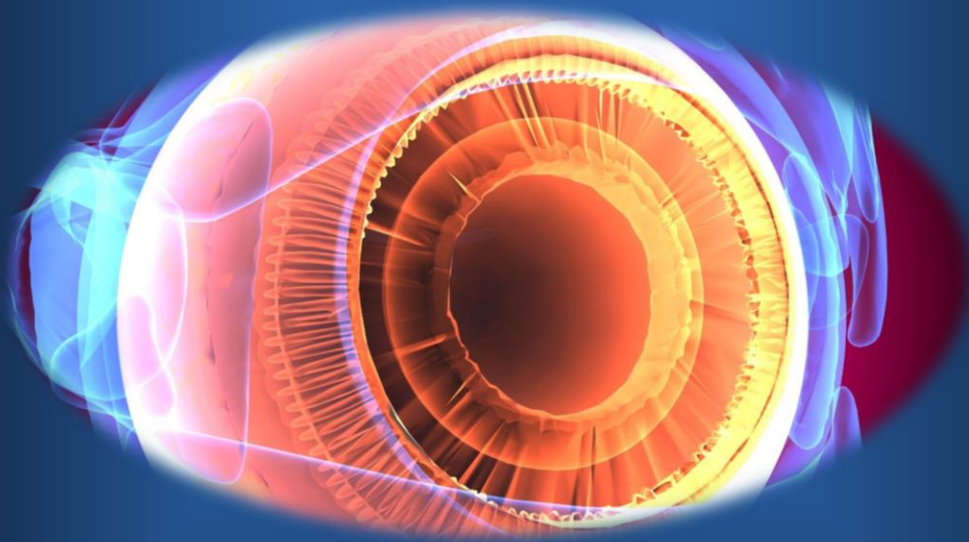


ophthal Focus

Vol 1 | Issue 13 | 2020



Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you 'Ophthal Focus' which contains latest and interesting news in the field of Ophthalmology.

This issue contains

- Binocular Interference vs Diplopia in Patients With Epiretinal Membrane
- Patients wearing face masks during intravitreal injections may be at a higher risk of endophthalmitis
- Conjunctival Squamous-Cell Carcinoma

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback

Best Regards,

Medical Team, Micro Labs Limited

Binocular Interference vs Diplopia in Patients With Epiretinal Membrane

Symptoms of epiretinal membrane (ERM) include reduced visual acuity, metamorphopsia, aniseikonia, and/or central-peripheral rivalry (CPR)-type diplopia (also known as dragged-fovea diplopia³). Over the years, it is noted that some patients with ERM describe another apparently distinct symptom; needing to close 1 eye to improve their overall visual experience but in the absence of diplopia or strabismus. Hatt et al. term this phenomenon as binocular

Binocular interference is associated with reduced quality of life in function-related domains.

interference, where a patient has reduced binocular visual quality vs monocular visual quality, manifesting as the need to close 1 eye in the absence of diplopia or strabismus. The aim of this study was to report the frequency of binocular interference associated with monocular eye closure in patients with ERM and also to evaluate its association with clinical parameters and quality of life domain scores.

