Posterior Vitreous Detachment and Retinal Detachment after Cataract Surgery

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Objective: To evaluate possible changes of vitreous status in emmetropic eyes after uneventful phacoemulsification surgery, and possible related complications such as the onset of retinal detachment (RD).

Design: Retrospective case series.

Participants: Four hundred fifty-three emmetropic eyes from 453 patients (mean age, 62.03±5.57 years) subjected to uneventful phacoemulsification with intraocular lens implantation in the capsular bag were considered in the study. They had a refractive error within ±0.5 diopters (mean, −0.21±0.08). Eyes with peripheral retinal lattice degeneration were included only if asymptomatic and only if the degeneration involved one retinal quadrant. After cataract surgery, the 453 eyes were evaluated preoperatively at days 1, 15, and 30 and months 3, 6, 12, 18, 24, 36, 48, and 60. The whole period of follow-up was 5 years.

Methods: Evaluation of vitreous status by biomicroscopic examination, indirect binocular ophthalmoscopy, and B-scan ultrasonography.

Main Outcome Measures: Postoperative onset of posterior vitreous detachment (PVD) and RD.

Results: After cataract surgery, a PVD occurred in 107 of 141 (75.88%) eyes without preoperative PVD or lattice degeneration. Posterior vitreous detachment occurred in 41 of 47 eyes (87.23%) with preoperative lattice degeneration and no PVD. Eyes with preoperative lattice degeneration and postoperative PVD showed a higher incidence of RD after cataract surgery (21.27%) than eyes without preoperative PVD or lattice degeneration (0.70%). In all patients with lattice degeneration, RD originated from horseshoe retinal tears on lattice areas located on the superior quadrants. No correlation was observed between the development of RD and age.

Conclusions: Our results suggest that the onset of postoperative PVD should be considered an important risk factor for the development of RD after cataract surgery, particularly in eyes with lattice areas. *Ophthalmology 2007;114:692–697 © 2007 by the American Academy of Ophthalmology.*

Cataract surgery is a risk factor for retinal detachment (RD), and this risk is even higher in myopic eyes with respect to emmetropic eyes.[1–4] In nonmyopic eyes, vitreous alterations are reported to be a possible cause of RD after cataract extraction (CE).[4,5–7] In particular, the occurrence of posterior vitreous detachment (PVD) has been reported to be the most important change after cataract surgery in aphakic eyes and in eyes operated with the extracapsular CE (ECCE) technique with discission of the posterior capsule, compared with eyes operated with ECCE and an intact posterior capsule.[5,8] Consequently, the increased incidence of RD in these patients has been attributed mainly to changes in the vitreous gel; indeed, an increase in the prevalence of PVD may cause vitreoretinal tractions, and different theories explaining the onset of PVD after cataract surgery have been postulated.[7,8] The introduction of a phacoemulsification technique seems to have lowered the risk for postoperative RD, especially in those cases in which the posterior capsule remains intact.[4,9]

The aim of the present study is to evaluate possible changes of vitreous status in emmetropic eyes after uneventful CE by means of a phacoemulsification technique and possible related complications such as the onset of RD.

Patients and Methods

From October 1997 to December 1999, we examined 620 emmetropic patients (with a refractive error within ±0.5 diopters [D] spherical equivalent [SE]) between 50 and 72 years old (mean age, 62.03±5.57) subjected to uneventful phacoemulsification with intraocular lens (IOL) implantation in the capsular bag.

Exclusion criteria were presence or history of glaucoma, uveitis, macular pathologies, previous eye surgery, neodymium: yttrium–aluminum–garnet laser capsulotomy, intraoperative complications (e.g., capsular rupture and vitreous incarceration), and missing some of the established follow-up visits.

We also excluded patients in whom it was not possible entirely to identify the vitreous status by the examinations reported below, such as patients suspected of having incomplete PVD. Eyes with peripheral retinal lattice areas were included only if asymptomatic and only if involving one retinal quadrant.

When in the same patient both eyes were eligible for inclusion in the study, we randomly considered only one eye. This condition

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was present in 242 patients. Therefore, 453 eyes from 453 patients were considered for the study.

