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Original Article

Impact of the COVID-19 pandemic on characteristics of retinal detachments: the Canadian experience

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Objective: To describe the impact of the coronavirus disease 2019 (COVID-19) pandemic on the characteristics of retinal detachments (RD) at a tertiary centre.

Design: Retrospective consecutive case series.

Participants: One hundred and ninety eyes of 188 patients with primary, rhegmatogenous RD.

Methods: Patients with RD who presented over a 1-year period (September 14, 2019 to September 13, 2020). The relationship between demographic, anatomic, and visual acuity parameters were compared before and after onset of the pandemic using generalized estimating equations.

Main Outcome Measures: Macular status and corrected distance visual acuity on presentation.

Results: One hundred and eighty-seven eyes, divided into 2 cohorts: pre-COVID (n = 100 September 14, 2019 to March 13, 2020) and post-COVID (n = 87, March 14, 2020 to September 13, 2020). Of the eyes, 63.2% (n = 87) presented with macular detachment in the post-COVID group compared with 45% (n = 100) in the pre-COVID group (odds ration [OR], 2.14; 95% confidence interval [CI],1.19−3.86; $p = 0.011$). As well, eyes in the pre-pandemic cohort had significantly fewer detached quadrants on initial examination (OR, 0.53; 95% CI, 0.30−0.93; $p = 0.026$). Patients in the post-COVID group had a significantly worse corrected distance visual acuity at baseline (mean difference [MD] = −0.35 logMAR, 95% CI, −0.60 to −0.09; $p = 0.008$), but not at 1 month or at final follow-up. No differences were seen between groups with respect to demographics, lens status, treatment, time to presentation, or chronicity. Pneumatic retinopexy was the most commonly performed procedure in both cohorts, with a 71.5% success rate.

Conclusions: Closures after the COVID-19 pandemic affected the characteristics of RDs at presentation with respect to macular detachment, extent of RD, and presenting visual acuity. At final follow-up, final visual acuity and anatomic outcomes were similar between the 2 groups. These data are helpful for future patient education, triaging, and treatment decision making.

Objectif: Décrire l'effet de la pandémie de COVID-19 sur les caractéristiques des décollements de la rétine (DR) dans un centre de soins tertiaires.

Nature: Étude rétrospective portant sur une série de cas consécutifs.

Participants: 190 yeux de 188 patients présentant un DR rhegmatogène primitif.

Méthodes: On a comparé, chez des patients qui ont consulté en raison d'un DR sur une période de 1 an (du 14 septembre 2019 au 13 septembre 2020), le lien entre les paramètres démographiques, les caractéristiques anatomiques et l'acuité visuelle avant et après le début de la pandémie au moyen d'équations d'estimation généralisées.

Principaux paramètres de mesure: État maculaire et acuité visuelle corrigée de loin au moment de l'examen initial.

Résultats: 187 yeux ont été répartis en 2 cohortes: 100 yeux qui ont été examinés avant la pandémie de COVID-19 (du 14 septembre 2019 au 13 mars 2020 – période pré-COVID) et 87 qui ont été examinés après le début de la pandémie (du 14 mars 2020 au 13 septembre 2020 – période post-COVID). On a observé un décollement maculaire dans 63,2 % des cas (n = 87 yeux) dans le groupe post-COVID, comparativement à 45,0 % des cas (n = 100 yeux) dans le groupe pré-COVID (rapport de cotes [RC] = 2,14; intervalle de confiance [IC] à 95 % = 1,19 à 3,86; $p = 0,011$). De même, les yeux de la cohorte pré-COVID présentaient significativement moins de quadrants décollés lors de l'examen initial (RC = 0,53; IC à 95 % = 0,30 à 0,93; $p = 0,026$). L'acuité visuelle corrigée de loin des patients du groupe post-COVID était significativement moindre au départ (DM = -0,35 logMAR; IC à 95 % = -0,60 à -0,09; $p = 0,008$), mais ce n'était plus le cas lors du suivi à 1 mois ou du suivi final. Aucune différence n'a été observée entre les groupes quant aux paramètres démographiques, à l'état du cristallin, au traitement, au moment de l'examen initial et au caractère chronique. Le traitement le plus fréquent dans les 2 cohortes a été la rétinopexie pneumatique, et le taux de réussite s'est élevé à 71,5 %.

