Clinical Presentation of Rhegmatogenous Retinal Detachment During the COVID-19 Pandemic: A Historical Case Control Study

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Purpose:
To investigate the effect of the COVID-19 pandemic on the clinical presentation of acute, primary rhegmatogenous retinal detachment (RRD).

Methods:
This is a single-center, consecutive case series with historical controls.

Patients presenting with primary RRD in a 50-day period during the USA COVID-19 pandemic (March 9th - April 27th, 2020) were compared to patients presenting in the corresponding 50-day period the previous year (March 4th - April 22nd, 2019). A secondary control cohort of patients presenting in 2018 (March 5th – April 23rd) was used to validate the 2019 control group. The groups were compared with respect to demographic factors and presenting characteristics.

Multivariate logistic regression was used to identify factors predictive of presenting macular attachment status. The primary outcome was the proportion of patients with macula-on RRD at presentation. Secondary outcomes included visual acuity (VA), duration of symptoms prior to presentation, proportion presenting within one day of symptom onset, and presence of primary proliferative vitreoretinopathy (PVR).

Results:
82 patients were included in the 2020 cohort compared to 111 patients in the 2019 primary control cohort, and 103 in the 2018 secondary control cohort. Demographic factors and presenting characteristics were similar between the 2018 and 2019 control groups. Despite similar demographic factors, significantly fewer patients presented with macula-on RRD in the 2020 cohort (17 patients, 20.7%) than in 2019 (48 patients, 42.4%, p = 0.001). Patients in the 2020 cohort had worse mean LogMAR VA at presentation (1.41 ± 1.18 in 2020 versus 1.03 ± 1.13 in 2019, p = 0.03), fewer patients presenting within one day of symptoms (16/80 patients [19.5%] in 2020 versus 41/106 patients [36.9%] in 2019, p = 0.005), and a greater proportion with primary PVR (11/82 patients [13.4%] in 2020 versus 5/111 patients [4.5%] in 2019, p = 0.03). In multivariate analysis, younger age (p = 0.04) and established patient status (p = 0.02) were independent predictors of macula-on status in the 2020 cohort.

Conclusions:
Patients with primary RRD during the 2020 COVID-19 pandemic were less likely to be macula-on, and more likely to have delayed presentation, worse vision, and PVR. The subgroups of established patients and young patients were spared these characteristics of delayed presentation.