

-4 ~ -7 diopter
 가

Goldmann

= =
 (PRK) 가 (LASIK)
 가 PRK 14 22 , LASIK -4 ~ -7 diopter 10 18
 , 1 · 3 · 6 Goldmann
 6 , PRK,
 LASIK (p<0.01)
 (p=0.16), (p=0.19) (P=0.29). PRK, LASIK
 PRK LASIK
 (41:613~619, 2000).

Abstract

The Differences of IOP and Factors Influencing IOP Measured by Goldmann Applanation Tonometer after Photorefractive Keratectomy and Laser In Situ Keratomileusis in Myopic Eyes between -4~-7 Diopters

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To evaluate the differences and factors to be considered when measuring

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intraocular pressure after photorefractive keratectomy(PRK) and laser in situ keratomileusis(LASIK), we prospectively reviewed the medical records of myopic eyes between -4 ~ -7 diopters. Among them, 14 patients, 22 eyes underwent PRK and 10 patients, 18 eyes received LASIK. We measured intraocular pressures by Goldmann applanation tonometry preoperatively, 1 month, 3 months and 6 months postoperatively in each group. Corneal curvatures, central corneal thicknesses were measured and compared when measuring intraocular pressure. The postoperative intraocular pressure was lower than the preoperative value in both groups($p < 0.01$), and the decreased amount of IOP were not statistically different in both groups($p = 0.29$). Targeted ablation depth($p = 0.19$) and ablation diameter($p = 0.16$) did not show statistically significant correlation to postoperative IOP decrease. In measuring intraocular pressure after PRK or LASIK, attention should be given to the pressure and its interpretation(J Korean Ophthalmol Soc 41:613~619, 2000).

Key Words : Goldmann applanation tonometer, Intraocular pressure, LASIK, PRK

(PRK) 가 (LASIK) , , , . PRK
 1,2) . PRK 14 22 , LASIK 10 , 18
 가 , , , , ,
 3-5) . PRK
 LASIK , , , , ,
 가 6) . PRK, LASIK 가
 , 1 , 3 , 6 2
 diopter . 가 -4 ~ -7 .
 PRK LASIK PRK
 , LASIK
 1 , 3 , 6 Gold- (Autorefractive keratometer, RK-
 mann 3, Canon, Japan)가 ,
 . Orbscan Slit Scan
 . Corneal Topography/Pachymeter(ORBTEK
 Inc., Salt Lake city, Utah, USA)가
 . Keratome (Coher-
 ent-Schwind, Neuostheim, Germany)
 1997 10 1998 3
 microkeratome automated micro-
 keratome(Automated Corneal Shaper, Chi-
 ron Vision, USA) . PRK

가 6 PRK 2 , LASIK 4 6 , 50
 0.3% ofloxacin 2 PRK 2 , LASIK .
 () 0.1% fluometholone() 36~84 μ m 66.2 \pm 16.7 μ m
 4 , . PRK, LASIK LASIK
 5 69.0 \pm 13.2 μ m,
 . LASIK 0.3% ofloxacin(-5.66 \pm 0.90D,
) 0.125% prednisolone() 44.5 \pm 1.2D . PRK
 4 1 62.9 \pm 16.4 μ m,
 1 . PRK, -5.48 \pm 0.97D, 44.4
 LASIK \pm 1.4D . LASIK
 1 , 3 , 6 15.2 \pm 2.9mmHg, PRK 15.4 \pm 2.1mm
 Hg (Table 1).
 1 , 3 , 6 LASIK
 , 6 10.7 \pm 2.9mmHg, 11.2 \pm 2.7mmHg, 11.4 \pm 2.1
 (20, 30, 40), mmHg , PRK 10.8 \pm 2.9mmHg, 11.6
 , , , \pm 2.7mmHg, 12.2 \pm 1.78mmHg 6
 , (PRK, LASIK)
 . Statistical (p<0.01) LASIK
 analysis software(SAS institute, Cary, NC) PRK
 Wilcoxon signed rank , (p=0.29). 1 , 3 ,
 Mann-Whitney , Kruskal Wallis 6 LASIK 4.5
 . \pm 3.1mmHg, 4.0 \pm 2.9mmHg, 3.7 \pm 2.2mmHg ,
 PRK 4.2 \pm 2.3mmHg, 3.8 \pm 2.1mmHg,
 3.2 \pm 1.8mmHg (Table 2). 1
 , 3 , 6 LASIK
 20~55 , 560 \pm 30.0 μ m, 479 \pm 32.1 μ m, 497
 30.4 \pm 8.2 . 20 \pm 33.4 μ m, 506 \pm 28.4 μ m , PRK
 22 PRK 14 , LASIK 8 30 558 \pm 27.4 μ m, 482 \pm 34.9 μ m, 496 \pm 31.5 μ m, 505
 10 PRK 4 , LASIK 6 , 40 \pm 28.7 μ m PRK (P<0.05), LASIK (P