Conclusions: La fermeture des services médicaux dans le contexte de la pandémie de COVID-19 a eu des répercussions sur les caractéristiques des DR observées au moment de l'examen initial quant au décollement maculaire, à l'ampleur du DR et à l'acuité visuelle. Au moment de la visite finale, l'acuité visuelle et les résultats anatomiques étaient semblables dans les 2 groupes. Ces données seront utiles pour ce qui est de la sensibilisation des patients, du processus de triage et des décisions thérapeutiques.

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The physical distancing restrictions and lockdowns from the novel coronavirus disease 2019 (COVID-19) pandemic have had significant effects on socioeconomics and health.[1] In Canada, most patients present to the emergency department (ED) with the first symptoms of a posterior vitreous detachment, retinal tear, or retinal detachment (RD). Others are referred by optometrists or family physicians. Given the ongoing apprehension of patients to leave home during the COVID-19 pandemic, it is no surprise that the Centers for Disease Control and Prevention reported a decline in ED visits in the United States by 42% from March 29 to April 25, 2020.[2] In Canada, a similar trend was observed by the Canadian Institute for Health Information, which noted that ED visits dropped by 25% in March 2020 compared with March 2019, with the highest reduction (29%) associated with less urgent patients.[3] At our academic retina practice, we continued to see a similar or higher number of ocular emergencies owing to closures affecting general ophthalmologists and primary eye care providers. At the same time, operating room access was limited to nonelective surgery between March 14 and June 1, 2020, with a gradual easing of operating room restrictions thereafter.

Macula-on rhegmatogenous RDs generally progress to involve the macula within hours to days, depending on factors such as pseudophakia, site of the responsible retinal break, degree of vitreous liquefaction, bullous configuration, axial length, and age.[4,5] Macula-off RDs confer a worse visual prognosis and can have a significant effect on patient quality of life.[4,6] Patients often experience debilitating micropsia in the affected eye, even in cases with significant improvement in the final corrected distance visual acuity (CDVA) after surgery, which may affect depth perception and binocularity.[7]

Several studies have demonstrated that the retinal outer segment layer is reduced by approximately 10% of normal width with complete loss of cone photoreceptor markers within 1 week after detachment, with significant changes to the ganglion cell layer.[7,8] Duration of the macular detachment, bullous configuration, and CDVA at presentation are several factors that correlate with final CDVA in macula-off detachments.[4–6]

The prevalence of macula-off RDs is reported to be between 50% and 65% of all RDs in large epidemiologic reports.[9,10] Small studies from the United Kingdom and North America have reported lower numbers of RD presentations within 1 to 3 months of the COVID-19 pandemic.[11–14] Although not statistically significant, previous authors have reported a reduced percentage of macula-on detachments, and a higher incidence of proliferative vitreoretinopathy (PVR) after the onset of the pandemic.

In the largest case series in North America, this study aimed to identify the effects of the COVID-19 pandemic and ensuing hospital and eye care restrictions on the characteristics of RDs at presentation, as well as treatment course, final visual acuity, and anatomical outcome at final follow-up.

Patients and Methods

In this retrospective case series, all patients who presented to the retina service at Sunnybrook Health Sciences Centre, Toronto, Canada, over a 1-year period between September 14, 2019 and September 13, 2020 were recruited. The onset of the COVID-19 pandemic was recorded as starting on March 14, 2020, the same day that pandemic-related school closures came into effect in the region. Patients were identified by the respective Ontario Health Insurance Plan physician billing codes as follows: retinal detachment repair with pars plana vitrectomy (PPV) plus possible supplemental barricade laser retinopexy (E148 with or without E151), pneumatic retinopexy (PnR) (E149 with Z851 or R990), or scleral buckle (SB) (E152). Institutional ethics review board was obtained at the Sunnybrook Health Sciences Centre, Toronto, Canada.