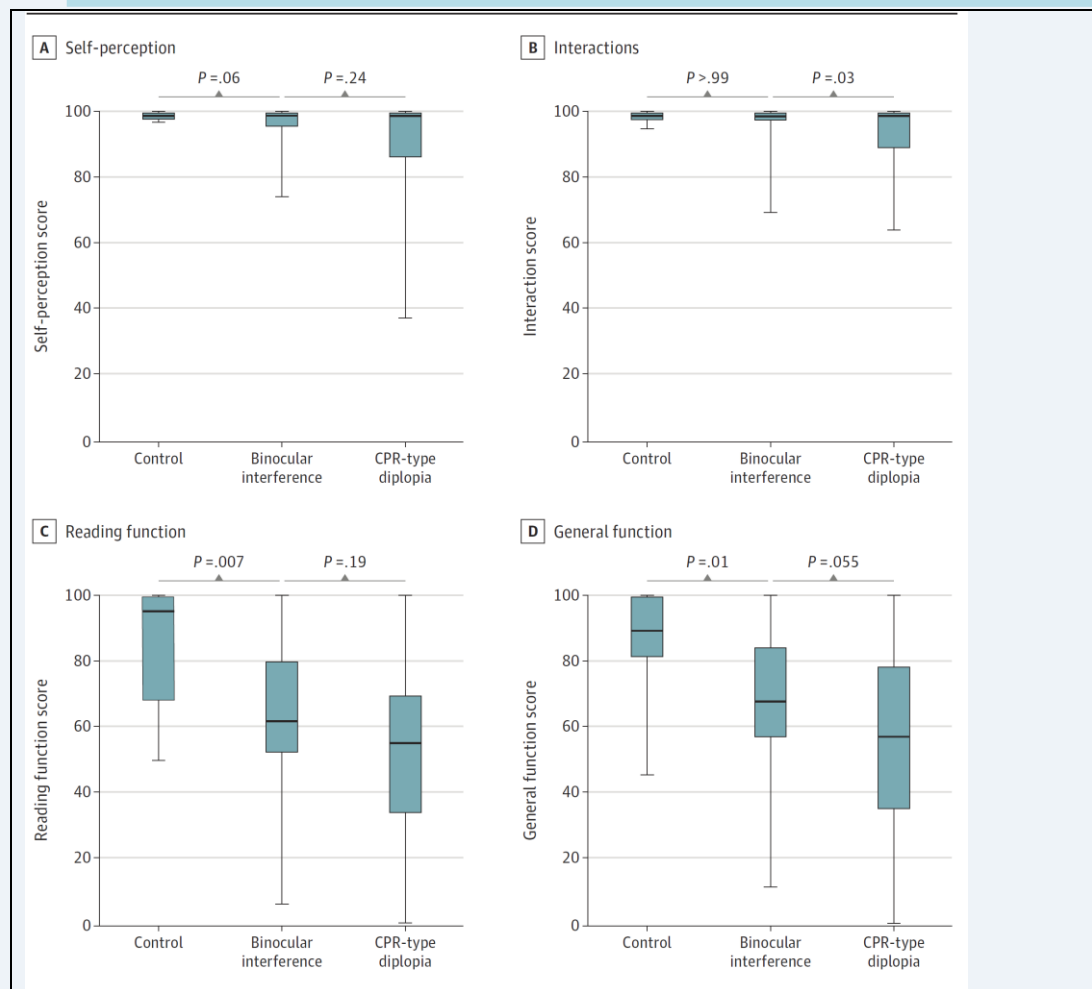
Patients with epiretinal membrane (ERM) sometimes close 1 eye for improved vision, but associations have not been rigorously studied. To evaluate associations with monocular eye closure in patients with ERM, and to report binocular interference (closing 1 eye to improve visual quality).

Retrospective medical record review of an adult strabismus clinic at a tertiary referral center. Patients with ERM referred from retina clinicians between June 2010 and October 2019 who completed the Adult Strabismus (AS)-20 questionnaire, including the question: "I cover or close one eye to see things better." Two groups were identified: (1) patients reporting eye

closure sometimes or more, and (2) patients reporting no eye closure (as control patients).

Frequencies of (1) central-peripheral rivalry (CPR)-type diplopia (dragged fovea diplopia); (2) binocular interference (monocular eye closure but no diplopia or strabismus); and (3) other, associated with monocular eye closure. Visual acuity, metamorphopsia, aniseikonia, and AS-20 quality of life domain scores (self-perception, interactions, reading function, and general function) compared between binocular interference, CPR-type diplopia, and control patients.