Informed consent was obtained from each subject enrolled in the study, and the research followed the tenets of the Declaration of Helsinki.

The following examinations were performed in all eyes enrolled in the study, at baseline conditions (preoperatively):

- Best-corrected Snellen visual acuity.
- Indirect binocular ophthalmoscopy with a +20-D lens (Volk Optical Inc., Mentor, OH) with scleral indentation and slit-lamp examination. A +90-D no-contact lens (Volk Optical) was used for the biomicroscopic examination.
- Ultrasonographic A- and B-scan examination by means of a 10-megahertz probe on an A-/B-scan system (Humphrey Instruments, San Leandro, CA).
- Biometry for IOL calculation.

All studied eyes had a mean refractive error within ±0.5 D SE (mean, −0.21±0.08). All patients reported a lack of refractive error in their medical history. The fact that the observed (see above) myopic or hypermetropic refractive error was related to the presence of cataract was confirmed by the biometric measurement of axial length. Indeed, mean axial length of the 453 eyes was 23.72±0.27 mm.

At baseline, the 453 patients were divided into 3 groups on the basis of their age: group A included 115 of 453 (25.3%) patients ranging from 50 to 57 years of age; group B included 178 of 453 (39.3%) patients ranging from 58 to 64; and group C included 160 of 453 (35.3%) patients ranging from 65 to 72.

We considered modifications of the vitreous, such as the presence of vitreous liquefaction associated with the formation of vitreous lacunae with separation of the vitreous cortex from the inner retinal surface, to be vitreous changes.

In particular, PVD is defined as the separation of the posterior vitreous cortex from the internal limiting lamina of the retina.[10,11] Posterior vitreous detachment was detected by means of indirect ophthalmoscopy and/or indirect biomicroscopic fundus examination with a +90-D lens and, in all cases, was confirmed by B-scan ultrasonography. Indirect ophthalmoscopy revealed the presence of the detached posterior hyaloid membrane from the retinal surface after swift vertical and horizontal ocular movements. The area of detached vitreous exceeded in all cases the temporal vascular arcades of the eye. A Weiss ring was not always visible by microscopic examination; on the other hand, in most cases it was possible to detect an elliptical opaque thickening of the detached vitreous cortex, not exceeding a diameter of 3 to 4 mm, corresponding to the macular area. The movements of the posterior vitreous surface in response to rotational eyes movements, characteristic of PVD, also were documented by B-scan ultrasonography.

Lattice degeneration of the peripheral retina is defined as a condition of retinal thinning associated with the liquefaction and separation of the overlying vitreous gel, with a condensed vitreoretinal adhesion at the margin of the lesion.[12,13] The presence of lattice degeneration was identified through the combination of indirect ophthalmoscopy and indirect biomicroscopic fundus examination with a +90-D lens.

Surgical Treatment

Briefly, retrobulbar or peribulbar anesthesia was used in all eyes. Cataract surgery was performed using a frown-shaped, self-sealing, superior scleral tunnel with a 3.2-mm incision. Capsulorrhexis was performed, as well as 4-quadrant cracking phacoemulsification. The posterior capsule routinely was polished, and a posterior 1-piece intraocular polymethyl methacrylate lens of 5.5 mm diameter was implanted in the capsular bag of all 453 studied eyes after the superior scleral tunnel was enlarged to 6 mm. The surgery was, by study design and inclusion criteria, without capsular rupture in all eyes. Patients received antibiotic–steroid medication postoperatively.

Follow-up

Postoperative evaluation of enrolled eyes included all preoperative examinations, with the exception of biometry, and was carried out at days 1, 15, and 30 and months 3, 6, 12, 18, 24, 36, 48, and 60. Therefore, the entire period of follow-up was 5 years.

To establish, as accurately as possible, the time elapsed between cataract surgery and subsequent onset of postoperative vitreous changes such as PVD, each patient was instructed to refer to the ophthalmologist any sudden increase of subjective floaters with or without light flashes in their visual field. If the medical examination confirmed the presence of PVD, the time elapsed between surgery and onset of symptoms was recorded. However, the accuracy of the estimated time of onset of PVD likely was limited by the different reliability of patients reporting and detecting symptoms during the postoperative follow-up.

