Keratorefractive Surgery in Presbyopic 40-Year-Old Female--PresbyLASIK With Incomplete Disc

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Purpose

- To report a case of refractive surgery for myopia and presbyopia in a 40 year-old female with surgery complications;
- Bring up the discussion about PresbyLASIK: a reliable method to install monovision for presbyopic

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Case Report

- RCMC, 40, female, healthy, nursing student, come to the referral service of the Regional Assistance Foundation of Ophthalmology (FRAO) on June 26, 2012 for evaluation of refractive surgery due to the interest of "failing to wear glasses". Never used contact lenses.

- Eye Director: right eye
- UDVA: worse than LogMAR 1.70 (worse then 20/1000) in both eyes ; UNVA : Jaeger 5
- CDVA : Right Eye (RE): 0.00 LogMAR;
  Left EYE (LE): 0.10 LogMAR;
- Dynamic Refraction : RE: -3.25 -1.00 170 (LogMar 0.00)
  LE: -4.75 -0.50 30 (LogMar 0.10)
  add +1.00 D: J1
- Static Refraction : RE : -3.25 -0.75 x 170 (LogMar 0.00)
  - LE : - 5.00 -0.50 x 35 (LogMar 0.10)

Case Report

- About 11 months later, on June 4, 2013, came again to the service, this time decided to undergo the surgery. On this occasion, was examined againand a little difference between the two ophthalmologic evaluations.
- The following tests were performed:
- Pachymetry (OCUSCAM™): RE: 540 µm;
- LE: 524 µm.
- Topography (Eye-Sys™ and Pentacam™ OCULUS):

  RE: K1 = 42.4 D; K2 = 43.5 D;

  LE : K1 = 42.4 D; K2 = 43.7 D.
- Specular microscopy (KONAN ™): RE = 2377 cells/mm ^{2} ;
- LE = 2315 cells/mm ^{2} .

Case Report

- The monovision test was performed and there was adaptation. Refractive surgery (PresbyLASIK) was indicated in both eyes. Was referred to the Ophthalmology Hospital of Brasilia on July 23, 2013 for completion of the procedure PresbyLASYK.
- During the procedure on the right eye, scheduled to uncorrected distance vision, there was a problem in gear and the flap was performed until the upper pupillary region. The procedure was aborted. In the left eye , scheduled for near vision, total correction was performed to distance uneventful .
- On the first postoperative day , patients with binocular visual acuity 20/40 and J2 , using the drops properly, with mild discomfort in both eyes.

Case Report

- On the seventh postoperative day, the patient reported difficulty in night vision (glare). Binocular uncorrected visual acuity 20/25 and J2 . At this time, she was again counseled about the adaptation of monovision and if there were not visual adaptation, the monovision would be withdrawn after 3 months of the procedure .
- At 45 days postoperatively , the patient has adapted to monovision for various daily needs, but with little difficulty for distance vision.
- Dynamic Refraction: RE : -2.25 -0.75 165 20/20

  LE : - 0.50 -0.50 170 20/25 +2, Jaeger 1

Results

- The procedure in the right eye was aborted by incomplete flap and the strategy was in change the director eye, making use of the inherent process neuroadaptation monovision.
- There was no visual loss and the patient has adapted to monovision eye on what was once considered non-dominant.
- Monovision is a great option to presbyopic patients. Good orientation/counseling during the preoperative assessment and the individualization of surgical procedure is necessary.

Conclusions

- Monovision is a binocular process that generates suppression of central image out of focus with peripheral fusion of images from the two eyes.
- Your tolerance is satisfactory in different styles of life, to perform daily tasks that require good vision at different distances at different times of day.
- Compared to multifocal lens implants, patients report fewer changes in glare and contrast sensitivity.
- Complications LASIK intraoperative are numerous, and in this case, the incomplete disk occurred. Usually occur by failure or obstacles in gear or fails of suction ring.

Conclusions

- Even with good training and surgical experience, these complications can occur. When the surgeon is inexperienced or when the flap is performed partially close the pupillary area , it is suggested aborting the surgery.
- We suggest the orientation of the patient preoperatively regarding the postoperative and perioperative complications, and a possible second surgical procedure.
- Binocular vision studies in a group of adult patients with surgical monovision shows that these patients exhibit impairment in the central binocular vision, proven by reduction in stereopsis and without foveal fusion.

Conclusions

- The impairment of foveal fusion occurs even if the appropriate correction to the induced anisometropia , is used. The authors concluded that the binocular visual system may be susceptible to changes throughout life .
- Other authors have reported minimal impairment of binocular vision assessed by stereo acuity in myopic presbyopic patients after laser-induced (PRK - Photorefractive keratectomy) monovision. No patient described by these authors showed phoria or ocular deviation.
- PresbyLASIK ablations were set to optimize accuracy for reading and intermediate distance. The ablation was designed to be potentially easy revert monovision correction in case of patient dissatisfaction.

Conclusions

- Gurgos and Epstein (2009) stated that none of the 103 patients lost lines of binocular vision after the intervention, with segments ranging from 1.1 to 3.9 years. Preoperatively, all patients used correction. At the final follow-up, 91.3 % (94 /103) reported no use of glasses, 7.8% (8 /103) worn glasses for less than 1 hour per week, and 1 (0.97%) patient reported using glasses 20 hours per week. The results of refraction were generally stable over time.
- Discomfort by anisometropia and glare can happen in the early days of the postoperative period , but in this study there was adaptation after 90 days.

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