



## Role of retinal image-based counseling in the treatment of peripheral retinal lesions

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Received: 16 July 2018 / Accepted: 17 July 2018 / Published online: 17 August 2018  
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The role of peripheral retinal imaging is evolving very fast, especially after advancement of wide-field imaging technology. In a routine clinic, the retina specialist examines the peripheral lesions with the indirect ophthalmoscope, and they verbally explain about the lesion and need of treatment. Most of these peripheral lesions do not cause the visual disturbance. However, they are considered as risk factor for retinal complications [1]. Counseling plays an important role to make asymptomatic patients understand whenever treatment is advised. Several authors have established the decisive role of images-assisted health communication in many areas of medicine [2–5]. However, the role of image-based counseling of patients for peripheral retinal lesions is not well studied. We investigated the role of image-based counseling compared to verbal counseling for the management of peripheral retinal lesions.

The study included all the patients who visited the department of vitreoretina at Lotus Eye Hospital and Institute as a routine screening before refractive surgery from January 2017 to January 2018. The methodology adhered to the tenets of the declaration of Helsinki. Institute's committee on human research has approved the protocol. Informed consent was taken. Retina specialist (A. S.) examined the patients with the indirect ophthalmoscope. Patients who were considered for barrage laser prophylactic treatment after indirect examination were

randomized with computer-generated random table for verbal (Group A 30 patients, 40 eyes) and image (Fig. 1) assisted counseling (Group B, 30 patients, 40 eyes). Imaging was done with MII Ret Cam (MII Ret Cam Inc, Coimbatore, TN, India). Baseline parameters were similar in both the groups (Table 1). Patient Satisfaction Questionnaire was analyzed and compared between both the groups. Responses to each item were given a 5-point scale ranging from strongly agree (5 points) to strongly disagree (0 points). (Table 2A)

The data collected from the patients were analyzed using SPSS version 16.0 for windows. Descriptive analysis was carried out to exhibit the frequency observations, mean and standard deviation. Independent *t*-test analysis was used to test the significant difference between two groups on selected variables.

The responses of the patient survey ( $n = 60$ ) showed that image-based explanation is superior to the verbal explanation at each level of understanding starting from patients understanding about the disease up to its treatment options and willingness to undergo the procedure. (Table 2B)

As clinicians discover new findings in the peripheral retina with wide-field retinal imaging, the role of right communication regarding the significance of these lesions will increase. The present study is an example of the regular clinic that shows how visual cues can help in patient satisfaction and help them to make treatment decisions. Retinal imaging is fast progressing towards wide-field imaging; we expect clinicians and researchers who are working in this area to monitor patient-centric data along with scientific data.

The study has limitations in terms of small sample size. However, the study does highlight the role of image-based counseling in peripheral retinal lesions. Further large studies in this area with modalities such as Optos (Optos plc, Dunfermline, UK) can help to understand the importance of wide-field imaging in patient education and counseling.

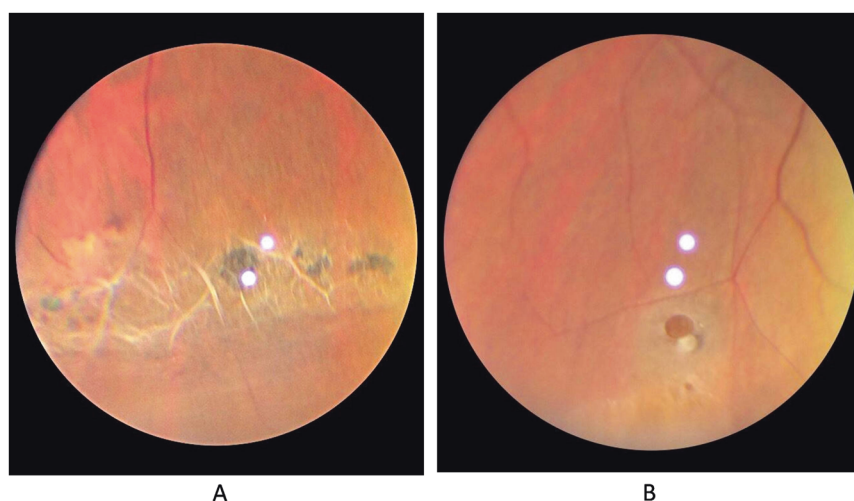
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**Fig. 1** Representative image of the hole and lattice degeneration used for patient counseling



**Table 1** Comparison of baseline parameters between 2 groups

Study variable	Group	N	Data	P Value
Age (Mean $\pm$ SD)	A	30	24.16 $\pm$ 4.94	0.39
	B	30	25.36 $\pm$ 5.88	
M/F (Ratio)	A	30	0.76	0.79
	B	30	0.87	
Lattice (%)	A	30	60	0.59
	B	30	66.6	
Retinal hole (%)	A	30	40	0.59
	B	30	33.3	

**Table 2A** Patient Satisfaction Questionnaire (PSQ) with 1–5-point scale

Questions	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
The doctor gave a thorough examination with a head-mount light (Indirect)	1	2	3	4	5
The doctor explained to me about the peripheral retinal problem well	1	2	3	4	5
I completely understood my retinal problem after doctors explanation	1	2	3	4	5
I understood that I need laser treatment for this condition	1	2	3	4	5
I would like to undergo the treatment advised by the doctor	1	2	3	4	5
I would like to take a second opinion before undergoing treatment	1	2	3	4	5

**Table 2B** Analysis of Mean Patient Satisfaction Questionnaire (PSQ) score between two groups

Questions	Verbal explanation mean score (n = 30)	Image-based explanation mean score (n = 30)	P
The doctor gave a thorough examination with a head-mount light (Indirect)	5	5	
The doctor explained to me about the peripheral retinal problem well	3.8 $\pm$ 0.5	4.7 $\pm$ 0.4	<0.0001 (CI -1.134 to -0.666)
I completely understood my retinal problem after doctors explanation	2.3 $\pm$ 0.5	4 $\pm$ 0.6	<0.0001 (CI -1.985 to -1.415)
I understood that I need laser treatment for this condition	2.3 $\pm$ 0.5	4 $\pm$ 0.6	<0.0001 (CI -1.985 to -1.415)
I would like to undergo the treatment advised by the doctor	3 $\pm$ 0.6	3.9 $\pm$ 0.8	<0.0001 (CI -1.265 to -0.535)
I would like to take a second opinion before undergoing treatment	3.2 $\pm$ 0.8	2.2 $\pm$ 1.1	<0.001 (CI = 0.503 to 1.497)

## Compliance with ethical standards

**Conflict of interest** A.S. is an Innovator of MII Ret Cam. None of the other authors have the conflict of interest with this submission

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