A total of 124 patients with ERM (58 of 124 were women [47%]; mean [SD] age, 70 [9] years) reported monocular eye closure. Associations were binocular interference in 36 (29%; 95% CI, 21%-38%), CPR-type diplopia in 34 (27%; 95% CI, 20%-36%), and other (primarily strabismus) in 54 (44%). Compared with control patients with ERM (n=11), patients with ERM and binocular interference had worse quality of life on AS-20 reading function (95 vs 62; mean difference, 22 points; 95% CI, 7-27 points; P=.007) and general function (89 vs 68; mean difference, 23 points; 95% CI, 13-34 points; P=.01) domains. Compared with CPR-type diplopia, patients with binocular interference had poorer worst-eye visual acuity (median 0.50 vs 0.30 logMAR [20/63 vs 20/40]; mean difference, 0.13 logMAR; 95% CI, 0.00-0.25 logMAR [20/20 to 20/35]; P=.03), and a larger interocular difference (0.46 vs 0.19 logMAR [20/58 vs 20/30]; mean difference, 0.15 logMAR; 95% CI, 0.03-0.28 logMAR [20/21 to 20/38]; P=.004). Study findings suggest that binocular interference, manifesting as monocular eye closure (without diplopia or strabismus), is a distinct entity affecting quality of life in patients with epiretinal membrane.



Adult Strabismus (AS)-20 Health-Related Quality of Life Questionnaire Scores

Adult Strabismus (AS)-20 health-related quality of life questionnaire scores showing self-perception (A), interactions (B), reading function (C), and general function (D), domains in patients with epiretinal membrane closing 1 eye due to binocular interference or due to central-peripheral rivalry (CPR)-type diplopia and in control patients with epiretinal membrane who never close 1 eye.

Some patients with ERM (without strabismus) experience reduced visual quality during binocular viewing, associated with closing 1 eye, a phenomenon we term binocular interference. Binocular interference is associated with reduced quality of life in function-related domains. Further work is needed to evaluate whether binocular interference may be present in patients with other eye diseases and to identify whether there is a role for nonsurgical or surgical treatments to improve or relieve symptoms.

Source: Hatt SR et al. JAMA Ophthalmol. Published online September 10, 2020. doi:10.1001/jamaophthalmol.2020.3328.

Patients wearing face masks during intravitreal injections may be at a higher risk of endophthalmitis

Intravitreal injection is the most common procedure in ophthalmology. Infectious endophthalmitis is the most feared complication of intravitreal injections, associated with poor visual prognosis even with the best treatments currently available.

The source of infection in many endophthalmitis cases may be salivary flora contaminating the operative field through droplet spread or aerosolization. The use of surgical face masks or no-talking policy during the injection is widely accepted

Patients wearing face masks during intravitreal injections may be at a higher risk of endophthalmitis. Until further data are available, it is recommended verifying proper face mask fitting and either taping the upper edges of the face masks with a medical adhesive tape or using an adhesive surgical drape around the injected eye.

and appears in the 2018 European Society of Retina Specialists expert consensus recommendations. However, it is not clear if the bacteria emanate from the physician, patient, or both. Current recommendations suggest that health care givers should wear surgical face masks during the procedure but increasingly there are demands for the patients to wear surgical face masks as well. This is especially relevant in the era of the COVID-19 (SARS-CoV-2) epidemic, where the patients and health care providers are required to wear masks throughout the procedure. The study aim is to investigate the safety of wearing face masks by patients during intravitreal injections.

A prospective, qualitative, interventional study performed in a tertiary university hospital. Healthy volunteers were asked to wear three different

professional surgical face masks while air leaks around the eyes were monitored. Three types of masks were investigated as follows: 1) surgical face mask with four tying strips, 2) surgical face mask with elastic ear loops and 3) 2200 N95 tuberculosis particulate face mask. For each session the periocular area was inspected for air leak during normal respiration, speech, and deep respiration. Detection of air leak was performed using the following two professional thermal cameras: FLIR A310—thermal camera and EyeCGas 2.0—super sensitive infrared camera used for detection of minute fugitive emissions of industrial gases.

