Retinal detachment after cataract surgery

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Abstract

Background: A study of the characteristics and the results obtained in 99 consecutive eyes operated on for rhegmatogenous retinal detachment associated with aphakia or pseudophakia in order to find the predictive factors of poor anatomical and functional results. Methods: The authors retrospectively reviewed the files of 99 consecutive cases of aphakic and pseudophakic retinal detachment operated on by the same surgeon between January 1992 through July 1993 with a minimum follow-up of 6 months. Multivariate and chi square analysis were carried out. Results: Of the pseudophakic eyes, 25 had an anterior chamber lens and 48 had a posterior chamber lens. The posterior capsule was disrupted using a Yag laser in 58% of those with an posterior chamber lens but only 14% of them developed detachment within 6 months. The rate of vitreous loss was 27% with 5% in case of intracapsular extraction, 31% in case of extracapsular extraction and 54% in case of phacoemulsification. PVR was present in 30% of the patients and 51% of detachments occurred more than 24 months as a mean after cataract surgery. The overall anatomic reattachment rate was 88% with no significant difference between the aphakic and the pseudophakic patients, either with an anterior chamber of posterior chamber lens. Visual results were significantly worse in the anterior chamber lens group and in the aphakic eyes (P < 0.02). Negative prognostic indicators for reattachment included poor preoperative vision, extension of the retinal detachment to the macula (P < 0.05) and grades B, C or D proliferative vitreoretinopathy (P < 0.01). In addition to the above factors, eyes with vitreous loss, anterior chamber lens, aphakia and a larger extent of the retinal detachment had a poor visual outcome. Conclusion: Most aphakic or pseudophakic retinal detachment can now be reattached with either scleral or vitreo retinal surgery. The main difficulties are the localisation of the breaks and the treatment of PVR. Indirect ophthalmoscopy associated with vitrectomy does well in cases of an opacified posterior capsule. In cases of severe PVR long term internal tamponade either with C3F8 or silicone oil improves anatomical results but the functional results remain inferior.

Introduction

Retinal detachment (RD) is still one of the most serious complications of cataract extraction. 40% of the cases referred to us for retinal detachment surgery have had previous cataract extraction. A number of reports have been published to date on aphakic retinal detachment (ARD) [5–9]. More recently articles have appeared on pseudophakic retinal detachment (PPRD) [10–21] but most papers discuss series which operated at a time when cataract extraction was different from now. At present nearly 95% of cataract surgery is associated with intraocular lens (IOL) of which approximately 90% is the posterior chamber type [3, 4]. With the rapid changes in the techniques of extractions most patients are now operated on by phacoemulsification (PKE). This report is a comparison of the characteristics of all RD after cataract surgery in order to identify predictive factors of poor anatomical and/or functional results.

Materials and methods

This retrospective study covered all the 103 cases of ARD and PPRD repaired by the same surgeon (J.P.B.) in the Service d’Ophtalmologie A Hôpital Central C.H.U. de Nancy from January 2nd, 1992 through June 30, 1993. It was our purpose to investigate all cases of
aphakic RD referred to us including those already operated on elsewhere. Only post-traumatic cases and diabetic patients with traction RD were excluded. During these 18 months, 4 patients were excluded for insufficient follow-up and 99 cases were considered for the study. The mean follow-up was 10 months (6–19).

Preoperative visual acuity was measured with a best correction and decimal acuity chart at 5 meters. Retinal examination was performed with the Haag Streit BQ slit-lamp using the Goldmann 3 mirrors lens and scleral depression or the 90 diopters lens.

Myopia was declared superior to 6 diopters when the axial length was more than 26 mm. Proliferative vitreoretinopathy grades B to D were assigned based on the Retina Society classification of PVR [22]. A minimum of 6 months follow-up was obtained in all cases reported.

Multivariate analysis using chi-square was used to determine the relationship between preoperative variables and anatomic and visual results.

Retinal surgery

The operative procedures are shown in Table 1. In 57 eyes the first operation consisted of a scleral procedure including cryocoagulation of the breaks under microscopic control (100%) [23], segmental indentation (93%), subretinal fluid release through the sclera using the needle of the 7XO vicryl (59.5%). 42 eyes underwent a pars plana vitrectomy as a first procedure in order to treat PVR (52.5%), localise the breaks (16.6%), cure vitreous incarceration (14.2%), mend a giant tear or macular hole (14.2%) or coagulate bleeding vessels (2.5%). Reoperations were necessary in 30% of cases (Table 2). The second procedure was mainly a revision of the indentation in 35% or a vitrectomy in the remaining 65%. 6% were not re-operated because the PVR was judged to be too severe.

Results

Patient characteristics

The 99 patients ranged from 7–82 years with a mean age of 70 years for the women (32–91) and 58 years for the men (7–82). 64% were men and the right eye was involved in 54.4% of the cases. 18% of the patients had myopia over 6 diopters. Six patients had a congenital cataract operated without IOL in 4 cases and 16% had argon laser coagulation of a peripheral retinal degeneration.

Cataract surgery

Cataract surgery was done by manual ECCE in 64 cases (64.5%), PKE in 11 cases (11%), ICCE in 19 cases (19.2%), and pars plana lensectomy in 5 cases (5.2%). 48 eyes (48.5%) had a posterior chamber lens (PCL), 25 (25.25%) had an anterior chamber lens (ACL), and 26 (26.25%) were aphakic. 18 patients (18.2%) had undergone previous RD surgery.

Vitreous loss occurred in 27 eyes (27%): once during ICCE, 20 times during manual ECCE and 6 times during PKE. The rate of posterior capsular rupture at the time of surgery was 9% in the aphakic group, 10.5% in the PC IOL group and 68% in the AC IOL group. None of these preoperative characteristics were associated with poor anatomical results (Table 5). At the time of RD surgery, 20 eyes had PCL with an intact posterior capsule and 5 with a ruptured capsule, 22 eyes had postoperative YAG and 1 had needle capsulotomy.

Detachment features

The interval from cataract extraction to retinal detachment is shown in Table 3. 25% occurred during the first