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Satisfaction of patients submitted to PresbyLASIK refractive surgery

Satisfação de pacientes submetidos à cirurgia refrativa de PresbiLASIK

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ABSTRACT

Objectives: *Toassess the satisfaction of patients undergoing central Presbilasik surgery and to determine the age of patients who undergo PresbiLASIK and the prevalence of symptoms reported after surgery.* ***Methods****: This is a descriptive, observational, cross-sectional study with data collected from patients previously submitted to PresbiLASIK.* ***Results:*** *The sample consisted of 45 patients, with a mean age of 57.7 (±7,19) years. The average score attributed to visual satisfaction with the procedure was 8.9 (±1.0). Visual quality after surgery was classified as equal to or better than expected by 84.5% of the patients and 31% complained of nocturnal symptoms such as halos and comet rays.* ***Conclusion:*** *The quality of vision after the PresbiLASIK procedure was highly satisfactory for the patients. A determining factor for this satisfaction is the process of managing patients' preoperative expectations, informing them about the therapeutic possibilities available, and, in the case of surgical choice, about its advantages and limitations.*

Keywords: *Presbyopia; Refractive surgery; LASIK; Cornea; Ametropia*

RESUMO

Objetivos: Avaliar a satisfação dos pacientes submetidos à cirurgia de Presbilasik central e determinar a prevalência de sintomas relatados após a cirurgia. **Métodos:** Este é um estudo descritivo, observacional, transversal, com dados obtidos de pacientes submetidos previamente ao PresbiLASIK. **Resultados:** A amostra consistiu de 45 pacientes, com média de idade de 57,7 (±7,19) anos. A nota média atribuída para a satisfação visual com o procedimento foi 8.9 (±1.0). A qualidade visual após a cirurgia foi classificada como igual ou melhor que a esperada por 84,5% dos pacientes e 31% apresentaram sintomas noturnos, como halos e raios de cometa. **Conclusão:** A qualidade de visão após o procedimento de PresbiLASIK foi altamente satisfatória para os pacientes. Fator determinante dessa satisfação é o processo de manejo das expectativas pré-operatórias dos pacientes, informando das possibilidades terapêuticas disponíveis, e, no caso da escolha cirúrgica, acerca das vantagens e limitações.

Descritores: Presbiopia; Procedimentos cirúrgicos refrativos; LASIK; Córnea; Ametropia

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Introduction

Presbyopia is an age-related physiological condition that often starts by the age of 40 years. It consists in the slow, progressive and irreversible loss of accommodation. [1]

Monofocal, bifocal, multifocal glasses or contact lenses are usually used for presbyopia correction. Although optical aids provide satisfactory results in improving visual acuity, they are seen as uncomfortable by most patients, mainly emmetrope who are not used to it. Surgical techniques for presbyopia correction are an alternative to such adaptation issues. [2]

Surgical correction can be achieved with monofocal and multifocal posterior chamber intraocular lenses, and with the accommodation of posterior chamber intraocular lenses, anterior chamber lenses, as well as with surgical procedures with lasers to change the corneal refractive power and recent collagen cross--linking techniques and corneal implants.[3]

Nowadays, Laser in situ keratomileusis (LASIK) in the main refractive surgery technique, which is based on the laser ablation of the cornea below a "flap". It is done in order to change the curvature of the cornea and, consequently, its refractive power. The aim of PresbiLASIK is to create a multifocal corneal surface by using the LASIK technique. PresbiLASIK Central is the most used technique; it creates a more positive area in the central cornea for near vision, whereas the peripheral part of it remains for far vision, but the cornea becomes hyperprolate. This modification can also cause nocturnal symptoms in mydriasis, such as worsened vision at night and under low luminosity conditions. PresbiLASIK Central can be applied to myopic, hyperopic and emmetropic patients. Furthermore, it is seen as a safe procedure, since it only removes little corneal tissue.[4-7]

Goal

Assessing patients' satisfaction with PresbiLASIK Central surgery results.

Methods

Descriptive, observational, cross-sectional study focused on assessing the degree of satisfaction of patients who underwent Presbilasik Central surgery, based on the following variables: 1. Visual satisfaction (measured from 0 to 10, wherein 0 stands for the lowest satisfaction and 10 for the highest satisfaction); 2. Quality of day and night vision in comparison to patient's personal expectation (better to or equal than the expected, worse than the expected) and 3. The prevalence of symptoms after surgery.