Patients were only included if they presented between the specified dates with a primary rhegmatogenous RD and had at least 1 month of follow-up after pneumatic retinopexy, or at least 6 weeks after PPV, SB, or combined PPV and SB given the use of long-acting gas in most surgical cases. Patients were excluded if the affected eye was treated with laser retinopexy for a retinal tear only, or if the affected eye had pre-existing maculopathy, retinopathy, amblyopia, or prior history of serous, tractional or rhegmatogenous RD in the affected eye.

Data on baseline demographics (age, gender, laterality, site of first presentation [i.e., emergency physician, optometrist, ophthalmologist, or family physician], time from symptom onset to treatment by a retina specialist, type of treatment, number of treatments to achieve reattachment if failed primary procedure), as well as RD characteristics at presentation (status of macula, number of quadrants of detached retina, lens status, Snellen visual acuity and presence of PVR) at 1 month and final follow-up were collected. All visual acuity data were converted to logarithm of the minimum angle of resolution (logMAR) units, with logMAR values for visual acuity of "no light perception," "light perception," "hand motion," and "counting fingers" assigned values of 3, 2.7, 2.3 and 1.8, respectively, based on previously published literature.[15]

The primary outcome measures were the status of the macula and CDVA on presentation between the pre- and post-COVID-19 pandemic cohorts. Secondary outcomes were the duration of symptoms and final CDVA between the 2 cohorts.

Statistical Analysis

Continuous characteristics were represented with a mean ± standard deviation (SD), MDs, and a 95% confidence interval (CIs). Given that there were patients in the cohort with bilateral RDs at presentation, generalized estimating equations that accounted for within-patient correlation were computed to evaluate the difference in continuous variables and secondary end points. A scale linear model was used to

Table 1—Descriptive statistics for categorical variables

		Total		Pre-COVID-19 September 14, 2019 to March 13, 2020		Post-COVID-19 March 14, 2020 to September 13, 2020	
Demographics		N (eyes)	%	n (eyes)	%	n (eyes)	%
Total		187		100		87	
Sex	Female	67	35.8	34	34	33	37.9
	Male	120	64.2	66	66	54	62.1
Laterality	Left	88	47.1	50	50	38	43.7
	Right	99	52.9	50	50	49	56.3
History of trauma	Yes	12	6.4	4	4	8	9.2
	No	174	93	96	96	78	89.7
	Missing	1	0.5	0	0	1	1.1
Lens status at presentation	Phakic	127	67.9	68	68	59	67.8
	Pseudophakic	57	30.5	30	30	27	31
	Aphakic	3	1.6	2	2	1	1.1
Macula status at presentation	On	75	40.1	49	49	26	29.9
	Off	100	53.5	45	45	55	63.2
	Split	10	5.3	6	6	4	4.6
	Missing	2	1.1	0	0	2	2.3
Quadrants detached	1	51	27.3	32	32	19	21.8
	2	67	35.8	34	34	33	37.9
	3	26	13.9	10	10	16	18.4
	4	24	12.8	10	10	14	16.1
	Missing data	19	10.2	14	14	5	5.7
Chronic RD		29	15.5	13	13	16	18.3
Treatment	Laser barricade	3	1.6	2	2	1	1.1
	PnR	94	50.3	49	49	45	51.7
	PPV	41	21.9	24	24	17	19.5
	SB	6	3.2	4	4	2	2.3
	Combined PPV/SB	1	0.5	0	0	1	1.1
	PnR then PPV	39	20.9	20	20	19	21.8
	PPV then PnR	2	1.1	0	0	2	2.3
	PPV then SB	1	0.5	1	1	0	0.0
Site of first presentation	Emergency	36	19.3	15	15	21	26.4
	General practitioner	2	1.1	1	1	1	1.1
	Ophthalmologist	67	35.8	36	36	31	35.6
	Retina specialist	1	0.5	0	0	1	1.1
	Optometrist	71	38.0	40	40	31	35.6
	Missing	10	5.3	2	2	8	9.2

PnR, pneumatic retinopexy; PPV, pars plana vitrectomy; SB, scleral buckle.

investigate the relationship between age, time to presentation to retina specialist, and the logMAR CDVA at baseline, 1 month, and final follow-up between the pre- and post-COVID groups.

