

Characteristics of Bilateral Retinal Detachment

Viola Radeck Frank Schindler Horst Helbig Maria-Andreea Gamulescu
Yordan Cvetkov Teresa Barth David Maerker

Department of Ophthalmology, University Hospital of Regensburg, Regensburg, Germany

Keywords

Bilateral retinal detachment · Fellow eye · Vitrectomy · Buckle surgery · Anatomic success rate · Retinal symmetry

Abstract

Introduction: Rhegmatogenous retinal detachment (RD) is still a sight-threatening and potentially blinding disease, especially if both eyes are affected. The purpose of this study is analysing the specific characteristics of bilateral rhegmatogenous RD. **Methods:** The files of all 5,791 consecutive eyes undergoing vitreoretinal surgery for uncomplicated RD in a single tertiary retinal centre between January 2005 and June 2021 were retrospectively reviewed. **Results:** A total of 300 patients (600 eyes) had bilateral retinal detachment. Interval between initial and subsequent RD surgery was 2.6 ± 2.8 (mean \pm SD, median 1.5) years. Symptoms were reported by the patients for 20 ± 75 (median 5) days before presentation in the initial eye and 12 ± 32 (median 4) days in the subsequent eye. 220 patients were male (73%), and mean age at initial RD was 55 years. 183 (61%) of the initial RD eyes were phakic. In the initial eye, more patients had a detached macula, worse visual acuity, and more quadrants involved. Primary anatomic success rate was higher in the subsequent eye (90%) compared to the initial eye (83%). There was no difference in the reattachment rate of fellow eyes with primary failure in the first eye (91%) compared to those with primary success in the

first eye (90%). There was a high symmetry between the eyes in terms of type of retinal break, number of breaks, and presumed localization of the causative retinal break. **Conclusion:** Patients with bilateral RD were more commonly male and younger than the group of all RD patients. The proportion of pseudophakia was not different. The majority of fellow eye RD occurred within 2 years after the RD in the first eye. Second eye RD was less advanced and had a better anatomical repair rate. Despite their experience in the first eye and despite typical symptoms, patients presented only after a mean of 12 days with RD in the second eye. RD in the initial and the subsequent eye showed a high symmetry. The anatomic result in the first eye is not a predictor for the anatomic result in the subsequent eye.

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Introduction

Rhegmatogenous retinal detachment (RD) is still a sight-threatening and potentially blinding disease, despite significantly improved techniques and increasing success rates for treatment. RD in the first eye may severely impair vision, but as long as the fellow eye can compensate, patients can mostly continue an independent life. However, 13% of fellow eyes with unilateral RD have a

VA of 6/18 or worse [1]. If RD occurs in the second eye, patients may be threatened by complete blindness, loss of ability to work and independency, a tragedy for the patient, and a burden for society and social systems.

It has long been recognized that patients who suffer from RD in one eye have a considerably increased risk to subsequently develop an RD in the fellow eye. With the exception of trauma, all significant risk factors for RD usually affect both eyes. These risk factors include mainly myopia, pseudophakia, peripheral retinal lattice degenerations, history of RD in the family, and age-dependent vitreous changes leading to posterior vitreous detachment. The reports on the risk for RD in the second eye vary widely, between 6% and 34% [2]. These data come from studies with different designs and follow-ups. Most authors estimate the incidence of fellow eye detachments to approximately 10% [2].

The benefit of prophylactic treatment of the asymptomatic fellow eye of RD patients is controversial, and evidence is only from uncontrolled or retrospective studies. Causative breaks leading to RD often occur in areas of previously normal-looking retina [3]. Even if predisposing lesions are treated, RD in the fellow eye may not be prevented [3, 4].

Other results were reported by Folk: RD risk in fellow eyes with lattice was 1.8% after prophylactic laser and 5.1% if left untreated; no positive effect, however, was found in high myopia or extensive lattice [5]. The risk of visual loss was not favourably influenced by prophylactic laser [6]. In a high-risk group of fellow eyes with giant retinal tears, the RD risk was reduced from 43% to 13% with a prophylactic 360-degree laser [7].

