



Service Priorities and Programmes Electronic Presentations

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Outcomes of Cataract Operations in Extreme High Axial Myopia

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Introduction

Myopia is a common problem worldwide. Long axial length was reported as one of the risk factors for intraoperative posterior capsular rupture, postoperative retinal detachment, and unpredictable refractive outcomes postoperatively. In this study, we will further define the effect of high axial myopia on outcomes of cataract operations by reviewing a cohort of patients with extreme high myopia that underwent phacoemulsification using a single IOL model, specifically focusing on incidence of intra- and post operative complications, and refractive outcomes.

Objectives

To define the outcomes of phacoemulsification in extreme axial myopia.

Methodology

A consecutive case series of phacoemulsification in eyes with axial length greater or equal to 30.0mm from January 1, 2010 to Dec 31, 2013 in Hong Kong Eye Hospital were identified retrospectively. Main outcome measures include intra- and postoperative complications, visual acuity, and refractive outcome.

Result

Two hundred and fifty eyes were identified. Intraoperatively, 3 eyes (1.2%) had unstable capsular bag and 3 (1.2%) had posterior capsular rupture. At a mean follow-up duration of 27.9 ± 14.7 months, 3 eyes (1.3% of 227 eyes with no history of retinal detachment or macula hole) developed retinal detachment. There was an overall hyperopic shift with a mean biometry error of $+0.46 \pm 1.17$ diopters(D), $+0.84 \pm 1.09$ D and $+0.07 \pm 1.14$ D in all eyes, eyes receiving negative-power and positive-power intraocular lens (IOL) respectively ($p < 0.0001$). The mean absolute biometry prediction error was 0.96 ± 0.82 D, 1.08 ± 0.85 D and 0.81 ± 0.81 D in all eyes, eyes receiving negative-power IOL, and positive-power IOL ($p = 0.021$) respectively. Sixty-two percent of eyes had refractive outcome within ± 1.0 D of target spherical equivalent. In conclusion, our study showed no increase in intraoperative and postoperative complications in eyes with extreme high axial myopia compared to the general population. In eyes with long axial length, the use of lower power IOL were associated with more hyperopic shift, which was more pronounced with negative-power IOL. With these results, we suggest to choose a target refraction 1 to 1.5D

more myopic with low or negative power- IOL if standard biometry calculation formulas are used.