Categorical variables were described using proportions, odds ratios (ORs), and 95% CIs. Categorical outcomes in patients who presented before and after the onset of the COVID-19 pandemic were compared using generalized estimating equations that accounted for within-patient correlation with a binary or ordinal logistic model as appropriate. Using this model, the association of gender, laterality, history of trauma, lens status on presentation, macula status on presentation, number of detached quadrants, type of treatment received, and site of first presentation were analyzed between the 2 patient cohorts. We also analyzed the incidence of chronic RDs in the pre- and post-COVID cohorts as defined by RDs of >4 weeks in duration (Tables 1 and 2).

SPSS Statistics version 23 (IBM, Armonk, NY) was used for all analyses, and $p = 0.05$ was used throughout to confer statistical significance.

Table 2—Comparison between pre- and post-COVID-19 pandemic cohorts for categorical variables

Demographics	*p* value	Odds ratio	95% CI
Sex (female)	0.58	1.19	0.65–2.16
Laterality (left)	0.39	1.29	0.72–2.30
History of trauma (no)	0.15	2.46	0.72–8.48
lens status at presentation	0.99	1.00	0.54–1.85
Macula status at presentation	0.011*	2.14	1.19–3.86
Macula status between first 2 months of pre- and post-COVID-19 pandemic cohorts	0.11	2.60	0.78–8.61
Quadrants detached	0.026*	0.53	0.30–0.93
Treatment	0.91	0.97	0.56–1.66
Site of first presentation	0.21	1.42	0.82–2.46
Chronicity (>4 wk)	0.40	1.41	0.63–3.15

*$p < 0.05$.

Results

Baseline characteristics

One hundred and ninety eyes of 188 patients met the inclusion criteria. Three eyes from the total were excluded as the exact date of presentation was not documented from retrieved records. After exclusion, 187 eyes were used for the main analysis, with 100 and 87 eyes in the pre-COVID and post-COVID cohorts, respectively.

Tables 1 and 3 summarize the baseline characteristics of all patients. Sixty-seven eyes (35.8%) were from female patients, and the average age was 56.84 ± 15.06 years. The most common site of first presentation was an optometry clinic (38%), followed by an ophthalmology clinic (35.8%), hospital ED (19.3%), family medicine clinic (1.1%), and external retina specialist clinic (0.5%). The average time from symptom onset until the patient was seen by a retina specialist was 18.04 ± 33.45 days. Only 12 eyes (6.4%) reported having an RD secondary to trauma.

Retinal detachments in phakic eyes comprised the majority of cases (67.9%), whereas pseudophakic and aphakic eyes comprised 30.5% and 1.6% of cases, respectively. At presentation, 40.1% of RDs were classified as being macula-on, 53.5% were macula-off, and 5.3% were macula-split RDs. Information regarding the detachment of specific quadrants was available for 168 eyes, of which 27.3% had a detachment of a single quadrant, 35.8% of 2 quadrants, 13.9% of 3 quadrants, and 12.8% of 4 quadrants.

The most commonly performed intervention was PnR alone (50.3%), followed by PPV alone (21.9%), PnR followed by PPV (20.9%), SB (3.1%), laser photocoagulation (1.6%), PPV followed by PnR (1.1%), PPV followed by SB (0.5%), and combined PPV and SB (0.5%; Table 1). The average logMAR CDVA of patients at baseline, 1-month follow-up, and final follow-up (average 2.5 ± 0.6 months) was 1.00 ± 0.89 (~20/200), 0.76 ± 0.76 (~20/115), and 0.69 ± 0.71 (~20/100), respectively (Table 3). Given the limited sample size of patients with proliferative vitreoretinopathy (n = 3), statistical analysis was not conducted on this parameter.

