

Letter to the Editor

Non-inferiority of fundus photos using wide-field imaging to charting drawings in rhegmatogenous retinal detachment

Dear Editor,

Widefield imaging has a role in the screening of rhegmatogenous retinal detachments and in refining their documentation. Although cautious clinical examination of the peripheral retina with scleral indentation is of paramount substance in clinical decision making, there is a need for auxiliary testing and a schematic and authentic documentation of findings.^[1]

A total of 27 eyes of 27 patients were screened over 6 months, who were referred to our tertiary care center for the management from various eye care units, with documented evidence to be diagnosed to have a retinal detachment. Patients were subjected to a dilated fundus photographic examination done by the retina fellows NG and AS as a part of our screening process before bringing the patients to the clinician for a thorough ophthalmoscopic examination. The Scanning Laser Ophthalmoscopy (SLO)-based Mirante^[2] was used as a screening tool, which has an advanced widefield (163° measured from the center of the eye) lens attachment available with the device.

After documenting the widefield image, detailed findings were noted by the fellows AS and NG without actually clinically examining patients on an indirect ophthalmoscopy examination. The final clinical examination was carried out by the consultants MN and NM on indirect ophthalmoscopy who were not privy to the earlier photographic documentation. This clinical examination was further documented by standardized charting. The findings made on the chart were independent of the findings documented by examining the widefield photograph. Hence, the clinical examination and its documentation were blinded to the earlier widefield imaging documentation. After the charts were completed, unblinding was done and the findings were compared with the findings on the image, which are listed in the Table 1.

All findings totally matched between both modalities (charting drawings and widefield imaging) [Fig. 1]. The average time taken for charting and SLO-based widefield imaging was 20 and 5 min, respectively.

Earlier, the fundus findings were documented as fundus drawings where findings in each clock hour were drawn after indenting the sclera with a scleral indenter. This was a highly cumbersome process and required approximately 30 min to 3 h to finish, which required a lot of cooperation as well as patience from both sides. Secondly, this was a subjective process, wherein there was always a possibility of variations

Table 1: Findings of widefield images

Parameters	Extent of detachment	Location of break	Number of breaks	Type of break
CASES				
CASE 1	6-11 O'clock	T, IT, ST	10	Hole
CASE 2	10-2 O'clock	S	3	Dialysis
CASE 3	Total	ST	1	Dialysis
CASE 4	11-3 O'clock	T	3	Hole
CASE 5	1-6 O'clock	IT	3	Operculated (1) Hole (2)
CASE 6	3-8 O'clock	I	3	Hole
CASE 7	7-10 O'clock	T	4	Hole
CASE 8	10-1 O'clock	ST	1	Operculated HST
CASE 9	3-5 O'clock	IT	3	Hole
CASE 10	Total	T	1	Giant retinal tear
CASE 11	–	I	1	Hole
CASE 12	11-5 O'clock	T, M	Multiple	Hole
CASE 13	Total	S, T	2	Operculated HST
CASE 14	1-4 O'clock	T	2	Hole
CASE 15	–	–	0	–
CASE 16	8-12 O'Clock	T	6	Operculated HST
CASE 17	9-1 O' Clock	ST	1	Operculated HST
CASE 18	12-6 O' Clock	T	3	Giant retinal tear (1) HST (2)
CASE 19	4-8 O' Clock	IT	Multiple	Atrophic hole
CASE 20	8-10 O' Clock	T	4	Atrophic hole
CASE 21	4-9 O' Clock	IT	4	Atrophic hole
CASE 22	12-4 O' Clock	ST, I	2	Operculated HST
CASE 23	4-9 O' Clock	I, T	3	Atrophic hole
CASE 24	3-8 O' Clock	I, IT	3	Atrophic hole
CASE 25	3-10 O' Clock	IT	Multiple	Atrophic hole
CASE 26	7-10 O' Clock	T	1	Atrophic hole
CASE 27	8-11 O' Clock	T	2	Operculated HST (1) Atrophic hole (1)