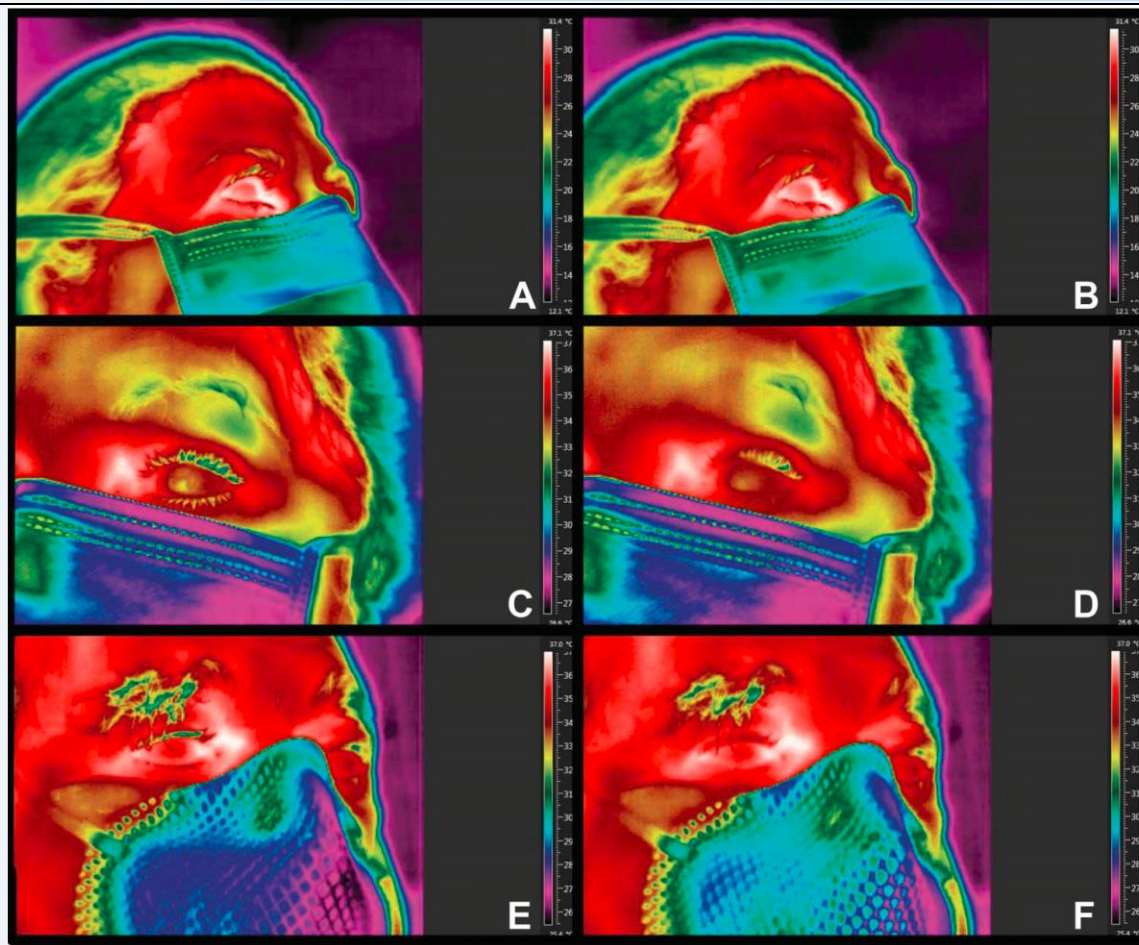
Ten healthy volunteers were enrolled in this study. The experiment was repeated 45 times for each camera; 3 times for each of 3 mask types, on 5 volunteers, for a total of 90 trials. Air jets were detected originating from the superior edges of the masks radiating toward the eyes in 81% (73/90) of cases in total; 71% (32/45) with the FLIR camera and 91% (41/45) with the OPGAL camera. Air leaks were detected with all investigated mask types.

Patients wearing face masks during intravitreal injections may be at a higher risk of endophthalmitis. Until further data are available, it is recommended verifying proper face mask fitting and either taping the upper edges of the face masks with a medical adhesive tape or using an adhesive surgical drape around the injected eye.