Main analysis

In comparing baseline characteristics between the pre- and post-COVID groups, no statistically significant differences were seen for gender ($p = 0.58$), age ($p = 0.42$), laterality ($p = 0.39$), history of trauma ($p = 0.15$), lens status ($p = 0.99$), treatment received ($p = 0.91$), site of first presentation ($p = 0.21$), and time to presentation to a retina specialist ($p = 0.75$; Tables 2 and 4). We found a slightly lower number of RDs 6 months after (n = 87) relative to before (n = 100) the onset of the pandemic (Fig. 1).

There were several statistically significant differences in the baseline characteristics of RDs between the 2 cohorts (Table 2). At baseline, 63.2% (n = 87 eyes) of RDs were macula-off detachments in the post-pandemic group versus 45% (n = 100 eyes) in the pre-COVID group (OR, 2.14; 95% CI, 1.19–3.86; $p = 0.011$). We further analyzed the percentage of macula-off versus macula-on detachments by month (Fig. 2), and found a trend toward a lower number of macula-on RDs most prominent in the first 2 months (i.e., March 14 to May 13, 2020) after the onset of the pandemic.

Patients in the pre-pandemic group had a significantly lower number of detached quadrants (OR, 0.53; 95% CI, 0.30–0.93; $p = 0.026$) at the time of initial examination relative to post-pandemic patients (Table 2). Nineteen

Table 3—Descriptive statistics for continuous variables

Demographics		Total Mean ± SD	Pre COVID-19 Pandemic September 14, 2019 to March 13, 2020 Mean ± SD	Post-COVID-19 Pandemic March 14, 2020 to September 13, 2020 Mean ± SD
Age (y) (N = 187)	Chronicity (>4 wk) (n = 29)	56.84 ± 15.06 62.00 ± 12.11	56.02 ± 15.56	57.79 ± 14.51
Time to retina specialist (d) (n = 173)		18.04 ± 33.45	17.26 ± 34.76	18.89 ± 32.16
logMAR visual acuity	Baseline (n = 186) 1 month (n = 167) Last follow-up (n = 171)	1.00 ± 0.89 0.76 ± 0.76 0.69 ± 0.71	0.84 ± 0.83 0.72 ± 0.72 0.69 ± 0.73	1.19 ± 0.94 0.82 ± 0.81 0.69 ± 0.70

logMAR, logarithm of the minimum angle of resolution.

Table 4—Comparison between pre- and post-COVID-19 pandemic cohorts for continuous variables

Demographics		Pre–Post COVID-19 *p* value	Mean difference	95% CI
Age		0.42	−1.77	−6.06 to 2.52
Time to retina specialist		0.75	−1.64	−11.55 to 8.28
logMAR visual acuity	Baseline	0.008*	−0.35	−0.60 to −0.09
	1 month	0.45	−0.09	−0.32 to 0.14
	Last follow-up	0.94	0.007	−0.21 to 0.22

logMAR, logarithm of the minimum angle of resolution.
*$p < 0.05$.

