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Decreased retinal detachments during a COVID-19 lockdown period in Colorado

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Editor:

There are emerging reports of lower rates of retinal detachments during the COVID-19 lockdown periods in multiple countries around the world. The Moorfields Eye Hospital in London first reported a 62% decrease in the number of patients presenting with retinal detachment during their lockdown period compared to the same period in 2019 (Wickham et al. 2020). An ophthalmic emergency department in Bologna, Italy, showed a similar 64% decrease, and a 53% decrease was described per report using the Scottish Retinal Detachment Census (Pelligrini et al. 2020). To our knowledge, there have not been any reports on retinal detachment incidence during the COVID-19 lockdown in North America so far. We found a 56% decrease in number of retinal detachment surgeries performed and a 50% decrease in retinal tears and holes requiring laser during a COVID-19 lockdown period in Colorado. Of those detachments that presented this year during lockdown, more presented as macula off (63.6% in 2020 versus 44% in 2019), suggesting a possible trend of delayed presentation to care. See Table 1 for characteristics of retinal detachments and retinal laser procedures in 2020 versus 2019.

Table 1. Total retinal detachment repairs and total retinal tear/holes requiring laser in the COVID-19 lockdown period at the University of Colorado Sue Anschutz-Rogers Eye Center from 3/13/2020 to 5/8/2020 as compared with the same time period in 2019.

Characteristics	2019	2020
Total # retinal detachment repairs	25	11
Sex (Female/Male)	9/16	3/8
Mean age ± SD	56.8 ± 16	57.8 ± 8.1
Macula On	14 (56%)	4 (36.4%)
Macula Off	11 (44%)	7 (63.6%)
Total # retinal tear/hole laser procedures	16	8
Sex (Female/Male)	9/7	3/5
Mean age ± SD	61.1 ± 12.9	63.0 ± 14.0

We defined our COVID-19 "lockdown" period as beginning 13 March 2020 (first COVID-19 death in Colorado, first mandated shutdown of public venues) and ending 8 May 2020 (mandatory stay-at-home order lifted, some businesses allowed to re-open). We reviewed the charts of all patients undergoing retinal detachment surgery or retinal laser procedures at the University of Colorado Sue Anschutz-Rodgers Eye Center, a large academic eye centre in Aurora, Colorado, and compared them with those of the same time period in 2019. This study was approved by the Colorado Multiple Institution Review Board (COMIRB), protocol #20-1207.

These findings of decreased retinal detachment rates in our study and others are concerning, as it may suggest patients were presenting less due to fear of contracting coronavirus or were experiencing difficulties accessing proper channels of care due to closure of general practitioner and optometric offices during the lockdown. One could also suggest that retinal detachments were actually occurring at a decreased rate, potentially due to decreased rates of anterior segment surgery. However, it seems unlikely to see this magnitude of effect this early, since increase in detachment risk occurs in the first year after cataract surgery and not only in the few months following. Future studies are needed to confirm these trends in a larger and multi-institutional scale, and there is a need to assess the rates of retinal detachments in the months following lockdown periods to see if there is a wave of patients with delayed presentations. Regardless, we must make concerted efforts to increase awareness of retinal detachment warning signs and encourage patients to seek ophthalmic care in any future lockdown periods, which may be looming with a second wave of COVID-19.

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This study was approved by the Colorado Multiple Institution Review Board (COMIRB), protocol #20-1207. This study was performed in accordance with the Helsinki Declaration of 1964, and its later amendments. Informed consent was waived due to the retrospective nature and approved by the COMIRB.

Prophylactic internal limiting membrane peeling during rhegmatogenous retinal detachment surgery

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Dear Editor

In the setting of a rhegmatogenous retinal detachment (RRD), retinal pigment epithelial (RPE) cells are released into the vitreous cavity and thought to provoke formation of proliferative vitreoretinopathy (PVR) membranes and PVR-related epiretinal membranes (ERM) following RRD surgery using the internal limiting membrane (ILM) as a scaffold (Fallico et al., 2018). Previous studies have suggested that there may be a reduction in ERM formation following repair of RRDs with prophylactic intra-operative ILM peeling (Yannuzzi et al., 2018) and potential better single surgery success. However, a clear benefit in final visual acuity or surgical success has not been established (Bawankule et al., 2019). The purpose of this paper was to examine the postoperative outcomes of eyes without preoperative macular pathology undergoing primary RRD surgery with and without the use of prophylactic ILM peeling during pars plana vitrectomy (PPV), in a large multicenter study.

We report a subgroup analysis from the Primary Retinal Detachment Outcomes (PRO) study, which has been previously described in detail (Ryan, in Press). For the current study, consecutive patients with primary RRD who underwent repair with either primary PPV or a combination of PPV and scleral buckling from 1 January 2015, through 31 December 2015, from 6 centres across the country were included in the analysis. Eyes that had preoperative ERM, PVR or macular hole were excluded, meaning that this study only examined patients who had prophylactic ILM peeling in primary RRD without any macular pathology that would bias towards ILM peeling for other reasons. The primary outcome was single surgery anatomic success with secondary outcomes of final postoperative visual acuity and the development of postoperative ERM formation.

There were 1442 eyes that met the inclusion criteria, with 41 eyes (2.8%) undergoing concomitant ILM peeling at the time of RRD surgery. Comparing eyes that underwent ILM peeling during RRD surgery versus those that did not revealed no significant differences in concomitant SB surgery, number of retinal breaks, pre- and postoperative visual acuity, macular detachment status, number of secondary retinal surgeries, or in the development of postoperative ERM (Table 1). Eyes that underwent ILM peeling had a significantly higher single surgery success rate following primary RRD repair (95% vs 85%, $p = 0.03$). This was maintained on multivariate analysis controlling for preoperative macular status, surgeon identification and type of retinal detachment surgery ($p = 0.02$). One eye (2.4%) developed an ERM post-ILM peeling while 21 (1.5%) developed an ERM in the non-ILM peeling cohort ($p = 0.47$).

We report that eyes without preoperative macular pathology undergoing ILM peeling at the time of RRD repair had higher single surgery success rates. There were no differences in postoperative ERM formation or final visual acuity. There is thought that by peeling the ILM prophylactically during RRD repair, the residual posterior cortical gel is completely removed as well as the scaffold on which cellular proliferation may develop, which may limit posterior PVR formation and perhaps prevent recurrent detachments (Hisatomi et al., 2018). It is plausible that by removing the ILM only within the arcades may be sufficient to remove more of the posterior cortical gel in enough high-risk eyes, or those with vitreoschisis, and prevent posterior PVR from applying traction on the peripheral retina.

As with any surgical study with numerous different surgeons, a number of intra-operative factors cannot be accounted for that certainly could bias the results, such as the area of the ILM peel, dyes used to stain the ILM and different techniques for ILM peeling. Still, we report a significantly higher single surgery success rate in eyes that underwent peeling of the ILM during RRD surgery. Despite this anatomic success, there were no differences in final visual acuity or postoperative ERM formation between eyes with and without concomitant ILM peeling during RRD repair.