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Supplementary Materials

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Footnotes and Disclosure

The authors have no proprietary or commercial interest in any materials discussed in this article.

Telemedicine for postoperative consultations following vitrectomy for retinal detachment repair during the COVID-19 crisis: a patient satisfaction survey



The most recent World Health Organization (WHO) report on the coronavirus disease 2019 (COVID-19) pandemic confirms a total of 4 013 728 cases, with a death toll of 278 993.¹ The staggering number of deaths has thrust us into embracing telemedicine within ophthalmology, with the increased use of video and telephone consultations, to

reduce the risk of virus transmission.² At our tertiary eye unit, we continue to provide a 7-day-a-week emergency retinal surgical service; however, our postoperative review has been modified to include telephone consultations, rather than face-to-face patient contact. As part of an ongoing plan to transform the vitreoretinal emergency service, we conducted a survey of patient perspective on the use of telephone consultations to replace routine postoperative review as a possible long-term plan.

We conducted a retrospective patient satisfaction survey of 53 consecutive patients who presented with a retinal detachment over a 6-week period since the beginning of the lockdown in United Kingdom on 23rd March 2020. All patients received a postoperative telephone consultation 2 weeks after

(A) **VITREORETINAL EMERGENCY SERVICE
POST-OPERATIVE PHONE CONSULTATIONS**
Patient Satisfaction Survey

We would like your opinion on our telephone consultation service during the Covid-19 crisis, in order to ensure we are meeting your clinical needs. Your responses to the questions will enable us to see if we are providing a satisfactory service and all answers will be used to further improve the emergency service, we provide

1. How did you feel about getting a phone consultation for your post-operative review, rather than attend a clinic appointment? (Please rate on a scale of 1 to 5 – 1 = very dissatisfied; 5 = very satisfied)
2. Did the surgeon ring you at an appropriate period following the surgery? Yes or No
3. Were they able to answer any queries you had regarding the surgery/post-operative care? Yes or No
4. Did you feel the duration of the phone call was sufficient? Yes or No
5. Were you satisfied with the management plan at the end of the phone consultation? (Please rate on a scale of 1 to 5 – 1 = very dissatisfied; 5 = very satisfied)
6. Were they clear in advising you regarding your medication? Yes or No
7. Did you know who to contact if you had a problem with your eye/when you should attend A&E? Yes or No
8. How satisfied were with the clarity of the telephone line? (Please rate on a scale of 1 to 5 – 1 = very dissatisfied; 5 = very satisfied)
9. Overall, how satisfied were you with your phone consultation? (Please rate on a scale of 1 to 5 – 1 = very dissatisfied; 5 = very satisfied)
10. Do you think this would be an appropriate platform to consult patients even after the Covid-19 crisis has settled? Yes or No
11. Do you have any further comments you would like to add?

(B)

Question	Mean Score (out of 5)
1. How did you feel about getting a phone consultation for your post-operative review, rather than attend a clinic appointment?	4.3
2. Were you satisfied with the management plan at the end of the phone consultation?	4.3
3. How satisfied were with the clarity of the telephone line?	4.9
4. Overall, how satisfied were you with your phone consultation?	4.3

Fig. 1 – (A) Patient feedback questionnaire. (B) Survey questions with a 1–5 rating scale. (C) Pie chart to represent number of patients who answered yes or no to questions relating to telephone consultation.

