

COVID-19 & THE EYE

VISUAL FIELD ARTIFACTS IN GLAUCOMA WITH SURGICAL FACE MASK USE DURING THE COVID-19 PANDEMIC

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Introduction: The Coronavirus Disease-2019 (COVID-19) pandemic has caused difficulties in the diagnosis and follow-up of glaucoma. In addition, fogging artifacts have been defined in the visual field tests (VFTs) due to the mandatory use of face masks.

Purpose: To demonstrate that VFT reliability indices improve when face masks are taped in order to prevent fogging artifacts.

Methods: Four patients with glaucoma suspect, ocular hypertension (OHT), or glaucoma underwent VFTs with the 24-2 SITA Fast test of the Humphrey Field Analyzer while wearing surgical face masks with their own near glasses.

Results: Abnormal VFT reliability indices and pattern deviation plot (PDP) comments are summarized below.

Case#1 (58-year-old female, bilateral glaucoma suspect): Fixation loss (FL) was high in both eyes. False positive error (FPE) was high in the left eye. The glaucoma hemifield test (GHT) was outside normal limits in the right eye. In PDPs, central artifact was observed in both eyes.

Case#2 (47-year-old female, bilateral primary angle closure [PAC]): FL was high in both eyes. FPE was high in the left eye. The GHT was outside normal limits in both eyes. In PDPs, upper peripheral artifact in the right eye and central artifact in the left eye was observed.

Case#3 (46-year-old male, bilateral OHT): FL was high in the right eye. The GHT was outside normal limits in both eyes. Although the VFT demonstrated good reliability indices in the left eye, the GHT test was outside normal limits. In PDPs, upper paracentral artifact was observed in both eyes.

The pre-COVID VFT reliability indices of these three cases were within normal ranges and there were no glaucomatous defects.

Case#4 (67-year-old female, right PAC, left PAC glaucoma): Although the VFT demonstrated good reliability indices, the GHT was outside normal limits in both eyes. In PDPs, there was central artifact, which was not present before, in the right eye, and progression suspect in the left eye. The patient's pre-COVID VFT reliability indices were within normal ranges. There was no glaucomatous defect in the right eye; however, the left eye had nasal step with central defect.

Due to patient complaints of fogging during the testing and low VFT reliability indices, the tests were repeated after securely taping the mask to the bridge of the nose. In all tests, the reliability indices improved, showing no significant differences with pre-COVID tests.

Conclusion: The main effects of poorly fitting face masks on VFT reliability indices were increased FLs and FPEs. Low VFT reliability indices are a warning to repeat the test. However, as in our series (three of eight eyes), although the VFT reliability indices are within normal ranges, fogging artifacts that may mimic a new glaucomatous defect or progression can be seen in the PDPs. The use of a surgical mask with an adhesive tape covering the superior border may reduce mask related artifacts.