Data collection took place between June 2018 and July 2019; it was done through interviews conducted with patients who underwent PresbiLASIK surgery in a private ophthalmology clinic in Joao Pessoa (Paraiba State, Brazil).

The sample was non-probabilistic, it consisted of 45 participants selected by convenience among patients who were subjected to this surgery between January 2015 and July 2018, who had hyperopia, with or without astigmatism, and spherical equivalence between +1.00 and +4.00, and who attended to medical follow up during data collection. All patients signed the Informed Consent Term. Patients who had undergone previous optical surgeries due to optical diseases were excluded from the sample. None of the patients had depression, anxiety or bipolar disorder, schizophrenia or other psychiatric diseases that could have compromised the results.

All patients underwent previous complete ophthalmic examination, which consisted of the following tests: visual acuity (with and without correction), static refraction (by using anesthetic eye drops, followed by tropicamide eyedrops - 3 administrations at 5 minutes interval from each other) and dynamic refraction, biomicroscopy, retinal mapping and applanation tonometry.

Preoperative assessment after the ophthalmic examination consisted of the following exams: ultrasonic pachymetry (Accutome AccuPach V model), corneal topography (Eyetc CT2000 SL model), Pentacam (Oculyzer) and specular microscopy (Nidek CEM530 model). Patients with reduced corneal thickness (450micra) or suggestive aspects of ectasia, or of other corneal pathology, were excluded from the sample.

A trained medical surgeon, qualified and experienced in PresbiLASIK Central, performed the surgical procedures in a surgical center. The surgeon used the Alcon Allegretto 400 Hz Eye Q laser device, with Moria Surgical mechanical microkeratome.

Answers in the questionnaires were tabulated and analyzed in Microsoft Excel for Mac software. The frequency of the qualitative variables, the average and standard deviation of the quantitative variables were assessed.

The research was approved by the Ethical and Human Research Committee assessed and approved the research (n. 2.574.260). Researchers participating in the project respected the Helsinki Declaration and the National Health Council resolution 466/12.

Results

The current research encompassed 45 patients who were subjected to PresbiLASIK surgery between January 2015 and February 2018, and who were in the mean age group 57.7 years (±7.19) (Figure 1). Mean visual satisfaction score after the procedure was 8.9 (±1.0). In total, 84.5% (38) of patients reported that visual quality during the day was equals to or better than the expected after the surgery and 15.5% of them (7 patients) reported to have worse visual quality than the expected (Figure 2). On the other hand, 84.5% (38) of patients reported that visual quality was equals to or better than the expected at night, whereas 15.5% of them (7 patients) reported that it was worse than the expected (Figure 3). Fourteen patients (31%) reported nocturnal symptoms, all of them (100%) reported to see halos around light sources and 71.5% of these patients (4 patients) reported to have a hard time driving at night. Forty-two patients (93%) reported to accept being subjected to PresbiLASIK surgery again, in case they had not undergone it yet.