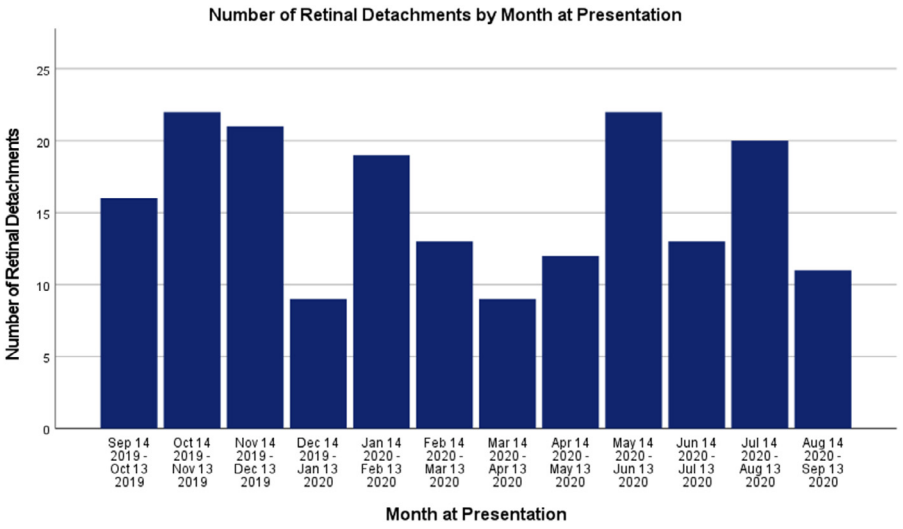

Fig. 1—Number of retinal detachments by month from September 14, 2019 to September 13, 2020. The number of RDs in the 6 months before (n = 100) the pandemic were similar to the subsequent 6 months (n = 87).

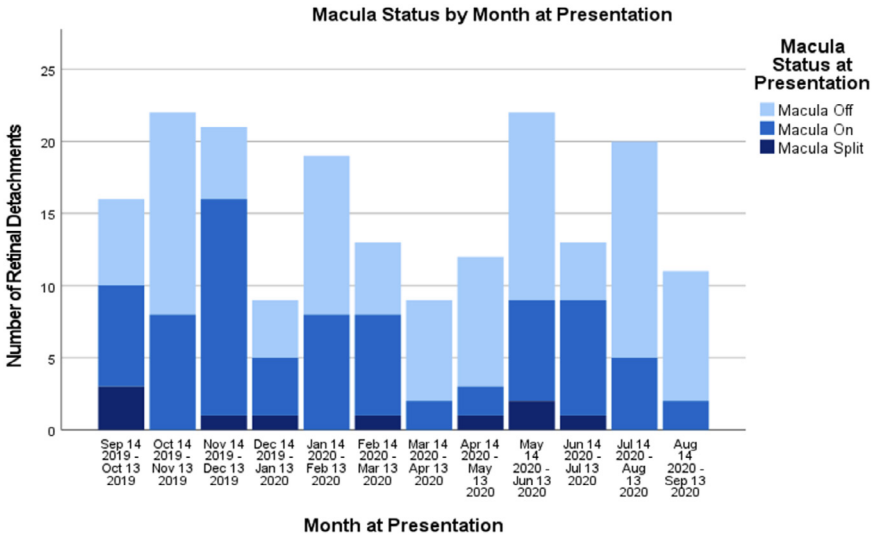

Fig. 2—The status of the macula in patients with RD by month. There was a significantly higher proportion of macula-off RDs in the 6 months after March 14, 2020 compared with the previous 6 months.

eyes (21.8%) had 1 detached quadrant in the post-COVID group compared with 32 eyes (32%) in the pre-COVID group; 33 eyes (37.9%) had 2 detached quadrants in the post-COVID group compared with 34 eyes (34%) in the pre-COVID group; 16 eyes (18.4%) had 3 detached quadrants in the post-COVID group compared with 10 (10%) in the pre-COVID group; and 14 eyes (16.1%) had 4 detached quadrants in the post-COVID cohort compared with 10 eyes (10%) in the pre-COVID group (Table 1; Fig. 3).

Patients in the post-COVID group had a significantly worse CDVA at baseline (MD = −0.35 logMAR, 95% CI, −0.60 to −0.09; p =0.008), but not at 1 month or final follow-up (p = 0.45 and p = 0.94, respectively; Table 4).

No difference was seen in the proportion of chronic RDs between the 2 groups (OR, 1.41; 95% CI, 0.63−3.15; p = 0.40; Table 2). Furthermore, there was no significant difference in terms of treatment success or number of treatment interventions needed to ensure reattachment between the 2 cohorts, suggesting a similar final anatomical success (Tables 1 and 2).

