



Comparison of Panoramic Imaging (Optos P200C) with Traditional Dilated Retinal Evaluation



Authors: S. Nath, Jr.¹, J. Sherman^{1,2}, S.M. Hossain¹, Y. Bababekova^{1,2}

¹Eye Institute and Laser Center, New York; ²State College of Optometry, State University of New York, New York, NY

SUNY College of Optometry

33 West 42nd Street, New York, New York 10036

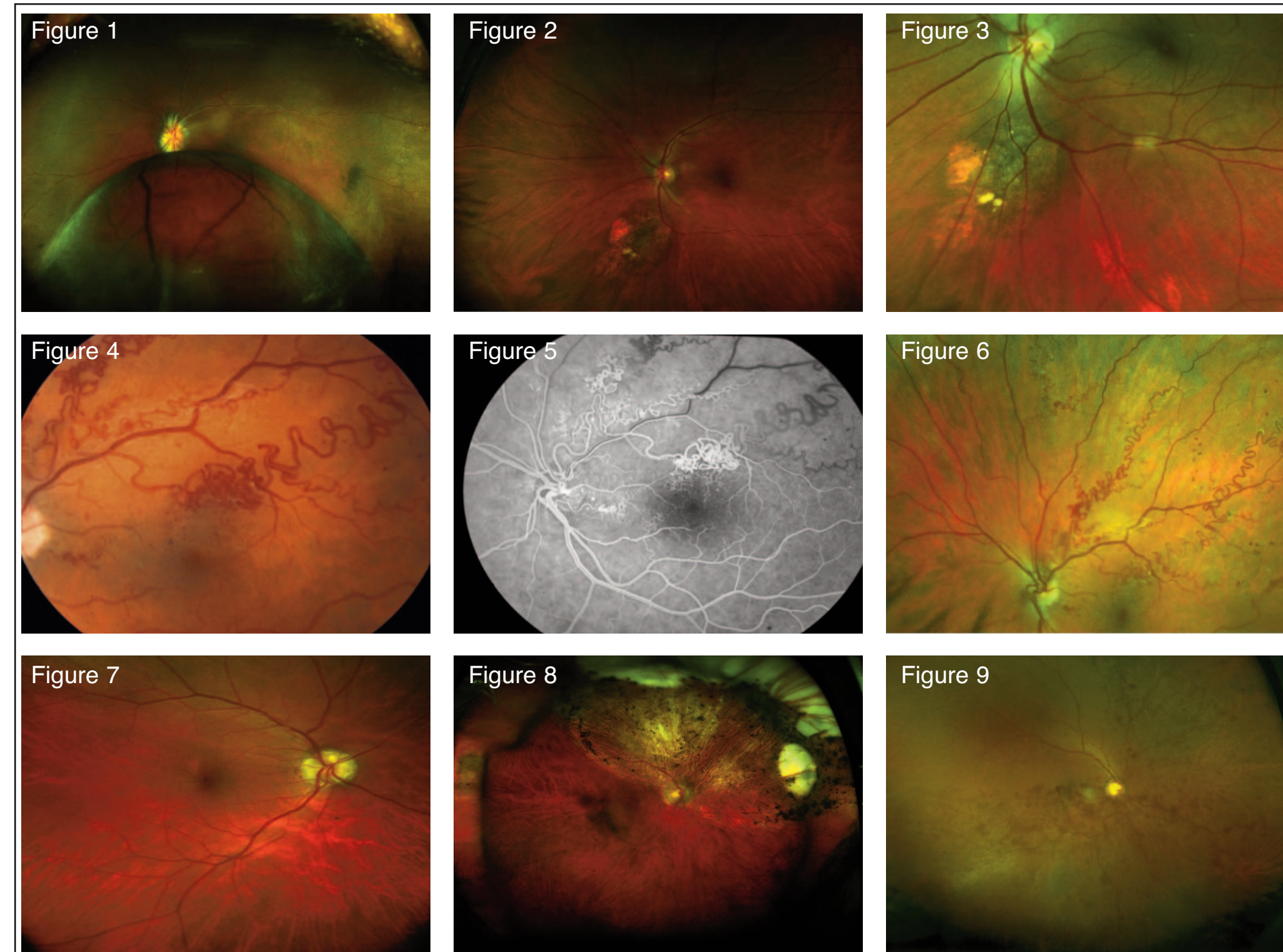
Purpose: To compare the new Optos P200C to traditional dilated retinal evaluation utilizing standard head mounted binocular indirect ophthalmoscope (BIO).

Methods: One hundred charts were randomly selected during a 4 week period from the New York Eye Institute and Laser Center, a private ophthalmology practice in Manhattan. Inclusion criteria were based upon both a P200C exam and a dilated BIO exam performed the same day by different examiners. The study was retrospective and the clinicians who performed the BIO exam did not know that their BIO drawings were later going to be compared to P200C images. The P200C images were reviewed retrospectively by two clinicians each with 4 years experience with the technology. Both individually compared the P200C imaged area to the BIO drawings and assessed both concordance and discordance of findings. The independent, written interpretations of the P200C images of these two clinicians was also assessed for agreement.

