

Current Clinical Management of ROP

ROP will continue to be a threat for vision in this world of micropreemies.

BY AUDINA M. BERROCAL, MD

Retinopathy of prematurity (ROP) is a vasoproliferative retinopathy seen in premature and low-birth-weight infants that, left untreated, may lead to blindness. With the continued advances in neonatology, ROP is a significant threat to a premature infant's vision.¹

In 1984, the International Classification for Retinopathy of Prematurity (ICROP) gave us a common language. It defined the zones and the staging of ROP, including threshold disease.² Years later, the Cryo-ROP study looked at 4,099 patients, out of whom 6% developed threshold ROP.³ The Cryo-ROP study proved that cryotherapy treatment reduced unfavorable outcomes by 50%. Since that time, the trend has been to treat with laser rather than cryotherapy. Diode laser is the preferred wavelength for the treatment of ROP because it has deep penetration and reduces the absorption by the tunica vasculosa lentis, therefore diminishing the chances of creating cataractous alterations.

Over the last few years, increased survival of micropreemies has also increased the incidence of Zone 1 disease. Recognizing, treating and following up these babies has become more challenging. Babies who develop Zone 1 disease are smaller at birth, either by birth weight, gestational age, or both.

Zone 1 disease presents with attenuated vessels that show plus disease (tortuosity of veins and arteries) and flat neovascularization of the ridge (Figure 1). The classic presentation of ROP in Zone 2 is that of engorged, tortuous vessels with a well-formed, thick, and elevated ridge. It is important to realize that Zone 1 disease may never show a classic ridge. Eyes affected by Zone 1 disease must be treated aggressively and in a timely fashion, otherwise rapid disease progression is seen

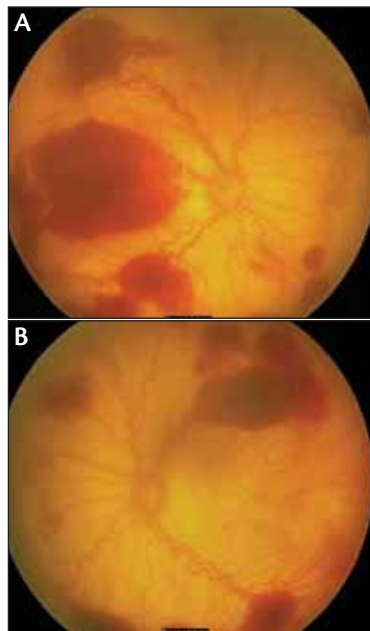


Figure 1. Right (A) and left eye (B) showing advanced, aggressive Zone 1 ROP with preretinal hemorrhages.

with preretinal hemorrhages and retinal detachments.

The Cryo-ROP study showed poor outcomes in 77% of Zone 1 eyes. The Early Treatment of ROP (ETROP) study showed a reduction of poor outcomes in Zone 1 eyes compared with the Cryo-ROP study.⁴ The importance of the ETROP study is that it has addressed Zone 1 disease and given us guidelines to treat these eyes at prethreshold. The ETROP study addressed plus disease and Stage 3 in Zone I, defining Type 1 ROP as a treatable disease.

Nevertheless, the outcomes of these eyes seem to be poor despite early treatment. Flynn et al have hypothesized that the reason why these eyes do poorly after laser is that we are seeing a vasculogenic drive instead of an angiogenic process.

ROP will continue to be a threat for vision in this age of micropreemies. It is important to have good and timely

screening to provide adequate and complete laser treatment and prevent 75 years of blindness per child. ■

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