Discussion

This was the first Canadian study to analyze the effects of the COVID-19 pandemic and the ensuing health care restrictions on the characteristics of RDs at presentation to an academic retina centre. We reported a significant

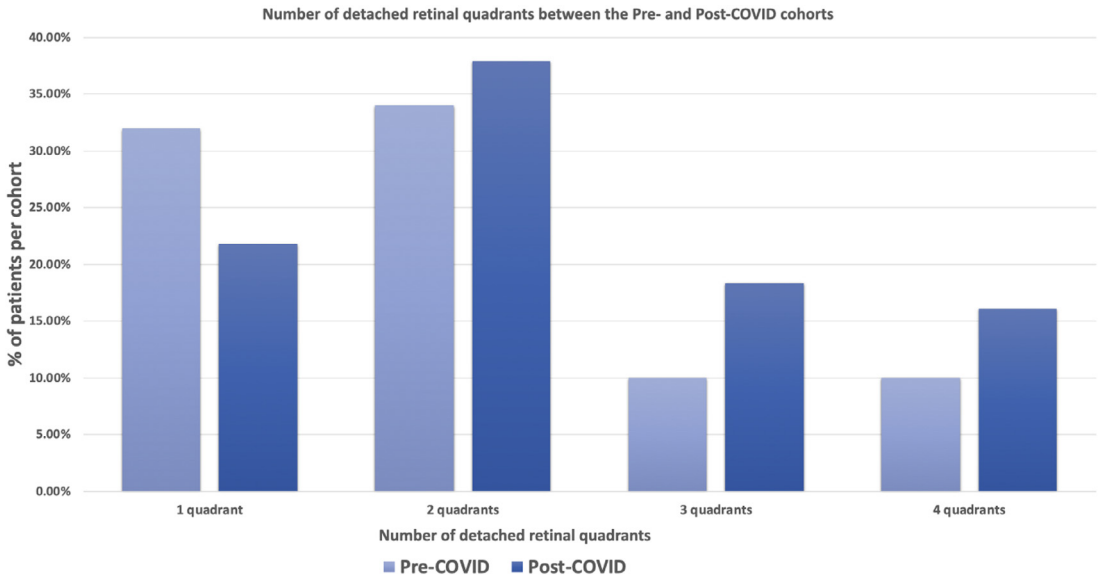

Fig. 3—The number of detached retinal quadrants between pre and post COVID cohorts.

increase in the number of RDs presenting with macular detachment between March 14, 2020 and September 13, 2020 compared with the previous 6 months (63.2% vs 45%, respectively). In keeping with this finding, we also found a significant difference with respect to poorer baseline CDVA and larger areas of detached retina after the onset of the COVID-19 pandemic. Nevertheless, the final visual acuity, percentage of PVR at baseline, and the choice of treatment (PnR vs PPV vs SB) were similar despite differences in initial presentation. Notably, the percentage of patients who achieved successful anatomical and visual outcomes at 1 to 2 months of follow up with PnR alone was 71.5% in this series (Table 1), which is similar to previous reports of PnR success rates.[16] Furthermore, we found a similar anatomical success rate in terms of the number of surgical interventions pre- and post-COVID-19.

Contrary to other reports from the United Kingdom and North America[11–14,16] citing a significant reduction in the total volume of RDs seen over a 3- to 5-month period from the onset of the pandemic, we continued to treat a high volume of patients for the 6 months after March 14, 2020 (Fig. 1). Although our numbers remained high in the 2 cohorts, we observed a reduced number of RDs in the first 2 months (n = 21) after the onset of the pandemic relative to any 2-month period before the pandemic. By the third month after the onset of the pandemic, the number of RDs seen returned to the historical baseline.