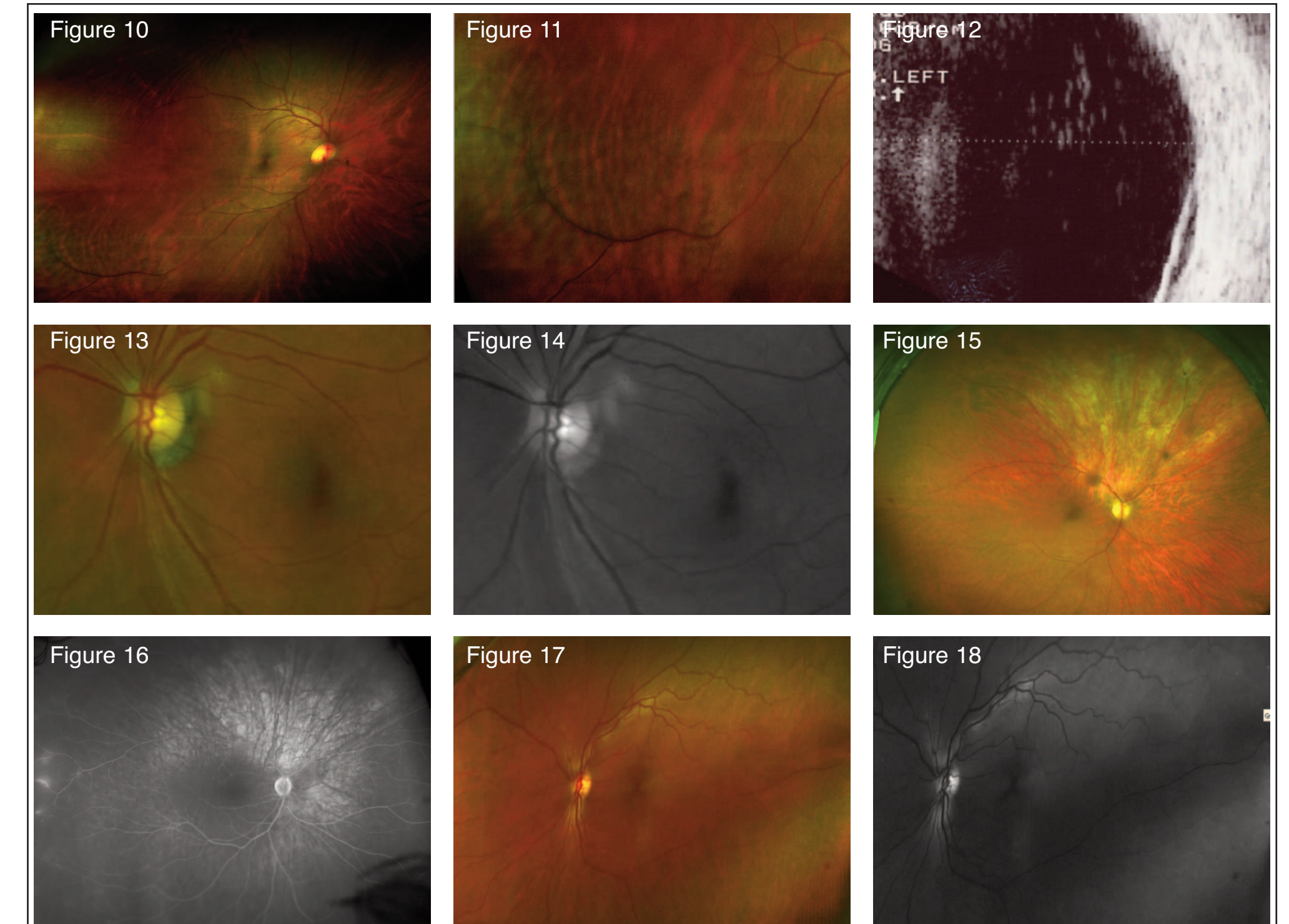
Results: The BIO retinal drawings revealed 79 patients out of 100 (79%) with fundus disorders. Both reviewers found 77 of these 79 lesions with the P200C. Both missed lesions were small round, atrophic holes in areas of lattice within 1-2 mm of the ora. The two reviewers found 88 and 90 patients with fundus lesions respectively with the P200C. The lesions detected on the P200C images that were missed by the ophthalmologists who performed the BIO exam were small round peripheral hemorrhages in 2 cases, nerve fiber layer defects in 2 cases, small (0.2-0.5 DD) pigmented lesions in 3 cases, epi-macular membrane in 1 case, epiretinal membrane outside the macula in 1 case. One reviewer noted 2 cases of asymmetric cupping whereas the other reviewer did not make this observation.

Conclusions: Based upon the results above, there was general agreement between retinal drawings from DFE and interpretation of P200C images by experienced examiners. There was excellent agreement between the 2 clinicians in the interpretation of the P200C images. The use of both DFE and P200C detected more lesions than either alone. In this preliminary study, only 2 peripheral lesions within 1-2 mm of the ora were missed with P200C.

Category 1: Retinal Disorders Detected by Optos and BIO



Category 2: Retinal Disorders Detected by Optos and Missed With BIO



Category 3: Obvious Retinal Disorders Detected by Both Optos and BIO but Subtle Disorders Missed by BIO



Figure 1: Giant Schisis
Figures 2-3: Suspicious Nevus
Figures 4-6: Arteriovenous Malformation
Figure 7: Disc Drusen
Figure 8: Scheral Buckle
Figure 9: Three Quadrant Retinal Vein Occlusion

Figure 10-12: Shallow Retinoschisis
Figure 13-14: Retinal Nerve Fiber Layer Abnormalities
Figure 15-16: Periphlebitis in Multiple Sclerosis
Figure 17-18: Hemorrhages

Figure 19: Small Peripheral Hemorrhages
Figure 20: Lattice Degeneration in Inferior Fundus of Marfan's Syndrome
Figure 21-22: Vascular Sheathing with Capillary Nonperfusion
Figure 23: Mid Peripheral CHRPE