



THE ROLE OF MOBILE PHONE FUNDOSCOPY IN THE COVID-19 ERA AS AN ALTERNATIVE TO TRADITIONAL OPHTHALMOSCOPY

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ABSTRACT: *The emergence of COVID-19 pandemic has shown that traditional fundoscopy is now a hazardous procedure due to the proximity at which the procedure is done. This letter describes mobile phone fundoscopy as an alternative safer method of retinal examination with the added advantages of patient education and facilities for teaching and telemedicine.*

KEYWORDS: Mobile Phone Fundoscopy, COVID-19, Patient Education, Telemedicine.

COVID -19 and Ophthalmology

The COVID-19 pandemic has affected how medicine is practiced worldwide. Recent reports showed the increasing prevalence of death among health workers (1,2). One of the most affected specialties is Ophthalmology. This is due to the proximity at which consultations are made. High volume clinics, equipment transmission, contact with mucous membranes of conjunctiva and the enclosed space of the clinics make ophthalmology a high-risk specialty (3). The COVID-19 virus has been identified in tears and conjunctiva. (4,5). Slit lamp examination and fundoscopy are the 2 most frequent examinations to be carried out on patients visiting the ophthalmologist. The working distance for these tests is short, hence the risk of disease transmission by droplets from the nose and mouth. The first set of physicians to be affected in Asia were ophthalmologists. (6,7). Therefore, developing alternative examination methods will reduce the risks associated with COVID-19 infection among ophthalmologists.

Mobile Phone Fundoscopy versus the Traditional Ophthalmoscopy

Mobile phone fundoscopy utilizes the 20-diopter lens at arm's length thereby minimizing disease transmission unlike the traditional ophthalmoscopy where the working distance is about 5cm. Direct transmission of droplets from either party is possible. Other advantages of the mobile phone fundoscopy over traditional ophthalmoscopy include the wider field of view of the retina; ability to make video recording of the examination and play back for patient's education; extraction of still images for storage, telemedicine and teaching of trainees and students. The procedure is described in our earlier publications (8, 9)



Figure 1: Mobile phone funduscopy is done at arm's length to reduce risk

Mobile Phone Fundoscopy in Medical Student Teaching

The changing times warrant new ways of teaching. The COVID-19 pandemic suggests we modify teaching thereby minimizing the risk of exposure of the students. Mobile phone funduscopy may take the place of traditional ophthalmoscope in the current dispensation. Most students have access to mobile phones, the 20 diopter lens is also available and cheaper than the traditional ophthalmoscope.

The advantages of mobile phone funduscopy far outweigh that of traditional ophthalmoscopy. Student can record and play back their examination to enhance teaching. They can send the pictures on their teaching platforms and use as tutorials.

Mobile phone funduscopy is proposed to replace the traditional ophthalmoscopy especially in this COVID-19 times and will enhance teaching of resident doctors and medical students. Patient education and telemedicine will also benefit from this method.

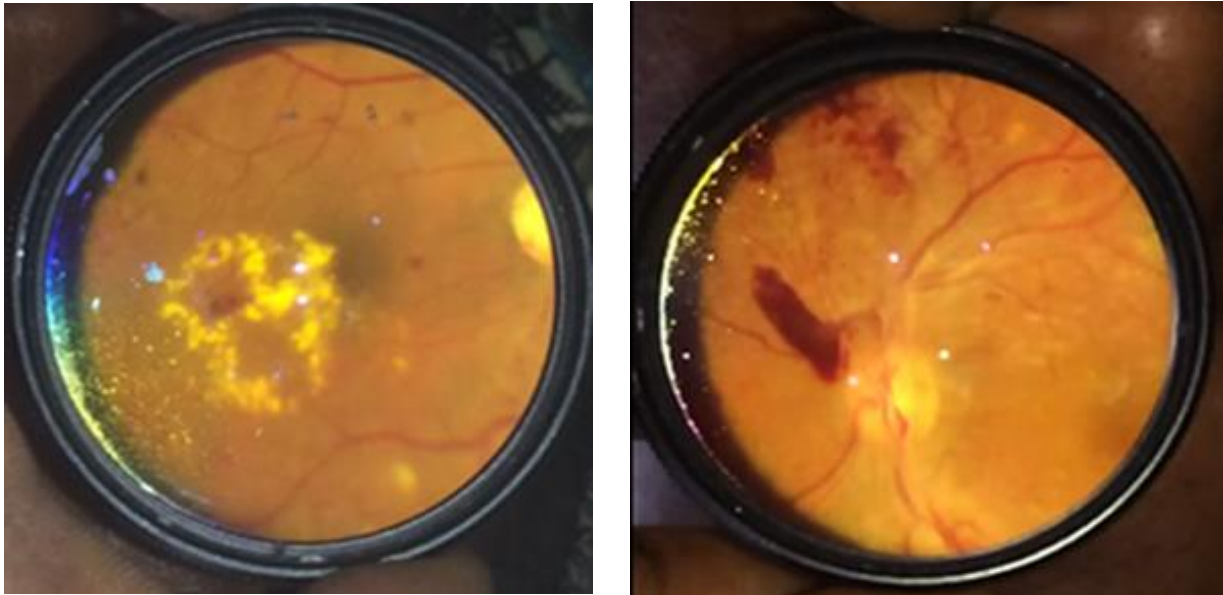


Figure 2: Retina Images taken with Mobile Phone Funduscopy: Diabetic maculopathy; proliferative diabetic retinopathy.

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