Table 1. Characteristics of patients

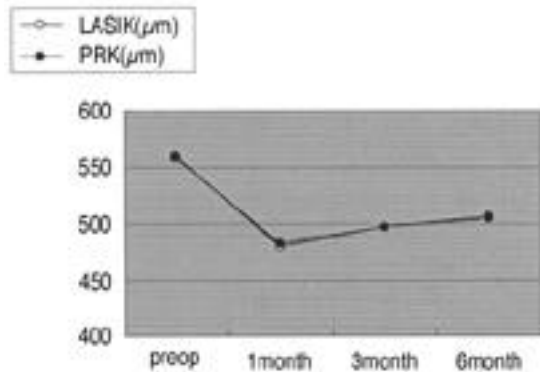
	LASIK	PRK
Number of eyes(40)	18	22
Male(10)	3	7
Female(30)	15	15
Age(yrs)	30.5 \pm 8.5	30.2 \pm 8.1
Pre-op IOP(mmHg)	15.2 \pm 2.9	15.4 \pm 2.1
Pre-op K reading(D)	44.5 \pm 1.2	44.4 \pm 1.4
Pre-op spherical equivalent(D)	-5.66 \pm 0.9	-5.48 \pm 1.0
Pre-op central corneal thickness(μ m)	560 \pm 30.0	558 \pm 27.4

PRK: Photorefractive keratotomy
 LASIK: Laser In Situ Keratomileusis
 IOP: Intraocular pressure

Table 2. The differences between the preoperative IOP and the postoperative IOP

	LASIK(mmHg)	PRK(mmHg)
1 month	4.5±3.1	4.2±2.3
3 month	4.0±2.9	3.8±2.1
6 month	3.7±2.2	3.2±1.8

PRK:Photorefractive keratectomy
 LASIK: Laser In Situ Keratomileusis
 IOP: Intraocular pressure



PRK:Photorefractive keratectomy
 LASIK: Laser In Situ Keratomileusis
 Figure 1. The change of mean central corneal thickness after LASIK and PRK

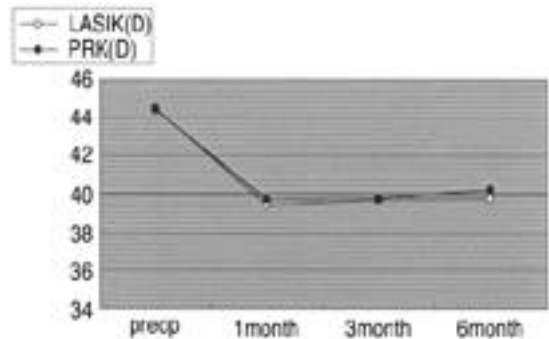
<0.05) 1, 3, 6
 가
 (Fig. 1). 1, 3, 6
 LASIK 44.5±1.2, 39.4
 ±1.4, 39.7±1.3, 39.8±1.3D PRK
 44.4±1.4, 39.7±1.7, 39.8±1.9, 40.2
 ±1.5D (Fig. 2).
 6
 LASIK 54.0±18.8μm, PRK 53.3±
 13.5μm (p=0.99),
 6
 LASIK 4.7±0.8D, PRK
 4.2±1.0D, LASIK

(p=0.20, Table 3). 6

Table 3. The differences of decrease of central corneal thickness and corneal curvature between LASIK and PRK at 6 months postoperatively

	LASIK	PRK	p(MW test)
Decrease of corneal curvature(D)	4.7±0.8	4.2±1.0	0.20
Decrease of corneal thickness(μm)	54.0±18.8	53.3±13.5	0.99

PRK:Photorefractive keratectomy
 LASIK: Laser In Situ Keratomileusis
 MW: Mann Whitney



PRK:Photorefractive keratectomy
 LASIK: Laser In Situ Keratomileusis
 Figure 2. The changes of mean keratometry reading after LASIK and PRK

LASIK 20, 30, 40
 3.7±2.8, 3.2±2.7, 3.1±2.4mmHg
 가
 (p=0.45).
 6
 5.99mm 3.1±2.1mmHg, 6.00~6.49mm
 3.4±1.8mmHg, 6.50mm 3.6±1.7
 mmHg (p=0.16).
 6
 50μm 2.9±2.9mmHg, 50
 μm 3.9±2.0mmHg

(p=0.19).

PRK,

19,20)

PRK

가 (LASIK)
(PRK)

3). LASIK PRK

가
가
가

가

7-9)

PRK LASIK

가

6

70 μ m

6

LASIK

0.59mmHg

LASIK, PRK

가

가

Mark

3D 가

1mm

Goldmann
Imbert-Fick

Hg 가

13)

PRK,

LASIK

1

, 3

, 6

6

LASIK

4.7 \pm 0.8

가

가

dioptr, PRK

4.2 \pm 1.0 dioptr

10)

(p=0.20). LASIK

11-13). Goldmann

가

0.52mm

가

14)

3-6)

microkeratome

suc-

PRK LASIK

tion ring

21). LASIK

PRK

가

Goldmann

22-24)

,

,

Goldmann

11,14-18). Ehler

가 70 μ m

Goldmann

5mmHg

LASIK

가

11)

6

LASIK

54.0

LASIK

\pm 18.8 μ m, PRK

53.3 \pm 13.5 μ m

suction ring

3.7 \pm 2.2mmHg

3.2 \pm

1.8mmHg가

70

가

PRK

LASIK

μ m

LASIK

4.79mmHg,

가

PRK

4.20mmHg

LASIK

Ehler

3,4,6,25)

가

가²⁵⁾ .
 가 . PRK
²⁴⁾ .
 ,
 가 가 .
 ,
 Goldmann
 PRK, LASIK
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 LASIK 가 가 ,
 , LASIK
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