

replication (Lu et al. 2020; Seah et al. 2020; Ulhaq & Soraya 2020). Further studies are needed to investigate, whether other ocular structures, e.g. vitreous or iris, are more suitable to detect SARS-CoV-2 pre- and post-mortem. In summary, our data indicate, that neither postmortem COS nor NPS can reliably exclude donors with SARS-CoV-2, particularly, when the last positive pre-mortem NPS was obtained 90 hr or more before death.

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References


- Deng W, Bao L & Gao H et al. (2020): Ocular conjunctival inoculation of SARS-CoV-2 can cause mild COVID-19 in Rhesus macaques. *bioRxiv*. <https://doi.org/10.1101/2020.03.13.990036>
- Lu CW, Liu XF & Jia ZF (2020): 2019-nCoV transmission through the ocular surface must not be ignored. *Lancet* **395**: e39.
- Seah IYJ, Anderson DE, Kang AEZ, Wang L, Rao P, Young BE, Lye DC & Agrawal R (2020): Assessing viral shedding and infectivity of tears in coronavirus disease 2019 (COVID-19) patients. *Ophthalmology* **127**: 977–979.
- Ulhaq ZS & Soraya GV (2020): The prevalence of ophthalmic manifestations in COVID-19 and the diagnostic value of ocular tissue/fluid. *Graefes Arch Clin Exp Ophthalmol* **258**: 1351–1352.
- Wu P, Duan F, Luo C, Liu Q, Qu X, Liang L & Wu K (2020): Characteristics of ocular findings of patients with coronavirus disease 2019 (COVID-19) in Hubei Province, China. *JAMA Ophthalmol* **138**: 575.

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Telementoring and remote training in the present era

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Editor,

Access to surgical teaching and expertise can be challenging at the best of times but in the era of COVID-19 and social distancing how can we ensure its delivery? This pandemic has seen a raft of innovative solutions emerge, in both the clinical and educational spaces, that may well lay the foundations for the future.

Telementoring is the use of information technology to provide real-time guidance despite different geographical locations (Huang et al 2019), and the concept dates back to the mid-1990s (El-Sabawi & Magee 2016). The effectiveness of surgical telementoring compared with on-site training has been reported in systematic reviews, where comparable safety and efficacy profiles between the two techniques were found (Bilgic et al 2017; Erridge et al 2019). So why has deployment to date largely focused on remote or rural areas and been so poorly adopted?

The answer is primarily tradition. The legal, ethical and cost issues melted away within weeks of the pandemic commencing, and it has rapidly become apparent over the last few months that it is more rather than less time efficient. Lacking infrastructure has also become a somewhat redundant argument given that a plethora of technologies already existed but were poorly utilised by healthcare as whole. In the last few weeks, the authors have used a

combination of tele-education and tele-medicine platforms including AttendAnyWhere (Attend Anywhere, Australia), WhatsApp (WhatsApp Inc., US), Zoom (Zoom Video Communications, Inc., US), Teams (Microsoft, US), Cisco Webex (Cisco Systems, Inc., US), Lifesize (Lifesize, Inc., US), FaceTime (Apple Inc., US), Skype (Microsoft, US), GoToMeeting (LogMeIn, Inc., US), Google Hangouts (Google, US) and these, in turn, are but a small sample of the available options.

Beyond traditional teaching using video, the last few months have seen various interactive solutions from tele-appraisal to supervision during tele-consultations (where the trainer, trainee and patient video conference from disparate respective locations). Surgical training has also adapted, with socially distanced training on the Eyesi simulator (VRmagic, Haag-Streit Diagnostics, Switzerland) and HelpMeSee (HelpMeSee, Inc, US), via a live video feed, streamed through a laptop, along with a webcam capturing the trainees hand movements and general environment. While it is clear that some enthusiasm for the ‘tele-revolution’ is clearly present, not all teaching will ultimately convert to this modality.

Telehealth does, however, have great potential for unifying differing locations and accessing specialist educators much further afield. This means that ‘dialling’ into highly specialized multi-disciplinary meetings, obtaining second opinions rapidly and better integration of primary-secondary-tertiary care through these systems may all become possible. Additionally, one of the core purported aims, that of training in remote and developing world locations, will become more attainable if this practice becomes more commonplace.

John F Kennedy once remarked that when written in Chinese, the word ‘crisis’ is composed of two characters—one representing danger and the other representing opportunity. At this juncture, there appears to be the means, the technology and the need to rapidly evolve our utilisation of remote training and telementoring. To what extent it becomes integral to our practice is yet to be determined but in all probability it will have a much greater role in the near term and more distant future.

References

- Bilgic E, Turkdogan S, Watanabe Y, Madani A, Landry T, Lavigne D, Feldman LS & Vassiliou MC (2017): Effectiveness of tele-mentoring in surgery compared with on-site mentoring: a systematic review. *Surg Innovat* **24**: 379–385.
- El-Sabawi B & Magee W (2016): The evolution of surgical telementoring: current applications and future directions. *Ann Trans Med* **4**: 391.
- Erridge S, Yeung DKT, Patel HRH & Purkayastha S (2019): Telementoring of surgeons: a systematic review. *Surg Innovat* **26**: 95–111.
- Huang EY, Knight S, Guetter CR, Davis CH, Moller M, Slama E & Crandall M (2019): Telemedicine and telementoring in the surgical specialties: a narrative review. *Am J Surg* **218**: 760e766.

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

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There are emerging reports of lower rates of retinal detachments

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-Rodgers 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

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.

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.

References

- Pellegrini M, Roda M, Lupardi E, Di Geronomo N, Giannaccare G & Schiavi C (2020): The impact of COVID-19 pandemic on ophthalmological emergency department visits. *Acta Ophthalmol.*
- Wickham L, Hay G, Hamilton R, Wooding J, Tossounis H, da Cruz L, Siriwardena D & Strouthidis N (2020): The impact of