Patient education about the early symptoms of RD is important for treating RD early, preventing macular detachment and preserving vision. If patients had suffered vision loss due to RD in one eye, it should be expected that they will be more cautious if symptoms occur in the fellow eye and visit an ophthalmologist earlier. Most studies have shown that the first presenting eye with RD indeed has more often a detached macula than the subsequent eye. Nevertheless, many patients still present late with symptoms of RD in the second eye. In this study, we describe characteristics of bilateral RD and compare the initial and subsequent eye in terms of preoperative characteristics, surgical treatment, and anatomical results.

Materials and Methods

The files of all patients undergoing primary RD surgery, either with buckle surgery, pars plana vitrectomy, or combined surgery,

between January 2005 and June 2021 in our department were reviewed. Excluded were eyes with a history of penetrating injury to the posterior segment of the eye or a history of other vitreoretinal procedures in the past. Eyes with high myopia and macular holes, malformations of the eye, or neovascular or uveitic RD were also excluded from the analysis. In the present study, all patients were included who experienced RD in both eyes during the observation period between January 2005 and June 2021. Patients with bilateral RD who had their surgery in one eye elsewhere or not within the time period between January 2005 and June 2021 were not included.

Failure was defined as diagnosis of redetachment documented in the patient file within 3 months after primary surgery. In eyes with silicone tamponade, silicone was removed usually 3–6 months after primary surgery, which may lead to an underestimation of redetachments, since those occurring after silicone removal were not included. Our hospital is the only centre for vitreoretinal emergencies in the area, serving a population of about 2–3 million people [8–10]. The study was approved by the Local Ethics Board and adheres to the principles of the Declaration of Helsinki.

Results

All RD Operations

A total of 5,791 eyes with primary RD were operated between January 2005 and June 2021 by 14 surgeons at a tertiary retinal centre. Moreover, 3,538 patients (61.1%) were male. Mean age of the patients was 61.1 years (± 13.6 SD). 3,573 (61.7%) eyes were phakic, 2,183 (37.7%) pseudophakic, and 27 (0.5%) aphakic. 840 (14.5%) were treated with buckle surgery and 4,951 (85.5%) with pars plana vitrectomy. Overall, primary anatomic success rate after one operation was 91.2% (5,283 of 5,781).

Bilateral RD, Preoperative Characteristics

There were 300 patients who were operated on with an RD in both eyes in our department between January 2005 and June 2021. 220 patients were male (73%) and 80 were female (27%). Mean age at the initial RD was 55 (SD 12, median 56) years. The age distribution of all RD patients compared to patients with bilateral RD is shown in Figure 1.

The percentage of bilateral RD for patients from the different age groups was 7% for the age group 0–19 years; 8% for the age group 20–39 years; 10% for the age group 40–49 years; 7% for the age group 50–59 years; 5% for the age group 60–69 years; 2% for the age group 70–79 years; and 1% for the age group over 80 years. 183 eyes (61%) of the initial RD eye were phakic, and 162 (54%) of the subsequent eyes were phakic. Refractive status was obtained only in the phakic eyes. Median refraction was

Fig. 1. Age distribution; all patients with RD versus patients with bilateral RD.

