



AGE-RELATED MACULAR DEGENERATION AND CATARACT SURGERY

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ABSTRACT

Purpose: To study the progression of visual acuity (VA) and retinal abnormalities in 30 eyes of 18 patients with AMD who had had cataract surgery. They were divided up into two groups according to AMD stage: the first group with drusen and retinal pigmented epithelium abnormalities and the second in the severe stages of age-related macular degeneration with atrophy and neovascularization.

In the first group 10 eyes, we found an improvement in VA in 90% of the eyes. New manifestations of neovascularization appeared in only 3 eyes (10%) 1 year after surgery. In the second group (20 eyes), we found atrophy in 80% of the eyes and neovascularization in 20% of the eyes before surgery. There was an improvement in VA after cataract surgery in 70% of the eyes, and in three eyes (17%) VA worsened.

In our study, patients with AMD improved VA and quality of life after cataract surgery. The same results of VA improvement after surgery can be found in the literature. However, no conclusions can be made concerning the progression of fundus lesions on a short term, though it seems that cataract surgery may accelerate the progression of AMD lesions years after surgery.

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INTRODUCTION

Age-related macular degeneration (AMD) and cataract are two age-related pathologies that are frequently associated with visual impairment in the elderly population. The protective role of the lens against AMD lesions was discussed. For a long time, the operation of cataract in a patient with AMD is a problem that the ophthalmologist is frequently confronted with. Given the combination of these two pathologies, we can ask the question of the risks associated with the intervention in patients with poorly developed AMD, and the benefit to expect from the intervention in subjects with more advanced lesions.

MATERIAL AND METHODS

This is a retrospective study involving 30 eyes of 18 patients undergoing cataract surgery. The operated eyes all had AMD ranging from early to late stage. The eyes were divided into two groups according to the evolutionary stage of their AMD: in group 1, patients had uncomplicated AMD with drusen and/or alterations of the pigment epithelium, without atrophic or neovascular lesions. Group 2 included eyes with atrophic and/or neovascular lesions. Two patients were included in both groups at the same time because they had both eye surgery and had early lesions in one eye and advanced lesions in the other.

Patients with other retinal pathologies (diabetic retinopathy, strong myopia) were excluded from the study. The intervention consisted in all cases in a phacoemulsification of the lens with implantation in the crystalline sac at the same time. No pre- or post-operative complications were observed except for a patient in group 2 in whom capsular rupture occurred during the procedure, but did not prevent implantation in the posterior chamber. The pre-operative examination included a detailed interrogation regarding the patient's medical, surgical and ophthalmological history, a measure of the best visual acuity obtained with correction, an examination of the segment anterior to the slit lamp, an ocular tension test with the tonometer aplanation of Goldmann and an examination of the fundus after dilatation. In some patients, preoperative angiography could be performed. Patients in group 1 were clinically monitored after the procedure on D1, D8, 1 month, 6 months, and 1 year. Each examination included a visual acuity test, slit lamp anterior segment analysis, ocular tension test, and fundus examination. If there was a significant change in the fundus, an angiogram was performed. Five eyes of 5 patients in group 1 could also be seen at 2 years postoperatively.

DISCUSSION

In patients over 75 years of age, AMD and cataracts are the leading causes of low vision (Rotterdam study) [1]. On the other hand, as cataracts and AMD are two age-related diseases, they are frequently found in association [2]. Given the

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combination of these two pathologies, we can question the visual benefits that can be expected from the intervention, and the risk of worsening lesions of the fundus related to surgery. The functional results in this study are satisfactory since 93.3% of group 1 eyes and 68% of group 2 eyes had visual acuity improvement postoperatively. A Swedish study [3] published in 1999 and involving 459 eyes studied prospectively, shows that the existence of a preoperative AMD is one of the main causes of non-satisfaction of patients after cataract surgery. However, in the same study, 2/3 of patients with visual acuity below 20/40 were not dissatisfied.

Most studies of functional outcomes after cataract surgery in patients with AMD are performing satisfactorily. Indeed, the study by Armbrecht *et al.* [3] found improvement in terms of quality of life and visual function after cataract surgery. Similarly, the study by Shuttleworth *et al.* [4] in 99 eyes with preoperative AMD found improvement in visual acuity in 81% of cases; in this study, as in our study, only 17% of patients were not satisfied with the intervention. These different studies and ours are therefore consistent in suggesting that cataract extraction is beneficial in terms of visual acuity and quality of life for patients. On the other hand, in our study, in the group of patients with uncomplicated AMD (group 1), only 2 of 15 eyes had a change in fundus lesions at one year postoperatively. Neovascular development was found in only one eye (6.7%). However, recent literature data on the evolving risk of AMD lesions after cataract surgery are contradictory.

CONCLUSION

After cataract surgery, the literature found a global benefit for patients with AMD, in terms of satisfaction, quality of life and visual acuity, clearly found in this study. No worsening of AMD related to cataract surgery was found in our study since we only observed new neovascular lesions in 6.7% of eyes at 1 year, compared to 6.1% in 1 year. absence of surgery in the Holz *et al* (5) study.

Declaration of interest

The authors declare that they have no conflict of interest in relation to this article.

Contributions of the authors

All the authors participated in the realization of the article. All authors have read and approved the final version of the manuscript.

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