proprietary interest in any material or method mentioned.

Presented in part at the 21. Kongress der Deutschsprachige Gesellschaft für Intraokularlinsen-Implantation, Interventionelle und Refraktive Chirurgie (DGII), Potsdam, Germany, March 2007.

PII: S0886-3350(08)00961-9

doi:10.1016/j.jcrs.2008.09.013

© 2009 ASCRS and ESCRS. Published by Elsevier Inc. All rights reserved.

◀ previous 20 of 47 next ▶

Copyright © 2009 Elsevier, Inc. All rights reserved | Privacy Policy | Terms & Conditions | Feedback | About Us | Help | Contact Us |
The content on this site is intended for health professionals.