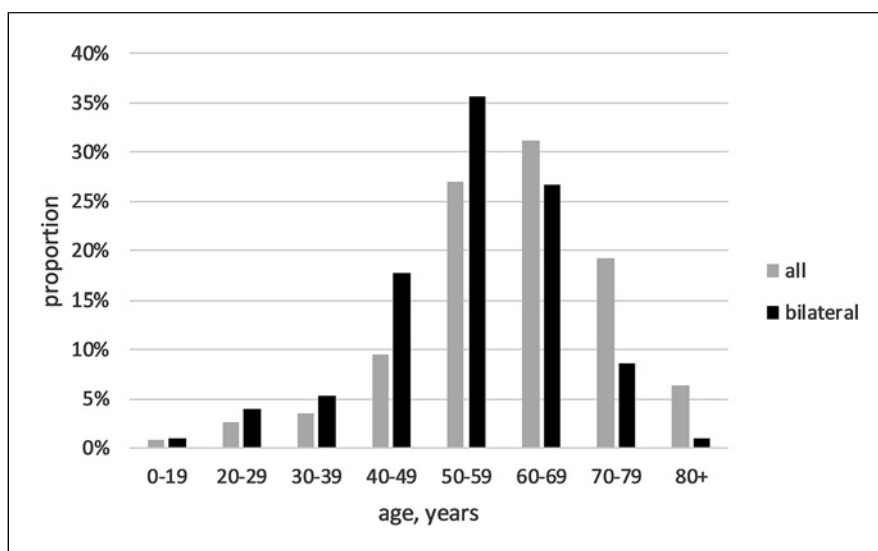
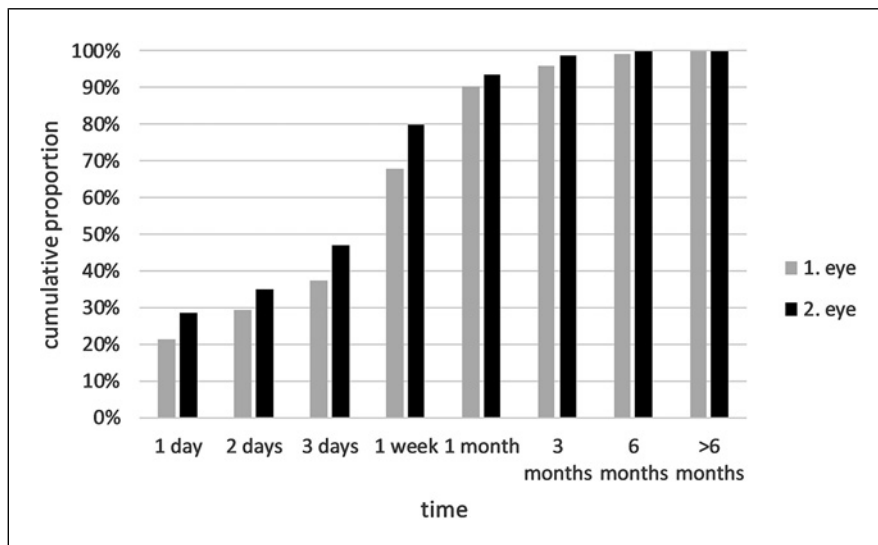


Fig. 2. Interval between surgery of first and subsequent eye with RD.



−3.75 dpt (range −21 dpt to +2.5 dpt) in the initial eye (data available from 161 phakic eyes) and −3.125 dpt (range −29 dpt to +5.5 dpt) in the subsequent eye (data from 151 phakic eyes).

Time between initial and subsequent RD surgery was 2.6 years (mean \pm 2.8 SD; median 1.5 years; see Fig. 2). In the first eye, RD was an incidental finding in 7 eyes; in the subsequent eye, in 42 cases, no symptoms were reported. In the symptomatic eyes, symptoms were reported by the patients for 20 (mean \pm 75 SD, median 5) days before presentation in the initial eye and 12 (mean \pm 32 SD, median 4) days in the subsequent eye (Fig. 3). In the initial eye, more patients had a detached macula, worse

visual acuity, and more quadrants involved. Baseline data for the initial and the subsequent eye are given in Table 1.

23 patients presented with simultaneous RD in both eyes. In 7 patients, both eyes were operated on in the same procedure; in 16 patients, the less urgent eye had surgery within 1 month. For further analysis, the more advanced eye was considered to be the initial RD eye.