Trial #	Face Mask A			Face Mask B			Face Mask C		
	Normal Breathing	Speech	Deep Breathing	Normal Breathing	Speech	Deep Breathing	Normal Breathing	Speech	Deep Breathing
1	+	—	+	+	+	+	+	—	—
2	+	+	+	+	—	+	+	+	+
3	—	+	+	+	—	+	+	—	+
4	+	—	+	+	+	+	—	—	—
5	+	—	+	+	+	+	+	—	+

Face mask A, surgical face mask with four strips; Face mask B, surgical face mask with elastic ear loops; Face mask C, N95 tuberculosis particulate face mask.

Air Leak Contamination of the Periocular Area With Various Surgical Face Masks Detected by the FLIR A310 Thermal Camera



Temperature changes of the periocular area with breathing.

Representative thermal photos acquired with the FLIR camera of three volunteers during inhalation (A, C, and E) and exhalation (B, D, and F). The eyelashes and eyebrows serve as natural heat indicators, and their color coding changes with respiration.

During exhalation, air jets at body temperature warms the eyelashes and eyebrows closer to body temperature, indicating air leak radiating toward the eyes.

The best techniques to prevent contamination of the sterile field with exhaled air and their safety and usefulness require further investigation. Further research is also required to identify the exact source of the bacteria in post injection endophthalmitis and to further reduce its risk.

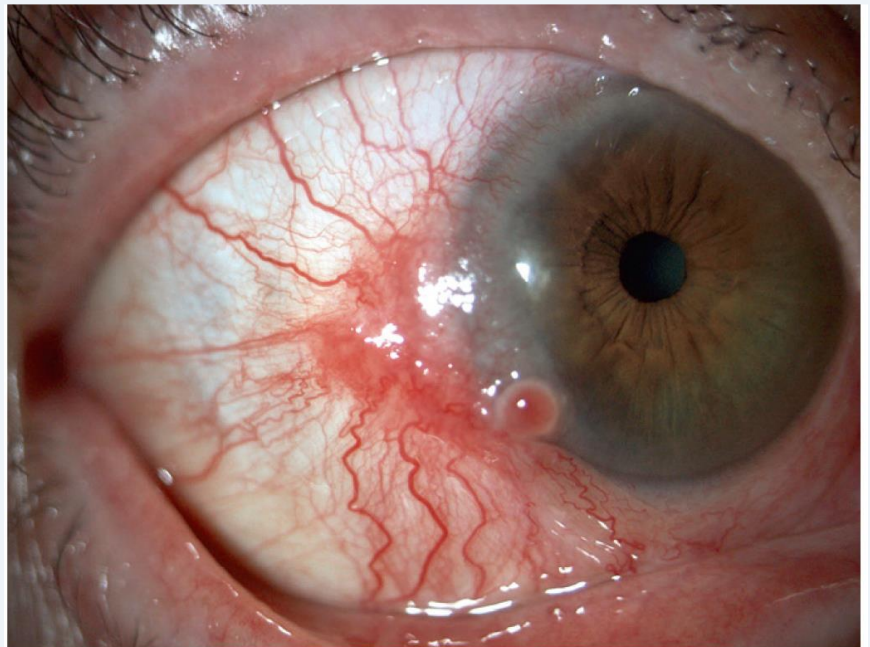
Source: Hadayer A et al. Retina 2020 September;40(9):1651-1656. doi: 10.1097/IAE.0000000000002919.

Conjunctival Squamous-Cell Carcinoma

An 89-year-old woman presented to the ophthalmology clinic with a 4-month history of redness and a sensation of a foreign body in her right eye. Examination of the fundus and evaluation of the pupillary response and intraocular pressure showed no abnormalities. Slit-lamp examination revealed a red, raised lesion on the conjunctiva that extended onto the

cornea, with accompanying telangiectasia and prominent blood vessels. There was no regional lymphadenopathy.

The appearance of the lesion was suggestive of neoplasia; therefore, the patient



underwent surgical resection of the lesion and reconstruction of the tissue defect with an amniotic-membrane graft. Histologic examination of the resected lesion revealed squamous-cell carcinoma in situ. The patient completed 4 weeks of adjuvant therapy with topical mitomycin C. At a follow-up visit 2 years after surgery, there was no local recurrence

Source: Vinci G et al. N Engl J Med 383;10. DOI:10.1056/NEJMicm2002512



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