LUPINE PUBLISHERS

Trends in Ophthalmology
Open Access Journal

DOI: 10.32474/TOOAJ.2023.04.000176

ISSN: 2644-1209

Mini Review

Post-Lasik Epithelial Ingrowth, A Short Review

Behzad Fallahi Motlagh[1], Afshin Lotfi[1] and Saba Asghari Kaleibar[2]*

Department of Ophthalmology, Tabriz University of Medical Sciences, Tabriz, Iran

***Corresponding author:** Saba Asghari Kaleibar, Department of Ophthalmology, Tabriz University of Medical Sciences, Tabriz, Iran

Received: February 21, 2023 **Published:** March 08, 2023

Mini Review

The history of contemporary laser in situ keratomileusis (LASIK) returns to 1985 when Peyman first presented the idea of performing laser ablation in a corneal flap. In 1990, Pallikaris completed the first LASIK procedure in a rabbit model. To date, LASIK remains the most widely performed laser refractive surgery worldwide, with over 1.2 million LASIK surgeries being performed annually in the USA and Europe. Since its introduction, the role of LASIK has extended from the preliminary improvement of simple refractive errors to additional indications, containing the management of postkeratoplasty astigmatism/ametropia, postcataract surgery refractive error and presbyopia.

The long-standing efficiency, expectedness and security of LASIK have been well-known in the literature. A recent systematic review of LASIK in 67 893 eyes described admirable clinical outcomes after new LASIK surgical procedure; 99.5% of cases completed uncorrected distance visual acuity of 6/12 or better and 98.6% of them did spherical equivalent refraction within ±1.0 dioptre (D) of target refraction[1,2].

However, the establishment of a line among the flap and the basic corneal stroma may cause flap-related and flap-stromal interface difficulties like displacement of flap, infectious keratitis, diffuse lamellar keratitis and epithelial ingrowth (EI). Post-LASIK epithelial ingrowth (PLEI) is an infrequent problem that is considered by the ingrowth of corneal epithelium at the border among the flap and stromal bed after LASIK, resulting in a variety of clinical manifestations [3,4].

The prevalence of post primary LASIK EI is not high, probably from 0.9% to 3.9%. Though, the risk of EI is meaningfully raised in numerous clinical conditions, particularly when the flap is elevated for retreatment. EI has been infrequently reported after trauma and further types of intervention such as sharp trauma, keratoplasty, cataract operation and pterygium surgery. These clinical expressions are due to the accidental progression of corneal epithelial cells within the intraocular space, leading to creation of epithelial cells on the exterior of intraocular constructions like ciliary body, iris, lens capsule, posterior cornea and anterior chamber angle [5].

A comprehensive knowledge of these risk factors allows enhanced preoperative patient advising and risk evaluation. Modifiable and non-modifiable risk factors of epithelial ingrowth following LASIK include:

a. Modifiable risk factors such as surgical instrumentation, surgical technique during retreatment, conformation of LASIK flap edge, corneal epithelial injury and LASIK flap dislocation

b. Non-modifiable risk factors like increased age (weak evidence), type 1 diabetes mellitus, corneal epithelial basement membrane dystrophy or recurrent corneal erosion syndrome, Hyperopic LASIK > myopic LASIK and flap lift for retreatment.

References

1. Alió JL, Ortiz D , Muftuoglu O (2009) Ten years after photorefractive keratectomy (PRK) and laser in situ keratomileusis (LASIK) for moderate to high myopia (control-matched study). Br J Ophthalmol 93(10): 1313-1318.
2. Sandoval HP, Donnenfeld ED, Kohnen T, Richard Potvin, David M Tremblay, et al. (2016) Modern laser in situ keratomileusis outcomes. J Cataract Refract Surg 42(8): 1224-1234.
3. Mohamed TA , Hoffman RS , Fine IH (2011) Post-laser assisted in situ keratomileusis epithelial ingrowth and its relation to pretreatment refractive error. Cornea 30(5): 550-552.
4. Caster AI , Friess DW , Schwendeman FJ (2010) Incidence of epithelial ingrowth in primary and retreatment laser in situ keratomileusis. J Cataract Refract Surg 36(1): 97-101.
5. Güell JL , Verdaguer P , Mateu-Figueras G , Felicidad Manero, Merce Morral, et al. (2014) Epithelial ingrowth after LASIK: visual and refractive results after cleaning the interface and suturing the lenticule. Cornea 33(10): 1046-1050.

DOI: 10.32474/TOOAJ.2023.04.000176