Bilateral RD, Surgery, and Postoperative Outcome

Table 2 shows the surgical technique used for retinal reattachment. Vitrectomy with gas tamponade was the most commonly used surgery. In the initial eye, more silicone tamponade and combined vitrectomy with

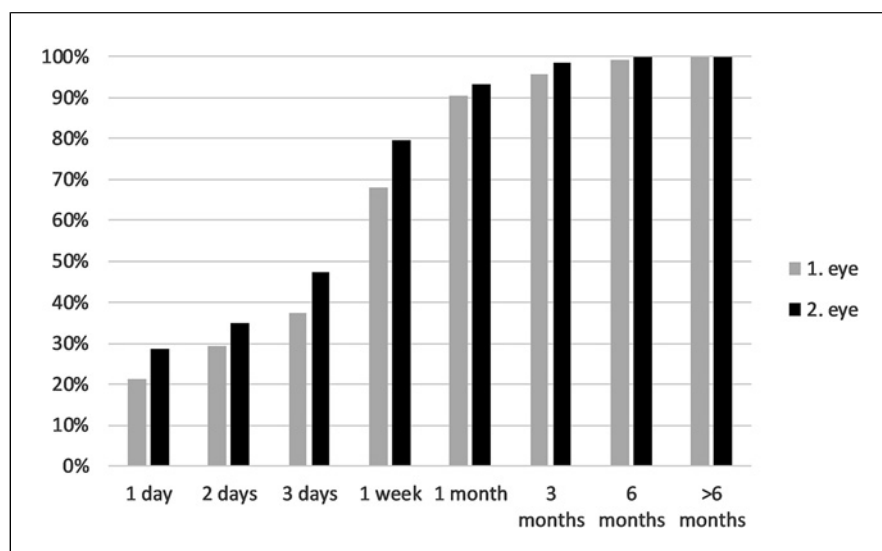


Fig. 3. Interval between first symptoms and surgery in the first and in the subsequent eye.

Table 1. Preoperative characteristics

	Initial eye	Subsequent eye
Duration of symptoms		
Days, mean±SD (median)	20±75 (5)	12±32 (4)
Eye side (%)		
No. of right eyes	165 (55)	135 (45)
Lens phakic (%)		
Phakic	183 (61)	162 (54)
Pseudophakic	117 (39)	138 (46)
Macula status (%)		
On	171 (57)	209 (70)
Off	129 (43)	91 (30)
Quadrants involved (MEAN)	2.4	2.2
Number of breaks	3.8	4.1
Type of break		
Horseshoe tear	209	226
Atrophic hole	63	53
Giant retinal tear	19	13
Ora dialysis	1	
Visual acuity (LOGMAR)		
Mean ± SD	0.86±0.82	0.62±0.74
Median	0.5	0.3

Table 2. Type of surgery and anatomic outcome

	Initial eye	Subsequent eye
Surgery		
Segmental buckle	47	28
Encircling buckle	17	20
PPV gas	210	242
PPV silicone	14	8
PPV + encircling buckle	11	2
Anatomic success (%)	253 (84)	271 (90)

Table 3. Symmetry of RD between eyes: type of retinal break in the first and in the subsequent eye

Type of breaks	Second eye			
	Horseshoe	Round	Giant	Ora dialysis
First eye				
Horseshoe	192	12	5	0
Round	23	39	1	0
Giant	10	2	7	0
Ora dialysis	1	0	0	0

encircling buckle were applied. Primary anatomic success rate was higher (χ^2 test for 2×2 contingency table, $p < 0.05$) in the subsequent eye (271/300, 90%) compared to the initial eye (253/300, 83%).

From the 47 patients who experienced a redetachment in the first presenting eye, 43 (91%) had primary anatomic success in the subsequent eye. From the 253 eyes without redetachment in the initial eye with RD, 228 had

primary anatomic success in the second eye (90%). This indicates that the anatomic result in the first eye is not a predictor for the anatomic result in the subsequent eye.

