

David Shih-Chung Lai, MD
Dennis Hon-Jei Tseng, MD
Department of Ophthalmology,
Taipei Medical College Hospital

Results and Experience with Myopic Lasik and Toric Lasik for High Myopia and High Myopic Astigmatism

Key Words

Laser in situ keratomileusis (LASIK)
Myopia
Astigmatism
Aspheric multizone
Laser disc

ABSTRACT

Laser in situ keratomileusis (LASIK) is a very safe and effective operation combining the advantages of lamellar keratoplasty with the precision of excimer laser corneal ablation. The purpose of this study is to evaluate the surgical results of myopic LASIK using aspheric multizone technology and toric LASIK using the laser disc with the Summit SVS Apex Plus excimer laser in correcting high myopia (above -6.00 D) and high myopic astigmatism. We studied 424 eyes in 235 cases of high myopia with an average S.E. diopter of -10.36 D and 130 eyes in 87 cases of high myopic astigmatism with an average spherical diopter of -8.65 D and cylindrical diopter of -2.17 D. LASIK surgery was performed with ALK and Summit SVS Apex Plus. Cases were followed up for at least 6 months from December 1996. After myopic LASIK in 424 high myopic eyes: 397 eyes (93.6%) were within +/- 1.00 D of the intended correction, 401 eyes (94.6%) were above 20/40 in uncorrected VA, and 412 eyes (97.2%) maintained the same best corrected VA. After toric LASIK in 130 high myopic and astigmatic eyes: 118 eyes (90.8%) were within +/- 1.00 D of the intended correction, 115 eyes (88.5%) were above 20/40 in uncorrected VA, and 123 eyes (94.6%) maintained the same best corrected VA. Surgical complications and problems were also evaluated. The study suggests the convincing predictability, effectiveness, safety, and stability of myopic LASIK for high myopia and toric LASIK for high myopic astigmatism. (N. Taipei J. Med. 2000; 3:190-200)

INTRODUCTION

Refractive corneal lamellar surgery began in the late 1940s and has its roots in the ingenious work of Dr. Jose I. Barraquer. He was the first to understand that

the refractive power of the eye could be altered by the subtraction or addition of corneal tissue.¹ He then attempted refractive cutting by removing stroma from either the bed (keratomileusis in situ) or the stromal surface of the corneal lamellar disc. The many technical

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Correspondence: Dr. David Shih-Chung Lai
Department of Ophthalmology, Taipei Medical College Hospital
252, Wu-Hsing Street, Taipei 110, Taiwan, R.O.C.
Tel / Fax: 886-2-2737-5042