SUMMARY

Small tunnel incision cataract surgery, using phacoemulsification and foldable intraocular lenses, is designed to offer rapid visual, physical and optical stability.

This mainly results from the resiliency of the small tunnel entery wound and reduced iatrogenic astigmatism which is inherent in larger incision methods, particularly extra-capsular extraction.

The aim of this work was to study the corneal topographic changes after sutureless, clear corneal tunnel incision and scleral tunnel incision and to compare between the two groups, regarding surgically induced corneal topographic changes, and keratometric changes.

The study included 30 eyes of 25 patients that were divided into two groups, corneal tunnel group 20 eyes, and scleral tunnel group 10 eyes.

Group I : Operated with a 4.1 mm upper approach sutureless clear corneal tunnel incision.
Group II : Operated with a 4.1 mm upper approach sutureless scleral tunnel incision.

In group I, the mean value of the difference map was – 0. 47 D at one month and 0.03 D after three months postoperatively. The mean value of surgically induced corneal astigmatsm was 0.65 D at one month and 0.21 D at three months postoperatively.

In group II, The mean value of the difference map was – 0.01 D at one month and – 0.15 D at three months postoperatively. The mean value of surgically induced corneal astigmatism was 0.26 D at one month, and 0.18 D at three months postoperatively.

There was a significant difference between the preoperative and one month postoperative and one month postoperative keratometric value for the corneal tunnel group. This difference disappeared at the third month post operatively.

There was no significant difference between the preoperative and the one month and the three months postoperative keratometric values for the scleral tunnel group.

There was a significant difference between the two groups in the difference maps values and the keratometric changes values at one month postoperatively. But there was no significant difference between the two groups at three months postoperatively.