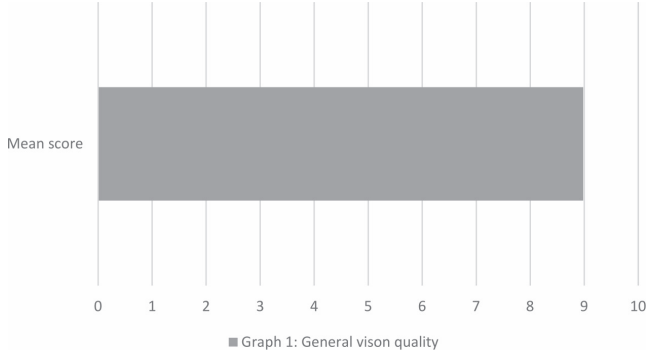

Figure 1: Quality of general vision

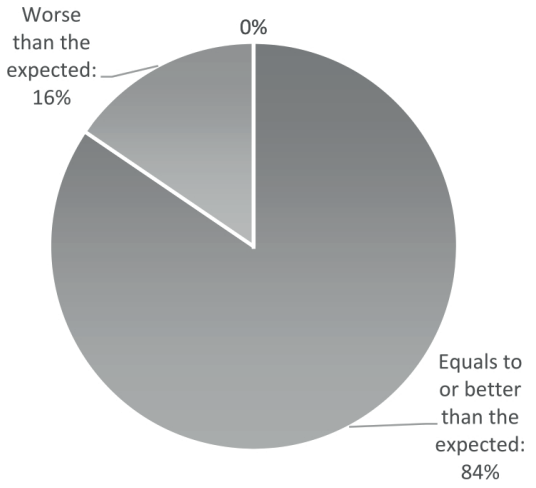

Figure 2: Quality of general day vision

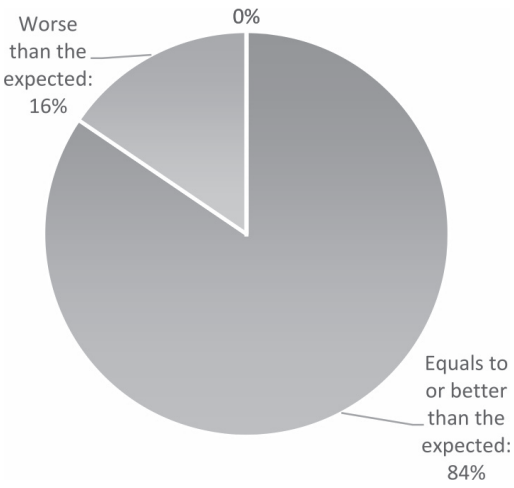

Figura 3: Quality of general night vision

Discussion

The PresbiLASIK method was launched in 1996[8] based on the fact that there is no absolute restriction to "laser" use in presbyopia and that LASIK is a well-known safe method. Results of a research conducted with three patients who underwent refractive surgery with "laser" - programmed to treat presbyopia were published in 1998. [9] However, the literature about PresbiLASIK remains scarce, and it justifies the current research and highlights its importance to the academia.

Participants were highly satisfied with the procedure, since the mean general vision quality score was 8.9 (±1.0). A previous research with 50 patients who had undergone advanced monovision surgery reported general satisfaction score of 9.4 (±0.6) [3] - this number was very similar to the one in the present research. The small difference between results can be explained by questionnaire content and by the fact that the sample did not count only on hyperopic patients.

Visual quality after surgery was equals to or better than the expected in most of the cases (84.5%). According to previous studies, many factors explain such outcome: the technical quality of the research, the adequate selection of patients and the guidance about the expected results and limitations of the surgery.[5]

Postoperative dry eye symptoms were not taken into account, since all patients subjected to Lasik surgery develop such condition.[10]

With respect to the current research, 31% of patients reported to see halos around light sources and to have a hard time driving at night. These nocturnal symptoms are common to all LASIK type refractive surgeries.[10-12] since the main effect of the surgery is felt in the central region of the cornea. Therefore, low luminosity, which is more frequent at night, results in many degrees of mydriasis, and it impairs visual quality because the peripheral regions of the cornea recruit refracted light rays.[7,12] Phacorefractive surgery based on multifocal intraocular lenses, is another treatment applied to presbyopia; however, it results in more undesired visual symptoms, such as blurred vision, reduced contrast and dysphotopsias.[13] PresbiLASIK presents fewer symptoms than multifocal lenses, since it is a corneal method; therefore, it havs more refractional predictability, lower intraoperative risk, possibility of retreatment/reversion and faster postoperative visual recover. The number of patients with nocturnal symptoms (31%) was almost twice the number of those who reported final visual quality worse than the expected (16%). This outcome reinforces the importance of preoperative follow up in order to reach patients' final satisfaction.

The fact that 93% of patients would recommend the surgery for friends/relatives and that 93% of them would undergo the surgery again in case they were not subjected to it yet, is an indirect manner of assessing patients' satisfaction. This finding reinforces patients' positive general evaluation and shows that the prevalence/severity of postoperative symptoms has low impact on their opinion about this surgery.

Conclusion

Patients' satisfaction with their visual quality after the PresbiLASIK procedure was high in most cases. The most common symptoms reported by patients were halos around light sources and low night vison. However, these symptoms were already expected and they did not have significant impact on patients' satisfaction. Other surgical techniques to correct presbyopia, such as multifocal intraocular lenses, have greater risks of both postoperative complications and undesired symptoms. Preoperative guidance is a key factor for patent's satisfaction, since it is the opportunity to explain patients about the therapeutic alternatives available, their advantages and limitations. Further research with bigger samples and more variables is required to corroborate and show the benefits of the current research.

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