Diffractive Bifocal-Multifocal Intraocular Lens: AT LISA tri

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14.1 Introduction

The great prevalence of presbyopia and the importance of near and intermediate vision in modern society have resulted in the development of techniques to compensate this refractive condition. Moreover, as has been reported, the loss of reading skills can reduce the quality of life of presbyopic patients [1–4].

The use of multifocal lenses can improve near and distance uncorrected visual acuity reducing the spectacle dependence [5]. For this purpose, many designs have been developed by manufacturers of intraocular lenses (IOLs). The main types, multifocal IOLs available are: refractive, diffractive, refractive-diffractive and accommodative.

Each model has its own advantages and disadvantages, but in mean terms, all of them can improve near and distance uncorrected vision. However, IOLs are still far from be perfect, and collateral effects such as halos, glare and loss of contrast sensitivity [6–9] have been reported after their implantation. Moreover, the results achieved in intermediate distance vision are not satisfactory in a great number of cases. Therefore, the improvement in intermediate vision is nowadays one of the most important challenges in this field. In this sense, the achievement of an intermediate focus in IOLs could be interesting to solve this problem.

In the present chapter the results of the AT LISA tri 839MP (Carl Zeiss Meditec), a new diffractive IOL model with a trifocal design, are analyzed in 60 eyes (30 patients operated bilaterally).

As will be seen along the chapter, the AT LISA tri is one of very few existing trifocal IOL [10–13], and what is more important, it has shown unbeatable results in improving near, intermediate and distance visual acuity in presbyopic patients [14].

14.2 Surgical Technique

All surgeries were performed using a standard technique of sutureless micro-coaxial phacoemulsification. In all cases, instillation of topical anaesthesia drops was applied to the patient prior to the surgical procedure. The MICS incision was 1.6 mm and it was placed temporally. After capsulorhexis creation and phacoemulsification (Infinity Vision System, Alcon), the IOL was inserted into

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J.L. Alió, J. Pikkel (eds.), *Multifocal Intraocular Lenses: The Art and the Practice*, Essentials in Ophthalmology, DOI 10.1007/978-3-319-09219-5_14,