Statistical Analysis

Values are expressed as mean ± 1 standard deviation. The differences observed between different groups, divided according to age or clinical features, were evaluated by 2×2 tables and chi-square test. $P<0.05$ was adopted as statistically significant.

The age differences between the group of patients with preoperative PVD and those without preoperative PVD were analyzed by 1-way analysis of variance. In this analysis, $P<0.01$ was considered statistically significant.

Results

Preoperative Clinical Features

Tables summarize the distribution of studied eyes in relation to clinical features of the vitreoretinal condition (Table 1) and to age (Table 2). Relative statistical comparisons also are shown (Table 3).

Absence of peripheral retinal degenerative areas or PVD was found in 141 of 453 (31.3%) eyes of the study group. The absence of PVD or lattice degeneration was higher (46.9%) in the youngest group (group A1) than in the older groups (35.4% in group B1 and 15.0% in group C1).

A PVD without peripheral retinal degenerative areas was found in 212 of 453 (46.8%) eyes of the study group. The higher presence of PVD without peripheral retinal degenerative areas was observed in the oldest group (C2, 62.5%), compared with the younger groups (A2, 31.3%; B2, 42.7%).

Table 1. Distribution of Studied Eyes in Relation to Vitreoretinal Features in the Preoperative Condition (Baseline)

	No. of Eyes (%)
No PVD or lattice degeneration (A1 + B1 + C1)	141/453 (31.1)
PVD (A2 + B2 + C2)	212/453 (46.8)
Lattice degeneration (A3 + B3 + C3)	47/453 (10.4)
PVD + lattice degeneration (A4 + B4 + C4)	53/453 (11.7)
Total	453/453 (100)

PVD = posterior vitreous detachment.

Table 2. Distribution of Studied Eyes in Relation to Age in the Preoperative Condition (Baseline)

Group A: 50–57 Years (n = 115 Eyes)				Group B: 58–64 Years (n = 178 Eyes)				Group C: 65–72 Years (n = 160 Eyes)			
A1, No PVD or Lattice	*A2, PVD*	*A3, Lattice Degeneration*	*A4, PVD + Lattice Degeneration*	*B1, No PVD or Lattice Degeneration*	*B2, PVD*	*B3, Lattice Degeneration*	*B4, PVD + Lattice Degeneration*	*C1, No PVD or Lattice Degeneration*	*C2, PVD*	*C3, Lattice Degeneration*	*C4, PVD + Lattice Degeneration*
54/115 (46.9%)	36/115 (31.3%)	15/115 (13.0%)	10/115 (8.7%)	63/178 (35.4%)	76/178 (42.7%)	21/178 (11.8%)	18/178 (10.1%)	24/160 (15.0%)	100/160 (62.5%)	11/160 (6.8%)	25/160 (15.6%)

PVD = posterior vitreous detachment.

Peripheral degenerative retinal lattice areas without PVD were found in 47 of 453 (10.3%) eyes of the study group. This condition was more common (13.0%) in the youngest group (A3) than in the older groups (11.8% in B3 and 6.8% in C3).

Peripheral degenerative retinal lattice areas associated with PVD were found in 53 of 453 (11.7%) studied eyes. The greatest presence of peripheral degenerative retinal lattice areas associated with PVD was observed in the oldest group (C4, 15.6%), compared with the younger groups (A4, 8.7%; B4, 10.1%).

Considering the total number of 453 enrolled eyes from 453 emmetropic patients, 188 studied eyes (41.5%) had PVD absent at the baseline assessment. These 188 eyes were included in groups A1, B1, and C1 (141/453 eyes [31.1%]) and in groups A3, B3, and C3 (lattice areas; 47/453 eyes [10.4%]). The mean age of these 188 patients was 60.02±5.41 years.