Bilateral RD, Symmetry between Eyes

Comparison of the type of break between the presenting and the subsequent eye showed a high degree of symmetry (Table 3). Also, the number of tears in the first

presenting eye correlated with the number of tears in the subsequent eye (Table 4). We further analysed the surgical protocol and the fundus drawings for extension of RD and location of retinal breaks. Using Lincoff rules, we identified the position of the causative retinal break where the RD was believed to have started. The location of the presumed primary causative retinal break also showed symmetry between the first and subsequent eyes (Table 5).

Discussion

The present study provides the largest series of bilateral RDs operated at a single centre. Preoperative characteristics, surgical treatment, and postoperative outcome are analysed. A focus is set on differences to unilateral RDs and the symmetry of bilateral RDs between both eyes.

Risk for Bilateral RD

In our study, there were about 5,200 patients who were operated on in one eye for a RD during the 16-year period, and 300 patients were operated on in both eyes. This would be a rate of about 5% for bilateral RD. Considering that patients with the second eye operated elsewhere or developing second eye RD outside of this time period or in the future, the data are in agreement with the general estimate of 10% for the risk of bilateral RD [2].

Age, Sex, Lens Status

Mean age of all patients with RD in our cohort was 61 years; in the bilateral group, it was 55 years of age when the initial eye had an RD and 57 years for the subsequent eye. Recently, the *BEAVRS and EURETINA VR RD Outcomes Group* found that the risk for fellow eye RD decreased linearly with age [11]. Data from the present study, however, show a decreasing proportion of fellow eye RD only in the age groups over 50 years. The highest risk for a fellow-eye RD appeared to have an RD patient in the age group 40–49. The status of the vitreous itself was not reliably documented in our files, but the vast majority of bilateral RDs had tractive horseshoe tears. Thus, patients with bilateral RD appear somewhat younger, but RD is likely to be associated with posterior vitreous detachment. The vast majority of patients with fellow eye detachment were between 50 and 70 years old, similar to the group of unilateral RD.

In the group of all RDs, there were 61% male patients; in the bilateral group, the male percentage was 73%. The

Table 4. Symmetry of RD between eyes: no of retinal breaks in the first and in the subsequent eye

Number of breaks	Second eye		
	1–2	3–5	6+
First eye			
1–2	59	41	17
3–5	36	49	28
6+	9	26	27

proportion of pseudophakic eyes in the whole study population of nearly 5,800 eyes was 38%, nearly the same as the 39% found for the initial RD eye in the group with bilateral RD. Thus, patients with bilateral RD were somewhat younger and more commonly male but the proportion of pseudophakia was not different.

There are only a few studies on bilateral RD in the recent literature. A study from Missouri on bilateral RD showed a mean age of 50 years, an IOL was present in the first eye in 30% and in the second eye in 36% [12]. Another multicentre study from the US revealed a mean age of 57 years. In the same series, 55% were pseudophakic in the first eye and 65% in the subsequent eye [13]. The Scottish DR study showed that the consecutive RD group was similar in age and gender to the unilateral group with a mean age of 56 versus 58 years [1]. The consecutive eye in Scotland was pseudophakic in 40% compared to 20% in the unilateral RD [1].

Interestingly, in a study on the phakic fellow eyes of pseudophakic RD, the phakic fellow eyes also had a significant risk for RD, indicating that pseudophakia alone is not a prerequisite and these eyes bear an intrinsic risk for RD even without cataract surgery [14]. A very large study from China with 603 patients with bilateral RD showed a mean age of 31 years [15]. A series of simultaneous RDs from India had a mean age of 26 years [16]. Asian study populations on RD appear to differ from populations from the US or Europe, as RD patients in Asia appear to be younger, less commonly pseudophakic and more myopic.