Akram et al.[17] have cited the presence of fewer "pinch points" during the pandemic for a patient to see a retina specialist as the reason for an anomalous increase in the number of RDs seen in May and April 2020 compared with the same period in 2019 (i.e., 35 vs 12) in the United Kingdom. Our higher numbers may be owing to the fact that Sunnybrook Health Sciences Centre in Toronto is a large referral centre that continued to operate despite other ophthalmic clinic closures in the city. In North America, Rohl et al. reported 25 versus 11 RDs over a 5-month period at a centre in Colorado before and after March 13, 2020.[16]

Although the specific reasons for delay to presentation were not formally documented on patient charts, we gathered anecdotal evidence that many patients were reluctant to present to the ED or hospital owing to the fear of contracting COVID-19. Others were unsure whether ophthalmology and optometric offices were open and waited longer than they would have otherwise to seek care after vision loss. As well, public health authorities and news outlets urged the public to stay at home except for essential reasons. It is possible that patients were simply unable to triage the urgency of their retinal symptoms properly. Nevertheless, the time to see a retina specialist was not found to be statistically significant between the pre- and post-pandemic cohorts. This may be in part owing to the imprecise documentation of symptom onset. With respect to the recording of first onset of symptoms, the onset of flashes and floaters was not often differentiated from the onset of a visual field deficit or shadow on patient charts. As well, some patients reported an approximate onset of symptoms or gave a range (i.e., 2–4 weeks), the average of which was used to approximate the duration of symptoms.

Operating room closures and actual or perceived lack of access to protective equipment have been cited as other reasons complicating the delivery of vitreoretinal surgery services during the pandemic. As one of Canada's largest retina centers, we perform a high number of pneumatic retinopexies, which do not require access to operating room facilities and preoperative COVID testing. Although we observed a significantly higher proportion of macula-off RDs with significantly more detached retinal quadrants and lower baseline CDVA, a similar final CDVA at last follow-up after intervention was achieved, regardless of the pandemic.

Furthermore, our single-procedure PnR success rate at 3 months was 71.5 % (Table 1) in this large retrospective study, which is comparable to previously reported rates.[18–20] There is a role for pneumatic retinopexy for patients who meet treatment criteria in the context of limited operating room time affected by the pandemic.[18]

This study had several significant limitations. First, there was inherent bias in the retrospective nature of this series in patient selection and loss to follow-up. Second, there was some reported seasonal variability in the incidence of RDs, which is not supported by strong evidence, but which was not controlled for in this study.[21] As well, we reported no significant difference in the presentation of chronic RDs pre- and post-pandemic as defined by patient onset of a visual field deficit over a 4-week period. This is highly subjective as patients often do not distinguish between the onset of a visual field defect versus flashes and floaters, and the data may not represent the true rate of chronic RDs after the onset of the pandemic. Finally, we used the 3-month mark as the last follow-up to define anatomic reattachment rates. Longer-term follow-up may be helpful in distinguishing anatomical success and postoperative PVR at 6 to 12 months.

The effects of our findings are significant, especially given the subsequent waves of the pandemic that are currently afflicting many cities worldwide. Previous literature has suggested that RDs occurred less frequently during the COVID-19 pandemic owing to reduced patient activity and fewer opportunities to disturb the vitreous interface from eye surgery or trauma.[11,14,16] Although this may be true, other factors are likely to be more significant based on our results. The significant shift in the percentage of macula-off RDs suggests that, despite stable volumes of RDs over time, patients were waiting longer before seeking care. Second, our data suggested that more public education is needed to warn patients regarding the signs and symptoms of RD and to emphasize the necessity of seeking care promptly if they develop these symptoms. It should be noted that our findings were derived from a large Canadian urban centre with a relatively low prevalence of COVID-19 compared with other major cities in the world. Nonetheless, fear and resistance to go to the hospital were significant factors that affected the characteristics of RDs observed.

More efforts should be made to reassure patients regarding the safety of hospitals and the availability of emergency and ophthalmic services during the COVID-19 pandemic to strive for timely care and optimal outcomes in patients with retinal detachment.

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