The remaining 265 eyes (58.5%) of the study group had preoperative PVD. These eyes were included in groups A2, B2, and C2 (only PVD; 212/453 eyes [46.8%]) and in groups A4, B4, and C4 (PVD plus lattice; 53/453 eyes [11.7%]). The mean age of these 265 patients with PVD was 63.44±5.24 years. There was a statistically significant difference in age ($P<0.0001$) between the 265 patients with PVD and the 188 patients without PVD.

Considering the total number of 453 enrolled eyes from 453 emmetropic patients, 100 studied eyes (22.1%) had peripheral lattice degenerations with or without PVD. Sixty-eight of these 100 patients were aware of having lattice areas, previously diagnosed during routine eye visits in a period between 6 and 20 years before surgery. Lattice areas were located superiorly in 21 of 25 eyes of group A (A3 plus A4), in 15 of 39 eyes of group B (B3 plus B4), and in 24 of 36 eyes of group C (C3 plus C4). Lattice areas were detected in the inferior quadrants in 4 of 25 eyes of group A (A3 plus A4), in 24 of 39 eyes of group B (B3 plus B4), and in 12 of 36 eyes of group C (C3 plus C4). There was no statistically significant difference in the presence of lattice areas between eyes with preoperative PVD and eyes without preoperative PVD.

Postoperative Clinical Features

Vitreous Changes after Cataract Surgery. Posterior vitreous detachment occurred in 148 of 188 (78.7%) eyes without preoperative PVD (groups A1–A3 plus groups B1–B3 and groups C1–C3) during a follow-up period between 2 days and 26 months (mean, 7.3±0.91 months).

In particular, postoperative development of PVD was detected in 56 of 69 (81.1%) eyes of group A (A1 plus A3), in 65 of 84 (77.4%) eyes of group B (B1 plus B3), and in 27 of 35 (77.1%) eyes of group C (C1 plus C3). No differences were found between groups A, B, and C in the development of PVD.

Postoperative Retinal Detachment Related or Not Related to Vitreous Changes. Retinal detachment occurred in 14 (3.1%) of a total of 453 monitored eyes. Retinal detachment occurred in 11 of 148 (7.4%) eyes with postoperative PVD in a period between 7 days and 35 months after surgery (mean, 0.85±5.86). Retinal detachment occurred in 3 of 265 (1.1%) eyes with a preoperative diagnosis of PVD in a period between 16 and 49 months after surgery.

Tables 4 to 6 summarize prevalence of RD in relation to preoperative vitreoretinal clinical features and in relation to age. Relative statistical comparisons also are shown.

Of eyes without preoperative PVD or lattice degeneration (A1 + B1 + C1), only 1 developed an RD originating from small retinal holes without lattice areas, located in the inferior quadrants (group B1). In this eye, a postoperative PVD occurred.

Retinal detachment developed in 2 eyes with preoperative PVD. The RD originated from small retinal holes barely identifiable on the inferior quadrants (group A2).

Retinal detachment was more frequent in eyes with lattice degenerations (A3 + B3 + C3): 10 eyes with lattice degenerations and subsequent RD of a total of 14 eyes with RD. Retinal detachment originated from horseshoe retinal tears on lattice areas located on the superior quadrants. It is worth noting that all these 10 eyes that developed RD had postoperative PVD.

One eye with preoperative PVD and concomitant presence of lattice degeneration developed RD originating from retinal breaks on lattice areas located in the inferior quadrants (group B4).

A significantly higher prevalence of RD ($P = 0.002$) was observed in eyes that developed PVD postoperatively (11/148 [7.4%]), compared with eyes with preoperative PVD (single PVD or PVD associated with lattice degeneration) (3/265 [1.1%]).

Table 3. Distribution of Studied Eyes in Relation to Relative Statistical Evaluation in the Preoperative Condition (Baseline) (χ^2 between Subgroups)

(A1 vs. B1) = 0.9	(A2 vs. B2) < 0.0001*	(A3 vs. B3) = 0.60	(A4 vs. B4) = 0.31
(A1 vs. C1) < 0.0001*	(A2 vs. C2) < 0.0001*	(A3 vs. C3) = 0.48	(A4 vs. C4) = 0.038*
(B1 vs. C1) < 0.0001*	(B2 vs. C2) < 0.0001*	(B3 vs. B3) = 0.17	(B4 vs. C4) = 0.33

A1, B1, C1 = no posterior vitreous detachment (PVD) or lattice degeneration; A2, B2, C2 = PVD; A3, B3, C3 = lattice degeneration; A4, B4, C4 = PVD + lattice degeneration.
*Statistically significant.