Time between First and Subsequent RD

The time between RD in the first and the subsequent eye was 2.6 years in the present study. This number is limited, however, by the restriction of the observation period, since only cases occurring during the 16-year period from 2005 to 2021 were included. The observation period must therefore be considered when comparing data with the literature. The “true” period between the

Table 5. Symmetry of RD between eyes: presumed location where RD originated

Localisation	Second eye					
	Temp sup	Sup	Nas sup	Temp inf	Inf	Nas inf
Temp sup	64	42	17	9	5	3
Sup	23	22	12	3	1	1
Nas sup	8	15	15	3	3	4
Temp inf	9	6	3	3	5	2
Inf	3	2	0	2	2	2
Nas inf	2	3	1	1	0	2

For right eye: presumed position of the causative retinal break: temp sup (between 9 and 11 o'clock), sup (11 to 1), nas sup (1 to 3), temp inf (7 to 9), inf (5 to 7), nas inf (3 to 5); for left eyes mirrored.

first and subsequent eye was probably longer if the observation period would be extended.

A study from the US following 252 patients with sequential bilateral RD over an 11-year period found a mean interval between eyes was 13.5 months with a wide variation of 1 month to 8.4 years [13]. An interval of up to 30 years between the eyes with a mean of 5 years was reported by Delaney [17]. In Scotland, an interval of 3.8 years between eyes was reported [1]. Walia followed patients over 5 years and reported 10 months between eyes [12]. A Chinese study of 603 patients with bilateral RD found a mean interval of 3.7 years between the eyes; the younger the patient, the shorter the interval [15]. Most second-eye RDs appeared to occur relatively early within the first few years [18].

Duration of Symptoms, Macular Status, and VA in the Initial versus Subsequent Eye

In our study population, in the subsequent eye the duration of symptoms before presentation was shorter, the proportion of eyes with attached macula was higher, the preoperative VA was better, and the number of retinal quadrants being detached was lower. Thus, the patients presented with the second eye earlier with less advanced stages of RD. In addition, more asymptomatic RDs were detected, indicating more frequent visits at the ophthalmology clinic. Nevertheless, patients still seem to wait too long (12 days in mean) despite their experience in the first eye and one third comes only if the macula is off. This is especially noteworthy as ophthalmological emergency care is easily and freely accessible in Bavaria even at night and on the weekend and patients even with minor and chronic symptoms use and abuse these options extensively. Obviously, patient education still needs improvement.

Walia et al. [12] reported symptoms for 22 versus 4 days, macula off in 48% versus 18%, and VA 20/260 versus 20/50 in the subsequent eye compared to the initial eye in bilateral RD. Similar results were found by Xu et al. [13] with symptoms before presentation for 5.9 versus 7.5 days, macular detachment at presentation in 34% versus 56%, detachment of 1.9 versus 2.0 quadrants, and a VA at presentation of 20/62 in the second eye versus 20/149 in the first eye. Mitry et al. [1] described macula-on in the consecutive eye in 63% compared to 44% in the unilateral group; duration of symptoms, specifically flashes, 13 versus 28 days; and peripheral vision defect 5 versus 17 days in the subsequent eye compared to unilateral RD.

Anatomic and Functional Results

Primary anatomic success rates in the present study were 83% for the first eye and 90% for the second eye. Since the anatomic situation in the first eye was more advanced, a higher rate of failure is not surprising. This correlates with limited functional outcome in the first eye.

Similar results are published in the literature by Xu et al. [13] anatomic success in the initial eye was 82.5% and in the second eye 83.7%. 6 months postoperatively, visual acuity in the second eye was 20/41 versus 20/49 in the first eye. The final VA, however, was not different (20/36 vs. 20/37). In the study by Walia et al. [12], redetachment was 25% in the first eye and 7% in the subsequent eye. Final visual acuity was 20/200 versus 20/40. Lower success rates in bilateral RD indicate more severe presentations in the initial eye [17].

Simultaneous RD

A special subgroup are patients who experience RD in both eyes at the same time. In many cases, the RD in one eye is asymptomatic. An incidence of about 1% simultaneous RD in all RDs has been reported. Most eyes were phakic with atrophic holes in younger patients [1, 16,

19–21]. 5% of the bilateral cases and 0.4% of all RD cases in China were simultaneous (15).

