

BRIEF REPORTS

Laser In Situ Keratomileusis: Association with Increased Width of Palpebral Fissure

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PURPOSE: To report the preoperative and postoperative palpebral fissure width in eyes undergoing laser in situ keratomileusis.

METHODS: In a prospective study, 165 consecutive eyes of 87 patients (41 men and 46 women with a mean \pm standard deviation age of 32.9 (\pm 9.5) years) had laser in situ keratomileusis using a Summit (Waltham, MA) APEX PLUS excimer laser and a Moria (Antony, France) LSK microkeratome. The width of palpebral fissure was measured preoperatively, 3 months or 6 months after laser in situ keratomileusis. Patients were classified into three groups as follows: hard contact lens users group ($n = 61$), soft contact lens users group ($n = 63$), and non-contact lens users group ($n = 41$).

RESULTS: The average width of palpebral fissure increased after laser in situ keratomileusis in all three groups. The hard contact lens users group increased from 7.6 (\pm 1.6) mm to 8.7 (\pm 1.2) mm ($P < .0001$) and non-contact lens users group increased from 7.7 (\pm 1.9) mm to 8.9 (\pm 1.9) mm ($P < .0001$).

CONCLUSION: These results suggest that laser in situ keratomileusis may be associated with an increase in the width of the palpebral fissure. (Am J Ophthalmol 2001;131:254-255. © 2001 by Elsevier Science Inc. All rights reserved.)

WE HAVE OBSERVED THAT THE GENERAL APPEARANCE of many patients who have undergone Laser in situ keratomileusis (LASIK) are changed their impressions (Figure 1). Laser in situ keratomileusis is a new surgical technique for correcting myopia,¹ hyperopia,² and astigmatism, but it is not a plastic surgery. Why did their

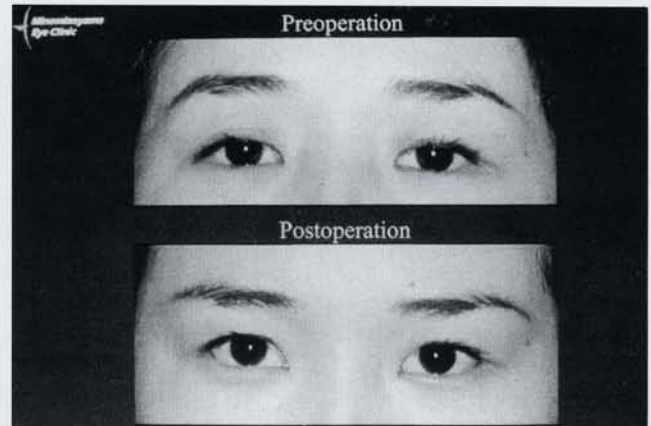


FIGURE 1. Palpebral fissure opening before surgery (upper) and after laser in situ keratomileusis (lower).

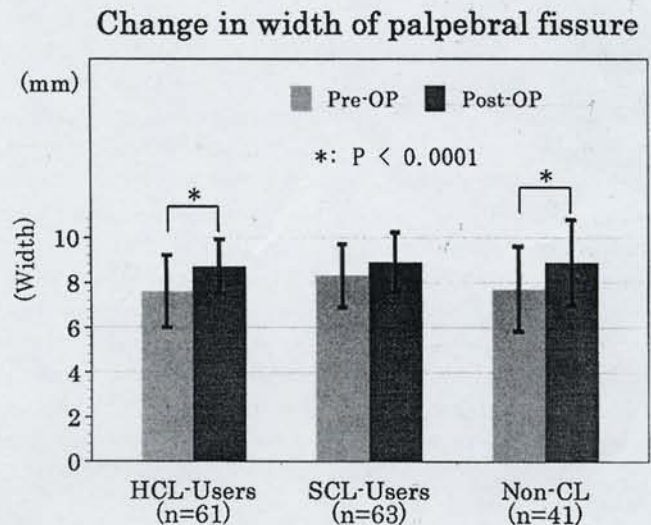


FIGURE 2. Preoperative and postoperative (6 months) average width of palpebral fissure. Standard deviations are presented as error bars.

impressions change after laser in situ keratomileusis? Because their palpebral fissure has become wider after surgery.

In 1992, van den Bosch and Lemij reported that prolonged hard contact lens wearer might induce a lower position of the upper eyelid, eventually leading to blepharoptosis.³ We hypothesized that because patients undergoing laser in situ keratomileusis would no longer need to

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wear contact lenses, the size of their palpebral fissure might increase. We, therefore, studied the effects of laser in situ keratomileusis on the width of the palpebral fissure.

We prospectively studied 165 consecutive eyes in 87 patients (41 men and 46 women, average age (\pm SD) = 32.9 (\pm 9.5) years), on whom laser in situ keratomileusis was performed using a Moria (Antony, France) LSK microkeratome and a Summit (Waltham, MA) APEX PLUS excimer laser. The average preoperative spherical equivalent (\pm SD) was -6.57 (± 2.96) diopters with values ranging from -1.5 D to -15.0 D. The width of the palpebral fissure was measured preoperatively and at 3 or 6 months after surgery. Each patient, without wearing contact lenses or glasses, was randomly measured three times by four masked examiners. Patients were classified into three groups as follows: hard contact lens users ($n = 61$ eyes), soft contact lens users ($n = 63$ eyes), and non-contact lens users ($n = 41$ eyes).

The average width of the palpebral fissure increased after laser in situ keratomileusis in all three groups (Figure 2). The average preoperative palpebral width (\pm SD) was 7.6 (± 1.6) mm in hard contact lens users, 8.3 (± 1.4) mm in soft contact lens users, and 7.7 (± 1.9) mm in non-contact lens users. After surgery, the average palpebral width increased to 8.7 (± 1.2) mm, 8.9 (± 1.3) mm, and 8.9 (± 1.9) mm, respectively. Both the hard contact lens users group and the non-contact lens users group showed a significant increase in the width of the palpebral fissure after laser in situ keratomileusis ($P < .0001$).

These results suggest that laser in situ keratomileusis allows the eyes of hard contact lens users and non-contact lens users to open more widely. Individuals with myopia tend to narrow the palpebral fissure to focus on an object. And many myopic patients who wear glasses tend to be undercorrected. We speculate that they used to open the palpebral fissure narrowly to focus better. When their vision has improved after laser in situ keratomileusis, they do not need to open the palpebral fissure narrowly. On the other hand, when the need to wear hard contact lens or thick glasses is removed, many individuals may feel better about their appearance. For these reasons, laser in situ keratomileusis procedures could be associated with changes to the impressions of many myopic patients.

As a conclusion, laser in situ keratomileusis may be associated with an increase in the width of the palpebral fissure.

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