Temporal Macular Pulsation During Retinopathy of Prematurity Screening

To the Editors:

A 32-week infant with a birth weight of 1,200 g presented at 36 weeks’ post-conceptional age for retinopathy of prematurity (ROP) screening. Screening with indirect ophthalmoscopy revealed zone II stage 1 ROP with pre-plus disease in both eyes. In addition, pulsations were noted in both eyes in the temporal macular area.

Fundus photography was performed with the RetCam 3 imaging system (Clarity Medical Systems, Inc., Pleasanton, CA) to document the findings. An abnormal temporal macular reflex in the form of a horizontal band was noted in both eyes, but was better appreciated in the left eye (Figure 1). This area seemed hypopigmented compared to the surrounding retina. Pulsations were confirmed in both eyes at this area (Video 1, available in the online version of this article), which decreased in amplitude with reduction of pressure on the globe with the RetCam handheld camera. These were in phase with induced arterial pulsations at the disc. These findings were again confirmed by indirect ophthalmoscopy with scleral indentation.

The temporal macular pulsations observed in our case may be a result of a superficial lateral long posterior ciliary artery (PCA). The lateral long PCA is known to supply a sector of the choroid temporal to the macular region, with its apex oriented posteriorly.\(^1\) PCAs have numerous interarterial and arteriovenous anastomoses in the choroid.\(^2\) In addition, we believe that hyperdynamic ocular circulation could also have existed due to the associated plus component of the disease. All of these factors may be responsible for the easily visible PCA pulsations.

Behera et al.\(^3\) previously demonstrated a case with satellite fovea-like light reflex in the temporal macula in zone I ROP previously treated with intravitreal bevacizumab injection. They also proposed this area to correspond to the site of entry of a lateral long PCA. However, they noted induced pulsation with pressure from the RetCam console rather than spontaneous transmitted pulsation. These were also noted in the avascular region of the retina.

Such findings (transmitted pulsation from long PCA) are benign but rare to visualize. These can perplex a young ophthalmologist regarding the etiology and lead to unnecessary further ocular and orbital imaging. This case highlights the importance of in-depth knowledge of the vascular pattern and branches of PCA circulation.

REFERENCES


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The authors have no financial or proprietary interest in the materials presented herein.
doi:10.3928/01913913-20180709-02

Figure 1. Fundus photograph of an infant with retinopathy of prematurity with demarcation line (arrow) seen in zone II in the (A) right and (B) left eyes. Abnormal temporal macular reflex is seen in both eyes in the form of horizontal band (arrowheads), better seen in the left eye.