Symmetry of Bilateral RD

We also compared the clinical features of RD in both eyes. We found a high degree of symmetry with regard to type of retinal break, number of breaks, and localization of the RD.

This is in agreement with the clinical experience and the older literature. Patients had been found to have the same type of causative break in both eyes [16], and the retinal pathology had been described to be symmetric between eyes [2, 22].

An interesting aspect that has not been addressed in the literature so far is a comparison of the anatomic success in both eyes, does a failure in the first eye predict a higher risk for anatomic failure in the subsequent eye. We found no correlation between the anatomic success rates between the eyes, indicating that anatomic outcome in the first eye cannot be used as a predictor for the results in the second eye.

The strength of our study is a large sample size from a single centre. The limitation, however, is the retrospective design with possibly inaccurate and incomplete documentation in the patient's files. In addition, we may have missed events if patients had chosen to visit other clinics.

In conclusion, we present the largest series of bilateral RD in the western world so far. RD in the second eye occurred after a mean of 2.5 years. RD in the initial and the subsequent eye showed a high symmetry in terms of location, type, and number of retinal breaks. Second eye RD was less advanced and had a better anatomical repair rate. Still, despite their experience in the first eye, patients visit the ophthalmology clinic only after a mean of 12 days with typical symptoms in the second eye. The anatomic result in the first eye is not a predictor for the anatomic result in the subsequent eye. Education on typical symptoms of RD to the general population and especially to patients already having experienced RD in one eye should be improved.

References

- 1 Mistry D, Singh J, Yorston D, Siddiqui MAR, Murphy AL, Wright AF, et al. The fellow eye in retinal detachment: findings from the Scottish Retinal Detachment Study. *Br J Ophthalmol*. 2012;96(1):110–3.
- 2 Gupta OP, Benson WE. The risk of fellow eyes in patients with rhegmatogenous retinal detachment: curr Opin Ophthalmol. *Curr Opin Ophthalmol*. 2005;16(3):175–8.
- 3 Mastropasqua L, Carpineto P, Ciancaglini M, Falconio G, Gallenga PE. Treatment of retinal tears and lattice degenerations in fellow eyes in high risk patients suffering retinal detachment: a prospective study. *Br J Ophthalmol*. 1 September 1999;83(9):1046–9.
- 4 Byer NE. Kann die rhegmatogene Netzhautablösung verhindert werden? *Der Ophthalmologe*. 12 October 2000;97(10):696–702.
- 5 Folk JC, Arrindell EL, Klugman MR. The fellow eye of patients with phakic lattice retinal detachment. *Ophthalmology*. January 1989;96(1):72–9.
- 6 Folk JC, Bennett SR, Klugman MR, Arridell EL, Boldt HC. Prophylactic treatment to the fellow eye of patients with phakic lattice retinal detachment: analysis of failures and risks of treatment. *Retina*. 1990;10(3):165–9.

Statement of Ethics

Published research was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. This study protocol was reviewed and approved by the Ethics Committee of the University of Regensburg, approval number 21-2418-104. A written informed consent was not obtained for participation in this study. The need for informed consent was waived by the Ethics Committee of the University of Regensburg because of the retrospective study design with anonymized data.

Conflict of Interest Statement

The authors Frank Schindler, Teresa Barth, David Maerker, Maria-Andreea Gamulescu, Yordan Cvetkov, and Viola Radeck have no conflicts of interest to declare. Horst Helbig received honoraria for lectures and advisory boards from Alcon, Allergan, Apellis, Bayer, Novartis, and Thea Pharm.

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Author Contributions

Viola Radeck: concept and study design, data interpretation, and drafting, revision, and final approval of manuscript. Horst Helbig: concept and study design, data interpretation, and revision and final approval of manuscript. Frank Schindler, Teresa Barth, David Maerker, Maria-Andreea Gamulescu, and Yordan Cvetkov: data analysis and revision and final approval of manuscript.