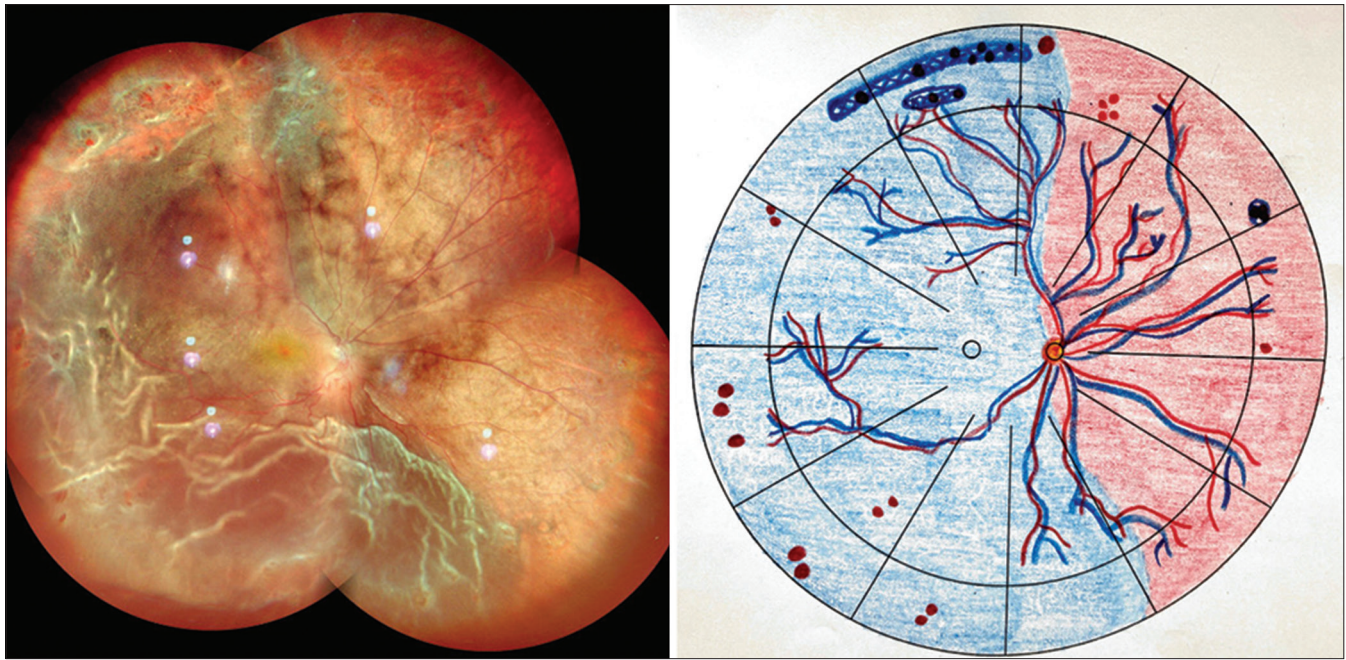


Figure 1: Widefield color image Montage showing the extent of rhegmatogenous retinal detachment with holes and lattice degenerations in the extreme periphery versus fundus drawing corresponding to the widefield color image of rhegmatogenous retinal detachment

in the representation drawn by two different individuals. Our results validate that our screening system provides an objective diagnosis of retinal detachment with high precision and coherence. This system can be used to screen retinal detachment as a part of ophthalmic health in hospitals with a large number of patients to aid ophthalmologists.

There is significant consistency in the findings derived from the two techniques, wherein the objective scanning laser ophthalmoscopy-based widefield imaging documentation was found to be non-inferior to the traditional subjective and time-consuming art of fundus charting. Hence, SLO-based widefield imaging documentation may replace charting.

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Conflicts of interest

There are no conflicts of interest.

**Manish Nagpal, Navneet Mehrotra, Akansha Sharma,
Nivesh Gupta**

Department of Ophthalmology, Retina Foundation, Near Shahibag Underbridge, Shahibag, Ahmedabad, Gujarat, India

Correspondence to: Dr. Manish Nagpal,
Retina Foundation, Near Shahibag Underbridge, Shahibag,
Ahmedabad – 4, Gujarat, India.
E-mail: drmanishnagpal@yahoo.com

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