Table 4. Postoperative Clinical Features: Prevalence of Development of Posterior Vitreous Detachment (PVD) and Further Related Complications Such as Retinal Detachment (RD) Observed after Cataract Surgery—Relationship to Vitreoretinal Clinical Features

	PVD [No. of Eyes (%)]	RD [No. of Eyes (%)]
No PVD or lattice degeneration (A1 + B1 + C1)	107/141 (75.88)	1/141 (0.70)
PVD (A2 + B2 + C2)	—	2/212 (0.94)
Lattice degeneration (A3 + B3 + C3)	41/47 (87.23)	10/47 (21.27)
PVD + lattice degeneration (A4 + B4 + C4)	—	1/53 (1.88)
Total	148/188 (78.7)	14/453 (3.1)

The distribution of the 14 eyes with RD in relation to age reveals that the development of RD was higher in younger patients and particularly in 6 of 115 (5.2%) group A eyes, 5 of 178 (2.8%) group B eyes, and 3 of 160 group C eyes (1.8%).

Figure 1 shows the distribution of RD in relation to the age of patients and time elapsed after onset of PVD.

The majority of eyes developed RD in a period between 0 and 6 months (10/14 eyes [71.4%]). Nine of these eyes had preoperative lattice degenerations, and 1 had no preoperative PVD or preoperative PVD plus lattice degeneration. All these eyes developed postoperative PVD before onset of RD. In the remaining 4 eyes, RD developed in a period between 16 and 49 months. In detail, RD developed in 3 eyes with preoperative PVD (2 eyes with PVD only and 1 eye with PVD associated with lattice degeneration) and in 1 eye with preoperative lattice degeneration, in which RD occurred after the onset of postoperative PVD.

Discussion

Posterior vitreous detachment with resultant retinal tear formation is the mechanism for most RDs. Retinal detachment is most common after cataract surgery, and it is likely that if there is no PVD before cataract surgery, PVD develops in many patients postoperatively.

Our results revealed the development of postoperative PVD in 78.7% (148/188 eyes) of eyes without preoperative PVD. Among these 148 eyes, 11 (7.4%) developed postoperative RD after the occurrence of PVD. When analyzing the development of postoperative PVD, we considered time elapsed from cataract surgery, age of patients, and absence or presence of peripheral retinal degenerations such as lattice areas as a risk factor for subsequent development of retinal breaks or RD.

In our series of eyes, we observed that a postoperative PVD was detected between 2 days and 26 months (mean, 7.3±0.91 months). This led us to believe that the onset of PVD may occur a short time after cataract surgery.

There are different theories in the literature regarding the mechanisms at the basis of changes of vitreous status after cataract surgery.[7,8] For instance, it is likely that the observed decrease of hyaluronic acid concentration[7] and the onset of postoperative PVD[8] may be implicated in the development of RD after cataract surgery. Hayreh and Jonas reported that, among other demographic and ophthalmic factors, the occurrence of PVD correlated significantly with increasing age and surgical aphakia.[14]

In our series of eyes, the majority of postoperative PVDs were present in the younger group of patients (age between 50 and 57 years). Nevertheless, no statistically significant differences were observed with respect to the other 2 groups, and this could suggest that age is not a predominant factor for the development of postoperative PVD.

In eyes without preoperative PVD and lattice degenerations (see groups A1, B1, and C1), the onset of postoperative PVD was detected in 75.88% of the total number of eyes. Nevertheless, a large percentage (87.23%) of postoperative PVDs were detected in eyes with preoperative peripheral retinal lattice degenerations (see groups A3, B3, and C3). These data are very difficult to explain, and to our knowledge, there is a lack of information regarding this point in the literature. Nevertheless, our results seem to suggest that eyes with preoperative peripheral degenerations may be somehow more predisposed to mechanical or structural factors inducing vitreous changes leading to the development of PVD.