Data Availability Statement

All data generated or analysed during this study are included in this article. Further enquiries can be directed to the corresponding author.

- 7 Verhoekx JSN, van Etten PG, Wubbels RJ, van Meurs JC, van Overdam KA. Prophylactic laser treatment to decrease the incidence of retinal detachment in fellow eyes of idiopathic giant retinal tears. *Retina*. 2020;40(6):1094–7.
- 8 Radeck V, Helbig H, Barth T, Gamulescu MA, Maerker D, Prahs P. The learning curve of retinal detachment surgery. *Graefes Arch Clin Exp Ophthalmol*. 2021;259(8):2167–73.
- 9 Radeck V, Helbig H, Barth T, Gamulescu MA, Prahs P, Maerker D. Retinal detachment surgery: trends over 15 years. *Ophthalmologe*. 2022;119(Suppl 1):64–70.
- 10 Radeck V, Helbig H, Maerker D, Gamulescu MA, Prahs P, Barth T. Rhegmatogenous retinal detachment repair: does age, sex, and lens status make a difference? *Graefes Arch Clin Exp Ophthalmol*. 2022;260(10):3197–204.
- 11 Ferrara M, Al-Zubaidy M, Song A, Avery P, Laidlaw DA, Williamson TH, et al. The effect of age on phenotype of primary rhegmatogenous retinal detachment. *Eye*. 2022 Apr 26. <https://www.nature.com/articles/s41433-022-02061-y>
- 12 Walia HS, Shah GK, Blinder KJ. Characteristics and outcomes of sequential rhegmatogenous retinal detachments. *Ophthalmic Surg Lasers Imaging Retina*. 2015;46(4):445–9.
- 13 Xu D, Belin PJ, Staropoli PC, Yannuzzi NA, Vangipuram G, Chiang AU, et al. Clinical outcomes in sequential, bilateral rhegmatogenous retinal detachment. *Ophthalmol Retina*. August 2021;5(8):797–804.
- 14 Sharma MC, Chan P, Kim RU, Benson WE. Rhegmatogenous retinal detachment in the fellow phakic eyes of patients with pseudophakic rhegmatogenous retinal detachment: retina. *Februar*. 2003;23(1):37–40.
- 15 Zhou J, Wei W, You Q, Tu Y. Comparative analysis of the characteristics of bilateral rhegmatogenous retinal detachment. *Zhonghua Yan Ke Za Zhi Chin J Ophthalmol*. Mai 2016;52(5):348–53.
- 16 Singh N, Jain M, Jaisankar D, Sharma T, Raman R; for the Sankara Nethralaya Vitreoretinal Study Group (SNVR-Study Group). Bilateral simultaneous rhegmatogenous retinal detachment: clinical characteristics and surgical outcome. *Retina*. August 2019;39(8):1504–9.
- 17 Delaney WV, Oates RP. Retinal detachment in the second eye. *Arch Ophthalmol*. 1 April 1978;96(4):629–34.
- 18 Laatikainen L, Harju H. Bilateral rhegmatogenous retinal detachment. *Acta Ophthalmol*. 27. Mai 2009;63(5):541–5.
- 19 Finger ML, Bovey E, Wolfensberger TJ. Incidence and surgical management of simultaneous bilateral retinal detachment. *Klin Monbl Augenheilkd*. 26 April 2016;233(4):478–81.
- 20 Finn AP, Elliott D, Kim LA, Husain D, Wu DM, Young LH, et al. Characteristics and outcomes of simultaneous bilateral rhegmatogenous retinal detachments. *Ophthalmic Surg Lasers Imaging Retina*. September 2016;47(9):840–5.
- 21 Gonzales C. The fellow eye of patients with rhegmatogenous retinal detachment. *Ophthalmology*. März 2004;111(3):518–21.
- 22 Everett WG. The fellow-eye syndrome in retinal detachment. *Am J Ophthalmol*. November 1963;56(5):739–48.