

Comment on: Variation in the vitreoretinal configuration of Stage 4 retinopathy of prematurity in photocoagulated and treatment-naïve eyes undergoing vitrectomy

Dear Sir,

We read with great interest the article, "Variation in the vitreoretinal configuration of Stage 4 retinopathy of prematurity (ROP) in photocoagulated and treatment-naïve eyes undergoing vitrectomy" by Gadkari and Deshpande.^[1] We congratulate the authors for their work. In a well-illustrated series, they demonstrate that laser-treated eyes with Stage 4 ROP presented with predominant central traction which could be managed by lens-sparing vitrectomy. On the contrary, treatment-naïve eyes had more of peripheral traction requiring lensectomy at times and more chances of iatrogenic breaks. We wish to add certain pertinent points to the discussion.

The authors postulate that the junction between the ischemic and nonischemic retina is shifted posteriorly in photocoagulated eyes, resulting in more of central or lenticular traction rather than peripheral traction. However, we must also consider the type and zone of ROP as an important determinant of traction. For instance, retinal detachments in eyes with zone 1 aggressive posterior ROP (APROP) often evolve from flat preretinal vitreous organization which begins nasally, close to the optic disc.^[2,3] In later stages, the traction spreads circumferentially along posterior arcade resulting in Stage 4b or 5 detachment.^[2,3] In such eyes, traction is more likely to be posterior/central as opposed to peripheral traction arising out of a ridge in classical staged

zone 2 ROP. If we closely observe representative Figs. 1-5 of the original article,^[1] traction is predominant nasally and close to the optic disc. These are most likely eyes with zone 1 APROP which progressed despite laser treatment. Preretinal hemorrhages before or after laser treatments are another factor which cause significant vitreous organization, fibrovascular proliferation, and detachments in eyes with both APROP as well as threshold ROP.^[3,4] In the present study,^[1] we observe hemorrhages underlying/close to the area of fibrovascular proliferation [Figs. 1, 4 and 5].

The authors discuss a scenario where the ischemic retina is central and more laser is not possible, as laser has already been done up to the posterior arcade. We must add that such a scenario with extensive capillary bed loss and ischemia in the vascularized posterior retina is described in zone 1 APROP.^[5] Such a disease with posterior ischemic retina is less amenable to laser treatment. Often, these eyes develop extensive posterior circumferential traction despite early and confluent laser treatment.^[2,3] Although the authors have not specifically alluded to these eyes as APROP, they rightly point out that additional anti-vascular endothelial growth factor treatment may have a role in such eyes.

The authors themselves conclude that treatment-naïve eyes were more likely a milder form of ROP which progressed due to a lack of treatment. These are likely to be eyes with pre-equatorial zone 2 classical staged ROP which progressed and developed peripheral traction in the absence of treatment. These eyes are less likely to develop central traction as posterior vasculature is more mature and well perfused. We believe that the authors should provide information about the baseline disease features (i.e. zone of ROP [zone 1 vs. zone 2], type of ROP [APROP vs. Staged ROP], and preretinal hemorrhages) for the laser treated group. This is important as retinal detachment evolves

differently in zone 1 APROP versus zone 2 classical staged ROP eyes. This will further explain some of the observed differences in morphology of Stage 4 ROP in laser-treated versus treatment-naïve eyes.

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Conflicts of interest

There are no conflicts of interest.

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