A second aim of our work was to evaluate the onset of possible complications, such as RD, in relation to postoperative vitreous changes.

When analyzing the development of postoperative RD, we considered age of patients, correlation to vitreous changes in the presence or absence of peripheral retinal degenerations (lattice degeneration), and time elapsed from onset of PVD. Although the development of postoperative PVD was not statistically related to age, we observed that RD more frequently develops in younger patients (Table 5).

Table 5. Postoperative Clinical Features: Prevalence of Development of Posterior Vitreous Detachment (PVD) and Further Related Complications Such as Retinal Detachment Observed after Cataract Surgery—Relationship to Age

Group A: 50–57 Years (n = 115 Eyes)				Group B: 58–64 Years (n = 178 Eyes)				Group C: 65–72 Years (n = 160 Eyes)			
A1, No PVD or Lattice Degeneration	*A2, PVD*	*A3, Lattice Degeneration*	*A4, PVD + Lattice Degeneration*	*B1, No PVD or Lattice Degeneration*	*B2, PVD*	*B3, Lattice Degeneration*	*B4, PVD + Lattice Degeneration*	*C1, No PVD or Lattice Degeneration*	*C2, PVD*	*C3, Lattice Degeneration*	*C4, PVD + Lattice Degeneration*
0/54 (0%)	2/36 (5.5%)	4*/15 (13.0%)	0/10 (0%)	1*/63 (1.6%)	0/76 (0%)	3*/21 (14.3%)	1/18 (5.5%)	0/24 (0%)	0/100 (0%)	3*/11 (27.2%)	0/25 (0%)
	Total: 6/115 (5.2%)				Total: 5/178 (2.8%)				Total: 3/160 (1.87%)		

*Postoperative PVD.

Table 6. Postoperative Clinical Features: Prevalence of Development of Posterior Vitreous Detachment and Further Related Complications Such as Retinal Detachment Observed after Cataract Surgery—Relationship to Relative Statistical Evaluation

(A1 vs. B1) = 0.93	(A2 vs. B2) = 0.19	(A3 vs. B3) = 0.61	(A4 vs. B4) = 0.76
(A1 vs. C1) = NC	(A2 vs. C2) = 0.11	(A3 vs. C3) = 0.68	(A4 vs. C4) = NC
(B1 vs. C1) = 0.61	(B2 vs. C2) = NC	(B3 vs. B3) = 0.67	(B4 vs. C4) = 0.86

A1, B1, C1 = no posterior vitreous detachment (PVD) or lattice degeneration; A2, B2, C2 = PVD; A3, B3, C3 = lattice degeneration; A4, B4, C4 = PVD + lattice degeneration; NC = not computable.

This agrees with previous studies reporting that younger patients appear to have a higher incidence of RD after cataract surgery.[1–4]

In our series of patients, postoperative PVD developed in 107 of 141 eyes without preoperative PVD or lattice degeneration (groups A1 + B1 + C1; Table 4). Among these 107 eyes, an RD occurred in one eye only, after the onset of postoperative PVD (Table 5; group B1).

Considering these data, the onset of postoperative PVD cannot be considered an exclusive potential risk factor for RD, in contrast to previous studies reporting PVD as a risk factor for RD after cataract surgery.[4–8] This discrepancy may be due to the presence of different factors such as population of patients enrolled (e.g., myopic eyes with respect to our population of emmetropic eyes) and/or due to the surgical techniques employed (e.g., ECCE and intracapsular cataract extraction with respect to our phacoemulsification technique).