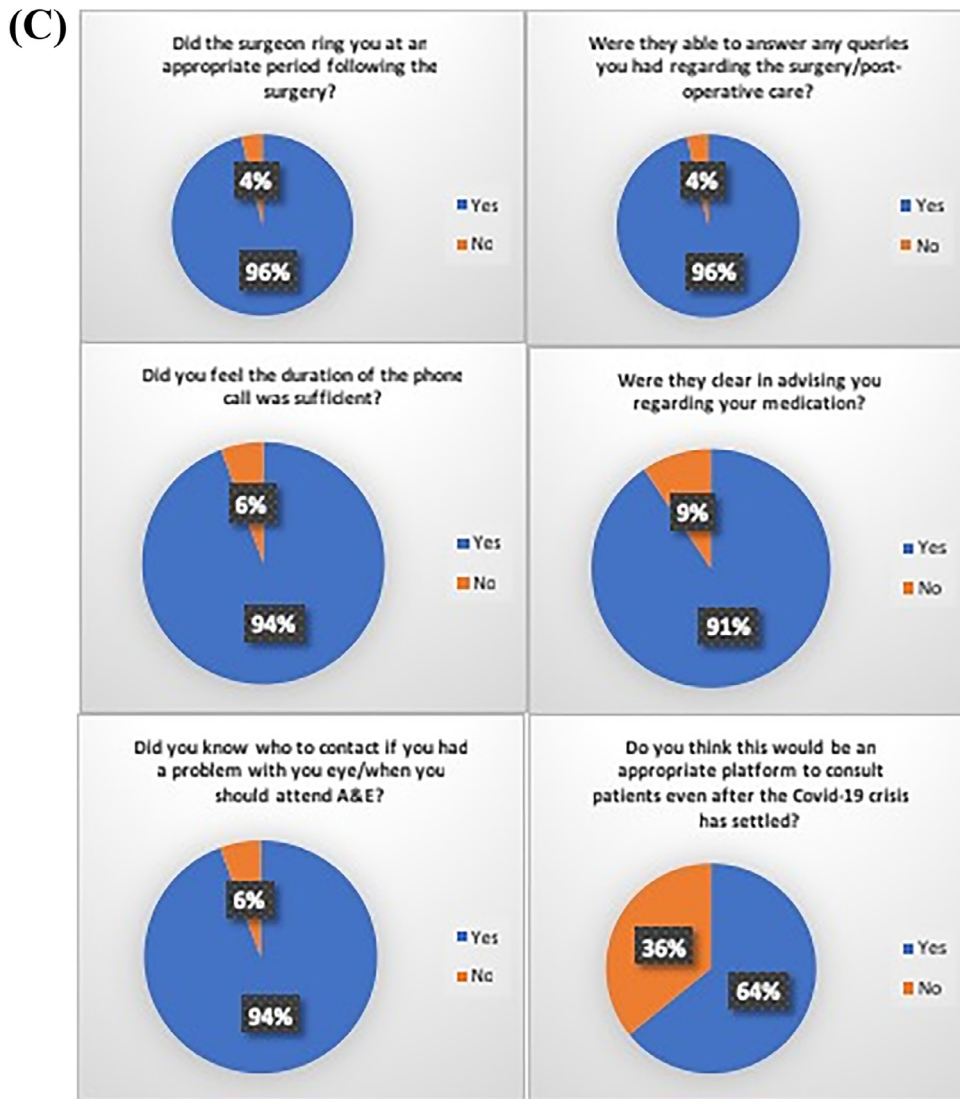


Fig. 1—Continued

their emergency vitrectomy for retinal detachment repair. We asked detailed questions on pain, redness, visual improvement, approximate size of gas bubble, new shadows, and worsening vision and confirmed their drop regime. Those patients who were thought to have any symptoms of raised intraocular pressure (IOP) or redetachment were asked to attend the vitreoretinal emergency (VRE) department for a face-to-face assessment. Patients with a long-acting gas bubble were booked in for a further phone call at 6 weeks after the date of the surgery. Asymptomatic patients were discharged with retinal detachment warning. The survey had a total of 10 questions, including a free text box for patient comments that were not addressed within the closed survey questionnaire. The survey was conducted by an independent member of the administration staff at the hospital to obtain an unbiased response.

