DOI:10.14744/bej.2023.82542
Beyoglu Eye J 2023; 8(3): 237-238

Letter to Editor

The Importance of Using CBI-LVC for Detecting Ectasia in Post-Refractive Eyes

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Dear Editor,

We have read the article by Yilmaz et al. with great interest (1). The study aimed to detect subclinical ectasia in the fellow eye of two patients who underwent femtosecond-assisted laser in situ keratomileusis surgery (FS LASIK) and developed post-LASIK clinical and topographical ectasia in the other eye, using the Corvis ST tonometer. The authors observed that, despite the topographical and clinical findings not being consistent with corneal ectasia, the corneal biomechanical index (CBI), tomographic biomechanical index (TBI), and Belin-Ambrósio Deviation Display values suggested biomechanical weakness.

However, we would like to draw attention to an important aspect concerning the detection of ectasia in post-refractive eyes. It is worth noting that the CBI was specifically designed to distinguish between normal corneas from those affected by keratoconus, exhibiting a high level of sensitivity and specificity also when used alone (2). Moreover, TBI was developed as a combined parameter based on Scheimpflug imaging from the Pentacam (Oculus Optikgeräte GmbH) and biomechanical assessment from the Corvis ST, to advance the ability to detect clinical and subclinical ectasia. It has shown the ability in identifying ectasia when compared to alternative topometric, tomographic, and biomechanical parameters. It has exhibited a high sensitivity for detecting subclinical (fruste) ectasia, particularly in cases where one eye has obvious ectasia, whereas the other eye appears to have normal tomographic indices (3). Numerous studies have reported significant changes in corneal biomechanical properties post-refractive surgery (4-6). Hence, CBI and TBI resulting from the analysis of post-refractive corneas are going to be always altered. The modified corneal structure can lead to inaccurate interpretations and erroneous assessments when using these indices. Therefore, caution should be exercised when using them in the analysis of post-refractive corneas, as they were primarily developed to detect ectasia in normal corneas. We share the authors' concern regarding the need for the early recognition of post-refractive ectasia to prevent potential complications, which could be managed effectively with corneal crosslinking, a procedure aimed at stabilizing the cornea and halting the progression of ectasia (7).

In light of the increasing prevalence of refractive surgeries such as LASIK and PRK, it is crucial to employ precise and dependable methods for detecting potential complications in patients who have undergone these procedures. Therefore, we suggest to the authors the utilization of validated diagnostic techniques specifically designed for post-refractive

How to cite this article: Ferraro V, Ambrósio Jr R, Vinciguerra P, Vinciguerra R. The Importance of Using CBI-LVC for Detecting Ectasia in Post-Refractive Eyes. Beyoglu Eye J 2023; 8(3): 237-238.
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Submitted Date: June 19, 2023 **Revised Date:** June 24, 2023 **Accepted Date:** July 21, 2023 **Available Online Date:** September 13, 2023
Beyoglu Eye Training and Research Hospital - Available online at www.beyoglueye.com

eyes, such as the Corvis Biomechanical Index-Laser Vision Correction (CBI-LVC) (8). This index is highly sensitive and specific and can differentiate post-LVC ectasia from stable post-LVC cases, regardless of the type of LVC surgery performed. CBI-LVC is now available on the Corvis ST platform as a part of the implemented software.

In conclusion, as the number of refractive surgeries continues to rise, it becomes paramount to adopt advanced diagnostic methods for the early detection of ectasia in post-refractive eyes. We suggest the authors to implement their Corvis ST with CBI-LVC, which offers a more comprehensive and accurate assessment of corneal biomechanics in post-refractive corneas, enabling the identification of subtle irregularities that may indicate ectasia at an early stage.

Disclosures

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

Authorship Contributions: Concept: V.F., R.A., P.V., R.V.; Design: V.F., R.A., P.V., R.V.; Supervision: V.F., R.A., P.V., R.V.; Resource: V.F., R.A., P.V., R.V.; Analysis and/or interpretation: V.F., R.V.; Literature search: V.F., R.V.; Writing – V.F., R.V.; Critical reviews: V.F., R.A., P.V., R.V.

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