In our study, the majority of RDs were observed in eyes with peripheral retinal lattice degeneration (groups A3, B3, and C3) in which a postoperative PVD developed. It is worth noting that in these eyes RD developed very early after the onset of PVD (Fig 1). Our findings are in agreement with other studies suggesting that lattice degeneration may represent by itself the most important fundus lesion predisposing to retinal tears and RD; indeed, the reported risk factor of 0.3% to 0.5% for the development of RD is increased when retinal tears occur along the edge of areas of lattice degeneration after an acute PVD.[12,13,15]

In conclusion, considering the possible relationship between age of patients, onset of postoperative PVD, presence of peripheral retinal lattice degeneration, and development of RD

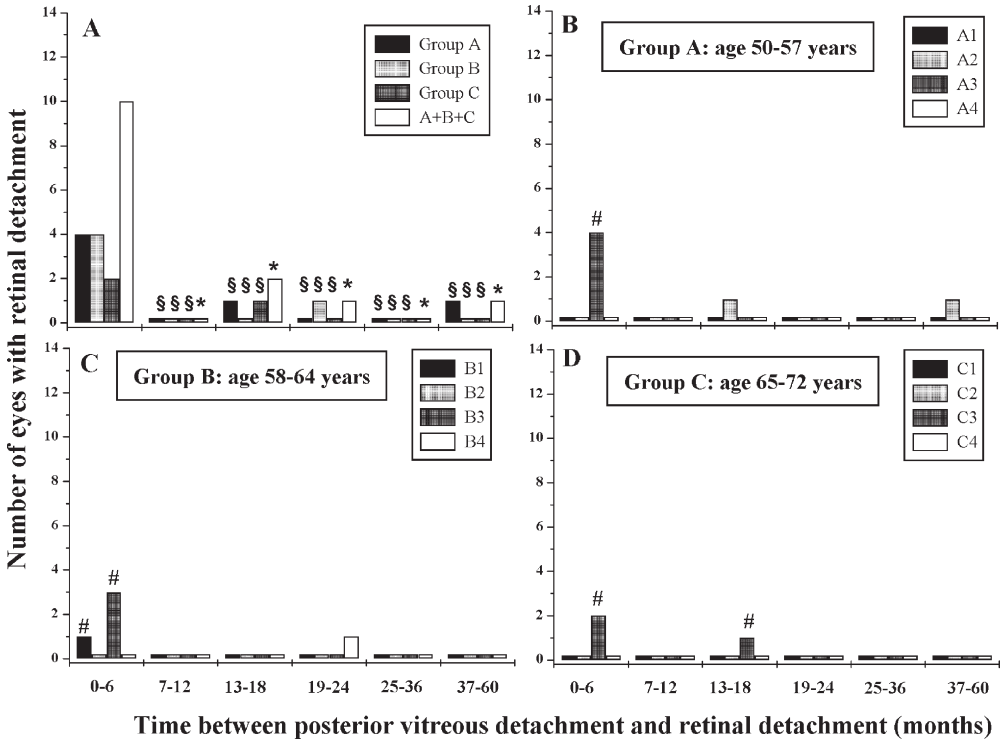

Figure 1. A, Distribution of retinal detachment (RD) in relation to age (groups A, B, and C) and time elapsed after the onset of posterior vitreous detachment (PVD). Chi-square with respect to the group of patients in which the RD occurred earlier than 6 months after PVD: *$P<0.05$; §$P>0.05$. **B–D**, Distribution of RD in relation to baseline vitreoretinal features observed in each group and time elapsed after the onset of PVD. A1, B1, C1 = baseline absence of PVD and lattice degeneration; A2, B2, C2 = baseline presence of PVD; A3, B3, C3 = baseline presence of lattice degeneration; A4, B4, C4 = baseline presence of PVD plus lattice degeneration. #Eyes with postoperative PVD.

after cataract surgery by means of phacoemulsification technique, our data suggest that none of these factors may represent, by themselves, potential risk factors for the postoperative development of RD in emmetropic eyes. In contrast, the development of PVD after cataract surgery in eyes with lattice degeneration may be identified as a possible risk factor for RD, even when this degeneration is circumscribed to only one quadrant, such as in our studied eyes. Given the results of our study, consideration can be given to providing prophylactic laser treatment to areas of lattice degeneration in patients with an attached posterior hyaloid. However, this warrants further study to determine its potential utility.

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