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IOL IMPLANTATION IN PATIENTS WITHOUT CAPSULAR SUPPORT: A COMPARISON BETWEEN YAMANE'S TECHNIQUE AND CARLEVALE SUTURELESS SCLERAL FIXATION IOL

Oral

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Purpose:

To compare biometrics and clinical outcomes of two different techniques of secondary IOL implantation without capsular support: sutureless intrascleral IOL fixation with pre-charged 3 pieces IOL (Yamane's technique) and sutureless scleral IOL fixation of a Carlevale lens with scleral flaps.

Methods:

Prospective, monocentric study conducted at L.Sacco Hospital, Milan.

Consecutive eyes undergoing sutureless intrascleral IOL fixation (Yamane, PU6A, Kowa) or scleral fixated IOL implantation (Carlevale, FIL SSF) with scleral flaps were enrolled. Surgeries were performed by the same surgeon. The duration of each surgery was recorded.

Complete ophthalmic examination, specular microscopy, macular SD-OCT, combined anterior Segment OCT and corneal tomography were performed at baseline, 3 and 6 months.

Anterior segment OCT images were analyzed using ImageJ to quantify IOL tilt on vertical and horizontal axis. Visual and anatomical outcomes were compared between groups as well as changes in corneal curvature and IOL tilt.

Results:

Ten eyes were enrolled in the study, 5 eyes in each group.

Uncorrected visual acuity and BCVA continued to improve after surgery at every follow-up visit (all $p < 0.01$), with no significant differences between the two techniques.

There were no differences at any time point between the two groups in: IOP, endothelial cells density, IOL tilt entity and direction, average simK values and anterior corneal astigmatism. Surgery time was significantly inferior in the Yamane group ($p = 0.02$).

One patient in the Carlevale group developed retinal detachment treated with vitrectomy and gas tamponade. Two patients, one in each group, had post-surgical cystoid macular edema.

Conclusions:

Both techniques provided a good final visual acuity (82.5 ± 2.9 vs 79.6 ± 8.4 , $p = 0.54$) at 6 months with no differences in anatomical outcomes. Surgical times were significantly shorter in the Yamane group.

In our short-term comparative series, both the Yamane and the Carlevale technique represented viable options for sutureless scleral IOL fixation.