The results of the survey are summarized in [Figures 1](#) 1C. Overall, of the 53 patients, 26 were male (49%) and 27 were female (51%). The patients scored the overall

satisfaction with the phone consultation at a mean of 4.3 out of 5. The satisfaction score for the clarity of the phone call was 4.9 out of 5. 51 patients (96%) felt that the clinician was able to answer any management questions over the telephone. Forty-eight patients (91%) felt that they received the appropriate advice regarding the postoperative drop regime, whereas 9% felt that this subject was not broached at the time of the phone consultation. Overall, 34 patients (64%) felt that a telephone consultation post-operatively was a sustainable replacement to face-to-face review, whereas 19 patients (36%) felt that this was not an appropriate platform to replace face-to-face consultations, after the COVID-19 pandemic. After the telephone consultation, 3 patients (6%) patients were asked to return to VRE for a further assessment to rule out a redetachment, of whom 2 patients (4%) had a redetachment and underwent a further emergency procedure. One patient (1%) presented to eye casualty department with a new shadow before the telephone consultation and was

found to have a redetachment. In addition, 2 patients (4%) were seen in casualty with pain in their eye before their consultation and were found to have a raised IOP and were treated accordingly. After the phone consultation, a further 3 patients presented to the VRE unit with a redetachment over the next 6 months since their surgery. There were no reports of other postsurgical complications such as endophthalmitis, vitreous haemorrhage, optic capture, or optic neuropathy.

Patient satisfaction surveys are an essential source of information for identifying gaps in clinical care and planning quality improvement within health care organizations.³ Our patient survey revealed that two-thirds of patients were willing to consider replacing face-to-face consultations with a telephone consultation, even after the pandemic. However, owing to the risk of missing patients with asymptomatic raised IOP, perhaps, a single visit at 2 weeks followed by a telephone consultation for those with a long-acting gas may be a suitable compromise. We did not report any other surgical complications after the initial telephone consultation, and although the patients were not reviewed face to face, given that our unit is one of the main eye units providing 24-hour emergency eye care within the greater London area, we would expect patients who developed any visual complications after their procedure to attend our hospital and be reviewed within the vitreoretinal unit. Notwithstanding the COVID-19 pandemic, the growing capacity issues within ophthalmic practice means that telemedicine platforms will become a key tool in delivering this care to a wider population in the future.⁴

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Paracentral acute middle maculopathy following high-intensity interval training



High-intensity interval training (HIIT) is a cardiovascular exercise strategy that combines short bursts of intense anaerobic exercise with quick recovery periods. There are significant cardiovascular, metabolic, and mental health benefits associated with HIIT.¹ Furthermore, this exercise regimen is correlated with better macular and optic nerve head capillary perfusion, microvascular remodelling, and decreased size of the foveal avascular zone in the long-term.^{1,2}

Paracentral acute middle maculopathy (PAMM) is an optical coherence tomography (OCT) finding that may be found on its own as part of an ischemic infarct of the middle retinal layers, specifically, the inner nuclear layer (INL), which results in global flow impairment to the retinal capillary system, specifically at the level of intermediate and deep capillary plexuses (DCPs). PAMM most commonly occurs as a result of flow impairment in central retinal venous occlusion, central retinal artery occlusion, or branch retinal artery occlusion. Less commonly, it may occur secondary to an extrinsic

etiology such as medications, migraines, or a viral prodrome.³ Given the vastly improved multimodal imaging capacities in recent years, this entity is more frequently diagnosed in patients presenting with a paracentral scotoma.

Patients with isolated PAMM often describe central or cecentral scotomas(s) that may disappear within days to weeks. On fundus examination, there may be associated greyish lesions that are smoother and deeper than cotton wool spots (CWSs) and that correspond to an infarct in the middle and/or inner retinal layers within the macula. OCT imaging reveals pathognomic placoid hyper-reflective bands at the level of the inner retinal layer (INL) and the inner plexiform layer.^{3,4} Near-infrared (NIR) imaging often shows characteristic hyporeflective areas in the perifoveal region. OCT angiography (OCTA) may demonstrate attenuation and a lower capillary density at the level of the intermediate capillary plexus and DCP.^{3–5} Furthermore, en-face OCT segmented at the level of the DCP is often useful in correlating the level of ischemia and characterizing the pattern of PAMM (i.e., perivenular, globular, or diffuse), which often correlate with the degree of ischemia.⁴

We describe, what is to our knowledge, the first report of a case of PAMM associated with HIIT exercise.